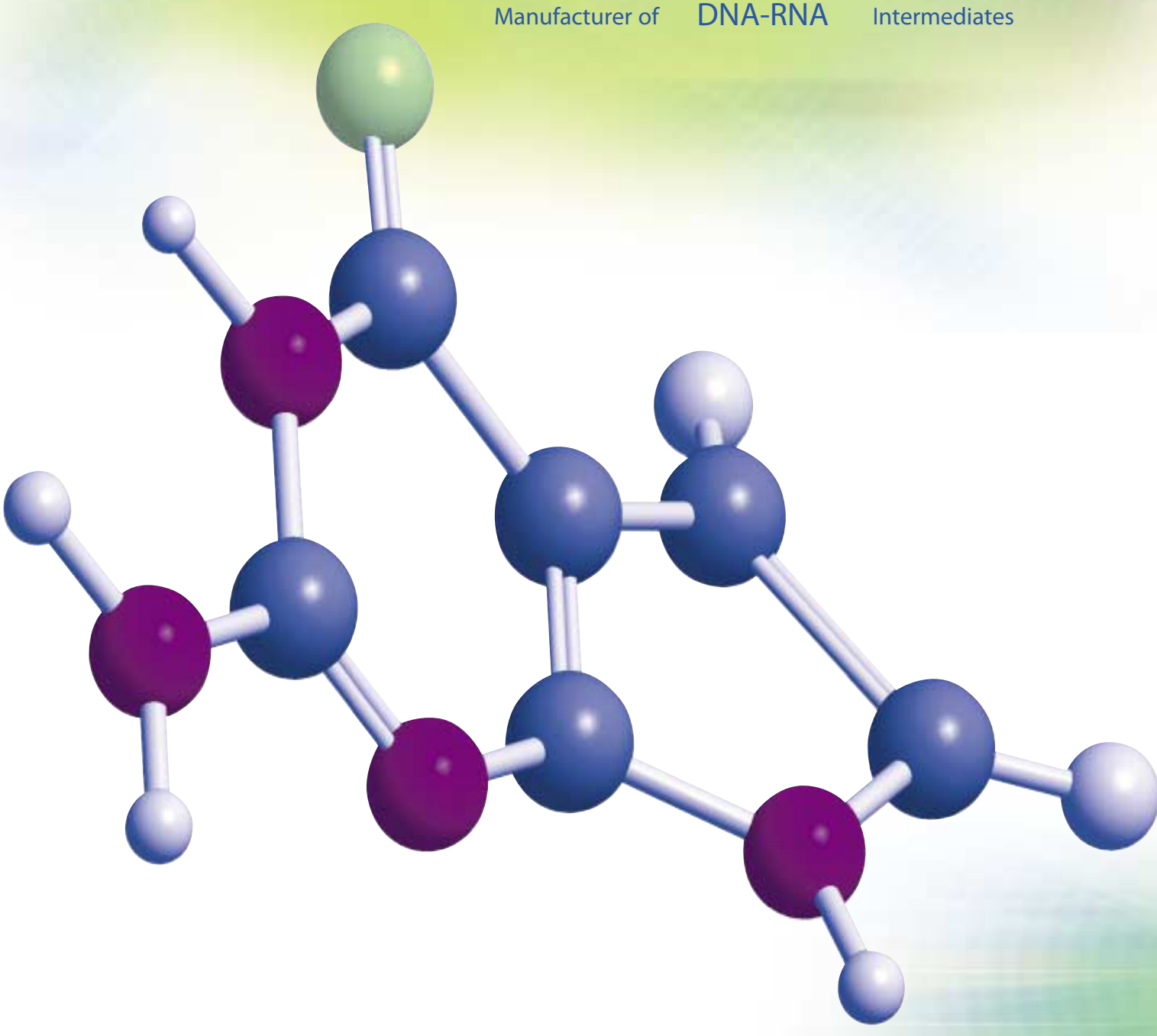
ChemGenes CORPORATION

E-Catalog Version 19.0

ChemGenes Corporation is now ISO 9001:2008 Certified Company

Bio Technology Products &

Manufacturer of DNA-RNA Intermediates



Product Highlight

Extensive Product Lines:

- DNA amidites: Bulk Quantities for therapeutics grade oligo synthesis
- Natural and modified DNA amidites
- Natural & modified RNA amidites : Bulk Quantities
- 2'-*O*-Methyl amidites: Bulk Quantities
- RNA Synthesis in Reverse Direction
- TOM amidites for RNA synthesis : Bulk Quantities
- 2'-*O*-ALE amidites
- 2'-*O*-PivOM amidites
- 2'-Fluoro amidites
- Non-Cleavable Inert Supports
- ETT & BMT : Bulk Quantities
- DDTT Sulfurizing Reagent
- UnyLinker Universal Support
- Akta Oligonucleotide Synthesizer Reagents
- *N*-Alkylated nucleosides and amidites
- 5-Azacytidine and 5-Aza-2'-deoxycytidine
- Thio uridines & thymidines nucleosides and amidites
- 6 & 5-FAM NHS Esters
- 6 & 5-FAM-(C-6 linker) amidites
- Biotin (BB)-(urea nitrogen protected) Supports & amidites
- Polyethylene glycol (PEG) (MW. 2000 and 4500) amidites
- 5'-MMTr nucleoside amidites (Purines: A & G)
- 8-Methyl dG & rG amidites
- 8-Oxo dA & dG amidites
- 5'-*O*-Methyl DNA amidites
- Fmoc Protected Nucleoside amidites
- 5-Formyl dU amidites
- Ammonia Free Deprotection Reagents
- Thiol modifiers (acyclic and cyclic)
- DNA and RNA Purification kit

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ChemGenes CORPORATION

Experience Nucleic Acid Expertise

Since 1981, the products and services provided by ChemGenes Corporation continue to accelerate the pace of DNA/RNA oligonucleotide synthesis, research, and development in the pharmaceutical and biotechnology industry.

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ChemGenes Corporation

Background

ChemGenes Corporation, a biotechnology company located in Wilmington, Massachusetts, has been a strong partner to researchers engaged in the field of DNA/RNA synthesis for more than 20 years. By starting out as a supplier of 'Ultra Pure Products' and then also by becoming an active Contract Researcher, ChemGenes Corporation has achieved unparalleled expertise in the field of DNA/RNA synthesis. Thus, all of us at ChemGenes have the opportunity and great pleasure to serve a vast number of scientists in the US and all over the world.

ChemGenes helds a number of patents in the field of standard, modified, as well as backbone modified DNA/RNA synthesis products. ChemGenes has a worldwide licensing agreement on US patent No.s 4,415,732 and 4,458,066, pioneering patents on the discovery of DNA and RNA synthesis by Caruthers and Beaucage. We had another worldwide licensing agreement on US patent No. Re 34,069, the presently popular cyanoethyl (CEP) phosphoramidite version for DNA and RNA synthesis.

ChemGenes product lines include phosphoramidites for DNA and RNA synthesis, Antisense phosphoramidites, modified bases for DNA, as well as RNA modification. In addition, we produce a variety of modified phosphoramidites for the introduction of chromophores and ligands. The availability of prepacked disposable columns of various pore sizes, loadings, low volume columns, ancillary reagents in configurations suitable for each synthesizer, and DNA purification cartridges is another way ChemGenes meets its customers' needs.

ChemGenes has a strong, dedicated, and talented team of professionals for the manufacturing of many natural and modified nucleoside bases. Included in these natural and modified bases are DMTr protected deoxy and ribo nucleosides, 2'-*O*-methyl and 2'-*O*-propargyl nucleosides, and silyl protected ribonucleosides.

A large variety of reagents for the synthesis of DNA/RNA are also available. These include 5-thioethyltetrazole (ETT), benzylthiotetrazole (BTT/BMT), DMTr-chloride, MMTr-chloride, and several types of phosphorylating reagents such as cyanoethyl chloro phosphitylating reagent, cyanoethyl tetra isopropyl phosphitylating reagent, cyanoethyl dichloro phosphitylating reagent and 5', 3'-bis silylating reagent.

As the market for oligonucleotides continues to grow, ChemGenes will stay committed to introducing novel products, while maintaining its existing product mix. We also have the capacity to custom synthesize products on request. Our highly trained technical staff is always available and happy to help you with your special needs and demands in this area. For information regarding the full range of products and their applications, please call us at 978-694-4500 or toll-free 800-762-9323, fax: 978-694-4502, or e-mail: info@chemgenes.com

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Special Gratitude

The nucleoside phosphoramidites available in this catalog are the result of the classical research contribution by Professor M.H. Caruthers and colleagues (University of Colorado, Boulder, CO) (Beaucage S. L.; Caruthers, M. H. Tet. Lett., 1981, 22,1859-1862). Other enormous contributions in this field have been made by Professor K.K. Ogilvie and colleagues (Acadia University, Acadia, Canada), Professor R.L. Letsinger and colleagues (Northwestern University, Evanston, IL), and Professor H. G. Khorana, Noble Laureate and colleagues (Massachusetts Institute of Technology, Cambridge, MA).

Patents, Licensing & Trademarks

Patent & Application Number | Title of Patent | Date Issued

7956169 **Synthesis of novel azo-dyes and their use in oligonucleotide synthesis** June 7, 2011

The invention provides a novel group of azo quencher compositions that are useful as quenchers of fluorescence and to methods for making and using them. The quenchers contain an azo bond and 1,3,3-trimethyl-2-methyleneindoline ring system. The quenchers can be derivatized to facilitate their conjugation to a variety of biologically relevant compounds, including lipids, nucleic acids, peptides, proteins, and the like.

7846436 Oligonucleotides and related compounds December 7, 2010

The present invention relates generally to oligonucleotides and more specifically to oligonucleotides which have a sequence including at least two CpG dinucleotides and a prodrug of an antimetabolite. The prodrug can be part of a CpG dinucleotide or may be attached elsewhere on the oligonucleotide.

9493773 **Synthesis of deuterated ribo nucleosides, N-protected phosphoramidites, and oligonucleotides**
App# CA2880496 Nov 15, 2016
App#CN104812770
App# EP2882769
App# WO2014022566

The present invention is directed towards the synthesis of high purity deuterated sugars, deuterated phosphoramidites, deuterated nucleobases, deuterated nucleosides, deuterated oligonucleotides, and deuterated RNA's of defined se-quences which can exhibit biochemically useful and biologically valuable properties, thus having potential for therapeutic uses.

9718855 **Nucleosides and oligonucleotides for studies on reversal of cytotoxic and mutagenic damage of DNA and as diagnosticstools** Aug 1, 2016

The present invention is directed to n-alkylated synthetic nucleosides of high regiospecific purity and oligonucleotides that can be utilized for studies on reversal of cytotoxic and mutagenic DNA damage, and as diagnostic tools.

App# CA2924186 **Long RNA, Highly efficient synthesis of long RNA using Reverse**
App# CN105916873 **Direction Approach** Oct 29, 2015
App# WO2015039053

The present invention relates to novel process of reverse 5 '→3 ' directed synthesis of RNA oligomers in the range of about 100-mer to about 200-mer has been developed and disclosed. Using that method demonstrated high quality RNA synthesis with coupling efficiency approaching 99%.

9884885 **Synthesis of labile base protected - modified deoxy & modified ribo nucleosides, corresonding phosphoramidites and supports and their use in high purity oligonucleotide synthesis** Mar 15,2012

This invention relates to novel method of synthesis of RNA utilizing N-2-acetyl protected guanine as nucleoside base, nucleosides, succinates, phosphoramidites, corresponding solid supports that are suitable for oligo deoxy nucleosides and RNA oligonucleotide synthesis. Our discovery using N-acetyl protected guanine as nucleoside base protecting group, which is significantly faster base labile protecting group, yet significantly more stable than commonly utilized -2-isobutyryl guanosine is a novel approach to obtain highest purity oligonucleotides. This approach is designed to lead to very high purity and very clean oligonucleotide, after efficient removal of the protecting groups, including acetyl group from guanine and to produce high purity therapeutic grade DNA oligonucleotides, RNA oligonucleotides, diagnostic DNA, diagnostic RNA for microarray platform. The deprotection of acetyl protecting groups of the natural deoxy and ribonu-cleosides occurs under substantially reduced time in contact with mild deprotection conditions such as mild bases, sec-ondary amines for removal of such groups under such conditions would allows synthesis of various DNA and RNA of highest purity for diagnostics and therapeutic application. This approach is designed to lead to high purity large.

9605261
App#EP2326656
App# CA2735251
App# CN102439025 **RNA synthesis—phosphoramidites for synthetic RNA in the reverse direction, and application in convenient introduction of ligands, chromophores and modifications of synthetic RNA at the 3'-end** Mar 28,2017

The present invention relates to novel phosphoramidites, A-n-bz, C-n-bz, C-n-ac, G-n-ac and U are produced with an HPLC purity of greater than 98% and 31P NMR purity greater than 99%. A novel process of reverse 5' $\longrightarrow$ 3'directed synthesis of RNA oligomers has been developed and disclosed. Using that method demonstrated high quality RNA synthesis with coupling efficiency approaching 99%

8541569 **Phosphoramidites for synthetic RNA in the reverse direction, efficient RNA synthesis and convenient introduction of 3'-end ligands, chromophores and modification of synthetic RNA** Sep 24,2013

The present invention provides building blocks and methods for synthesizing very pure RNA in a form that can efficiently be modified at the 3'-end. Reverse RNA monomer phosphoramidites have been developed for RNA synthesis in 5'$\longrightarrow$3' direction, leading to very clean oligo synthesis that allows for the introduction of various modifications at the 3'-end cleanly and efficiently. Higher coupling efficiency per step have been observed during automated oligo synthesis with the reverse RNA amidites disclosed herein, resulting in a greater ability to achieve higher purity and produce very long oligonucleotides. The use of the reverse RNA phosphoramidites in the synthetic process of this invention leads to oligo-nucleotides free of N+1 species.

8530634 **Oligonucleotide Labeling-Cycloaddition Reaction (Method of oligonucleotide labeling using cycloaddition reaction** Sep 10,2013

The invention provides a novel method of labeling oligonucleotides, with reporter moieties, including but not limited to, quenchers, fluorophores, biotin, digoxigenin, peptides and proteins. In addition, this invention provides a method of de-tecting hybridization of oligonucleotides. This invention also provides novel azo quenchers having the general formula shown below. The invention further provides compositions comprising labeled oligonucleotides and solid supports. The invention also provides kits comprising at least one composition of the present invention.

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9441002 **Dithiolane based thiol modifier (Dithiolane based thiol modifier for labeling and stronger immobilization of bio-molecules on solid surfaces** Sep 13,2016

The thiol modified oligonucleotides have vast number of applications in the field of nucleic acid chemistry. The conjugates generated by mono thiol groups are unstable at higher temperature, in high salt concentration buffers and in pres-ence other thiols. There is strong need to develop a novel thiol modifier probes that can generate multiple thiol groups. Described herein are efficient processes and compounds, dithiolane phosphoramidites derivative and dithiolane succinyl supports. The advantage of our cyclic disulfide thiol modifier is multifold a) each incorporation introduces two thiol groups; b) it can be introduced at any desired site of oligonucleotides; c) The symmetrical branching nature of the spacer in the linker arm of dithiolane allows for clean oligo synthesis, where cleavage of the linker arm and thereby of loss of oligo chain is prevented. We have successfully made 20-mer oligonucleotide containing single dithiolane derivative at 3', and 21-mer oligonucleotides containing single dithiolane derivative at 5′ or in the middle of the mixed base sequence. HPLC and ESI MS analysis of these oligonucleotides indicated satisfactory purity and correct composition of these oli-gos, respectively.

7932287 **Therapeutic compositions and uses** April 26, 2011

The invention provides compositions for and methods of treating a number of disorders. In one embodiment, the inven-tion provides a method of treating a wide range of conditions by administering to a human being in need of such treat-ment, a therapeutically effective amount of (a) N-6-trimethyl-L-lysine of at least 98% purity, (b) a prodrug thereof, (c) an aliphatic chain derivative thereof, (d) an ester derivative thereof, (e) an amide derivative thereof, or (f) a pharmaceutically acceptable salt of said N-6-trimethyl-L-lysine or said prodrug.

8389577 **Method of treating a human being for a class of metabolic defects and energy production disorders** Mar 5, 2013

The invention involves various embodiments of a method for treating a human being for a condition associated with (1) a clinical state of impairment of carnitine or carnitine esters, or decreased fatty acid metabolism, (2) low energy production or lower ATP production, (3) clinical hyperammonemia, and (4) clinically high pyruvate levels resulting from a deficiency in the biosynthesis of carnitine. The method involves administering a therapeutically effective salt of N-6-trimethyl-L-lysine.

8518992 **Method of synthesis and purification of N-6-trimethyl-L-lysine and derivative compounds** Aug 27, 2013

The invention provides a method of synthesis of N-6-trimethyl-L-lysine (TML) derivative compounds for potential treatment of disorders resulting from deficiencies in the TML-carnitine pathway. The invention also provides a method of puri-fication of TML and TML derivative compounds. The treatment of conditions of the diseases late infantile neuronal ceroid lipofuscinosis (LINCL) and neuronal ceroid lipofuscinosis (NCL) with TML were shown in the original parent application.

8778996 **Method of treating a human being for a class of neurological defects and seizure disorders** Jul 15, 2014

The invention involves various embodiments of a method for treating a human being for a condition associated with (1) seizures, myoclonic seizures, epilepsy, refractory epilepsy, hyperkinetic movements or tremors of hands or feet, (2) a state of ataxia, (3) accumulation of neuronal autofluorescent storage bodies in lysosomes or neurons, or regression of motor development, and (4) low alertness, dementia or mental retardation. The method involves administering a therapeu-tically effective salt of N-6-trimethyl-L-lysine.

8981076
App#WO2010062404 **Synthesis of N-FMOC protected deoxy nucleosides, ribo nucleosides,modified deoxy and ribo nucleosides, and phosphoramidites, and their use in oligonucleotide synthesis** Mar 17, 2015

This invention relates to synthesis of novel -N-FMOC protected nucleosides, succinates, phosphoramidites, corresponding solid supports that are suitable for oligo deoxy nucleosides and RNA oligonucleotide synthesis. Our discovery using N-FMOC as nucleoside base protecting group, which is highly base labile protecting group is a novel approach to obtain highest purity oligonucleotides. This approach is designed to lead to very high purity and very clean oligonucleotide, after efficient removal of the protecting groups and to produce high purity therapeutic grade DNA oligonucleotides, RNA oligonucleotides, diagnostic DNA, diagnostic RNA for microarray platform. The deprotection of FMOC protecting groups of the natural deoxy and ribonucleosides occurs under very mild deprotection conditions such as mild bases, secondary and tertiary amines for removal of such groups under such conditions would allows synthesis of various DNA and RNA of highest purity for diagnostics and therapeutic application. This approach is further designed to use FMOC protecting group on various base sensitive nucleoside, and for use in oligo peptide synthesis and for support bound oligo nucleo-tides. DNA oligonucleotides containing 3'-end dA at the 3'-terminal will be produced using the FMOC-dA-supports would lead to much reduced M−1 deletion sequences, and thereby high purity.

App# US20150018579
App# WO2013126034 **Synthesis of high purity DMT-C3-disulfide phosphoramidite** Jan 15, 2015

The 5' and 3'-thiol modified oligonucleotides are attractive tools with a vast number of potential applications in the field of nucleic acid chemistry. There is a strong interest in developing new disulfide compounds or to optimize synthesis of existing disulfide modifiers, which are efficient in generating the 3'- or 5'-end reactive thiol group. Various synthetic pro-tocols have been employed to synthesize pure 3-((3-(bis(4-dimethoxytrityl)propyl)di-sulfanyl)propyl 2-cyanoethyl diiso-propylphosphoramidite (compound 2) starting from 3-(dimethoxytrityl)propyl)disulfanyl)pro-pan-1-ol, (compound 1). Here-in, we describe an efficient, reproducible synthetic and purification protocol for target compound 2 from the compound 1. It is noteworthy that our reaction conditions were reproducible even at multi-gram scale (27 g) with a purity level as achieved in a small scale.

US8618279B2 **Synthesis of 2', 3'— and 3', 5'—cyclic phosphate mono-and oligonucleotides** Jan 12, 2011

The invention provides a novel method for the chemical synthesis of 2',3'-cyclic phosphate and phosphorothioate of mono and terminated oligonucleotides synthesis. The invention also provides a novel method of for the chemical synthesis of 2', 3'- and 3', 5'-cyclic phosphate and phosphorothioate mononucleotide nucleotides. The process is based on quick and efficient cyclization of phosphoramidate moiety and neighboring hydroxyl group. The present invention is directed towards the synthesis of high purity DNA and RNAs, specifically to introduce cyclic phosphate at 3'-end of oligo-nucleotides. Such DNA and RNA's have extensive application in therapeutics, diagnostics, drug design, and selective inhibition of an RNA sequence within cellular environment, in pre-tRNA cleavage and in ribozyme ligation. The 2',3'-cyclic phosphate nucleosides are involved in a vast number of applications in molecular biology in general and mammalian cells in particular. The invention also envisions providing kits comprising at least one composition disclosed in the pre-sent invention.

Previously Issued Patent:

5744595 **Propargyl modified nucleosides and nucleotides** April 28, 1998

The present invention describes a novel 2'-O-alkylation reaction to produce a novel series of nucleosides carrying the 2'-O-propargyl group, using propargyl bromide, dibutyl tin oxide and tetrabutyl ammonium bromide. The procedure involves novel techniques for regioselective introduction of 2'-/3'-O-propargyl group directly on the 5'-DMT-N-protected- nucleo-sides using dibutyl tin oxide as a mild base in conjunction with a phase transfer catalyst, tetrabutyl ammonium bromide. The reaction process has many significant features and leads to isomeric ratios in favor of the 2'-regio isomer. This al-lows the synthesis of the corresponding phosphoramidites of high purity.

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5525719 **N-protected-2'-O-methyl-and N-protected-3'-O-methyl-ribonucleosides and their phosphoramidite derivatives** June 11,1996

This invention is directed to processes for producing high purity N-protected-2'-O-methyl-5'-dimethoxytrityl-3' ribo-nucleo-side methoxy, N,N-diisopropyl phosphoramidites (group 1), and N-protected-2'-O-methyl-5'-dimethoxytrityl-3'-ribonucleoside ethoxy, N,N-diisopropyl phosphoramidites (group 2). This invention is further directed to the process for producing high purity 2'-O-methyl-5'-dimethoxytrityl-inosine (structure IX; group 3), and 2'-O-methyl-5'-dimethoxytrityl-inosine-3'-cyanoethyl, N,N-diisopropyl phosphoramidite (structure Xa; group 3). This invention is also directed to the pro-cess for producing high purity N-protected-3'-O-methyl-5'-dimethoxytrityl ribonucleosides (group 6), and N-protected-3'-O-methyl-5'-dimethoxytrityl-2'-ribonucleoside cyanoethyl, N,N-diisopropyl phosporamidites (group 7).

5214135 **N-protected-2'-O-methyl-ribonucleosides and N-protected 2'-O-methyl-3'-cyanoethyl-N-,N-diispropyl phosphoramidite ribonucleosides** May 25, 1993

This invention is directed to N (amino)-protected-2'-O-methyl (methoxy)-5'-dimethoxytrityl (dimethoxytrityl) ribonu-cleo-sides (Group I compounds) and to N-protected-2'-O-methyl-5'-dimethoxytrityl-3'-ribonucleoside cyanoethyl N,N-diisopropyl phosphoramidites (Group II compounds). This invention is further directed to the processes involved in pro-ducing these compounds. The purification processes produce products in Group I with purity in excess of 99.50% and up to 99.8%. The purity of the products in Group II ranges in excess of 99.8% and up to 99.9%.

6015886 **2'-O-Methyl, Ethyl phosphoramidite, (Oligonucleotide phosphate esters)** Jan 18, 2000

This invention relates to synthetic oligonucleotides that are useful for antisense based therapeutic applications. The syn-thetic oligonucleotides of this invention have modifications in the sugar phosphate backbone for improved anti-sense properties.

Licensed Patents:

TOM Amidites, ChemGenes Corp. holds worldwide license of Patent# 5986084,
from Qiagen Inc.

ssR amino linker, ChemGenes Corp. holds worldwide license of Patent# 7491857 B2.
NIAIST & DNA Chip Research, Japan

2'-O-ALE-5'-NPPOC amidites, ChemGenes Corp. holds worldwide license of Patent# 025566 A1 from McGill University and Wisconsin Alumni Research Foundation.

Unylinker Support TM, ChemGenes Corp. holds worldwide license of Patent# US7202264; Isis Pharmaceuticals, Inc.

2'-O-Pivaloyloxymethyl(PivOM) Patent, ChemGenes Corp. holds worldwide license of Patent# 2009144418, Debart, F; Vasseur, J.-J; Lavergne, T. "Process for the solid phase synthesis of RNA".

Tools for Molecular Biology Research

Natural DNA Amidites, Supports & Oligo Synthesis Reagents

Ancillary Reagents For Automated Oligonucleotide Synthesizer

(ABI, Akta, Expedite, MerMade Oligonucleotide synthesizers)

Modified DNA Amidites and Supports

DNA purification kit

Natural RNA Amidites and Supports

Modified RNA Amidites and Supports

RNA Purification kit

2'-O-Alkyl/Antisense Oligonucleotide Modifications

CombiClick™ Chemistry Products

Chromophores and Ligands

Nucleosides

Nucleosides (Base N-Unprotected)

Nucleosides (Base-N-protected)

DMTr Protected Nucleosides

Reagents for Nucleic Acid Chemistry

Purines, Pyrimidines & Sugars

Fluorescein and Biotin NHS esters

Monophosphates

Diphosphates

Triphosphates

Appendix & Index

Ordering Information

Quality:

ChemGenes Corporation products are manufactured under carefully controlled conditions and whenever applicable are constantly analyzed by Ultra Violet (UV) Spectroscopy. Thin Layer Chromatography, Electrophoresis, High Performance Liquid Chromatography (HPLC), Enzymatic, and Sequential Analysis. A product analysis report is enclosed with each shipment of our products.

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- Product name.
- Quantity.
- Your purchase order number.
- Shipping and billing address.

Quotations for quantities in excess of those listed in our catalog will be supplied upon request.

Delivery:

Orders for the products listed in our catalog will be filled promptly from our stock. When complete shipments cannot be made, partial shipments will be made at our discretion or if agreed upon with the customer.

All international orders must be 100% pre-paid (including shipping and handling charges) prior to shipment. Payment terms for U.S. customers are determined in ChemGenes discretion. Purchaser is solely responsible for any sales taxes, VAT, duties, and other similar charges in connection with the purchase of the products. All products are shipped freight paid with ChemGenes reserving the right to choose the best possible shipping method.

Shipping dates provided by ChemGenes are given on the basis of the best available information on hand. However, ChemGenes shall not be liable for any loss, damage or expense (consequential or otherwise) incurred by the purchaser if ChemGenes fails to meet specified delivery dates.

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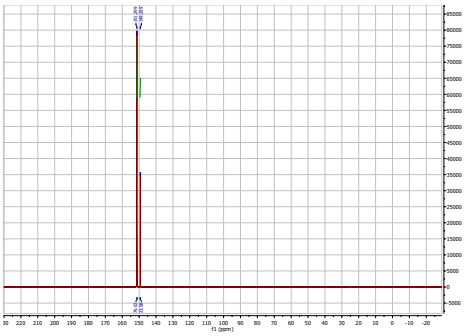
Oligo Synthesis Products

Phosphoramidites and Supports for Natural DNA Synthesis

Quality Control Criteria for UltraPure DNA Phosphoramidites

^{31}P NMR

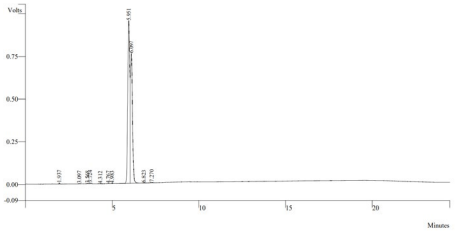
- Single or double peak
- Detection Limit: 0.08%



^{31}P NMR of 5′-O-DMTr -2′-O-TBDMS Guanosine ((N-iBu) 3′-CEP

HPLC

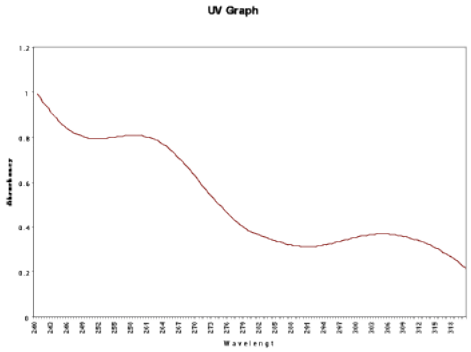
- Single or double peak
- Detection limit: 0.5%



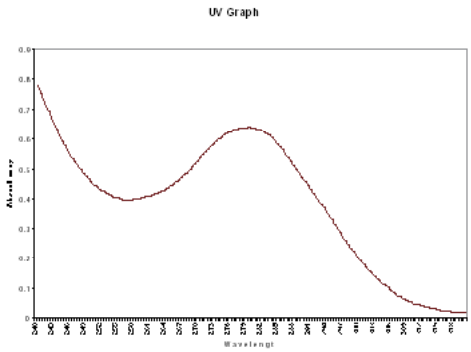
HPLC Graph of 5′-O-DMTr -2′-O-TBDMS Adenosin (N-Bz) 3′-CEP

UV Characterization

- Used to characterize the purine or pyrimidine structure and substituent



UV Spectrum of dC (N-Bz) CEP



UV Spectrum of dA (N-Bz) CEP

Solubility Test

- 200 mg of pure dry product in 1.0 ml of dry acetonitrile (H_2O Content < 0.004-0.005 g / 100 ml)

Coupling Test

- Greater than 99% under set conditions specified in the data sheet supplied with compound.

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Quality Control Criteria for UltraPure DNA Phosphoramidites

ChemGenes has been in business for over 33 years and for over 10 years are established in a state of the art facility just outside of Boston, Massachusetts, USA. ChemGenes has full scale modernized facilities to manufacture in bulk while maintaining its high quality. We have added many new products to our original line to facilitate and stay current in research & development in the area of biotechnology.

As the market for oligonucleotides continues to grow, ChemGenes remains committed to introducing novel products, while maintaining its existing product mix. We also have the capacity to custom synthesize products on request.

Our quality is guaranteed! We want to assure you that every product is of the highest purity and conforms to the certificate of analysis that accompanies it when shipped.

• ChemGenes takes pride in a long history of customer satisfaction in supplying the highest purity phosphoramidites & supports for oligonucleotide synthesis.

• Robust quality system to ensure full documentation of products for oligonucleotide Therapeutics.

• Each lot of phosphoramidite must pass established testing criteria before it can be shipped to customers.

ChemGenes Quality Policy Statement

ChemGenes Corporation is dedicated to producing high quality products for DNA/RNA synthesis to our customers through:

• Excellence in Manufacturing
• Long Term Relationships
• Providing Value
• Satisfaction
• On-Time Delivery, and
• Continually Improving the effectiveness of our Quality Management System.

Required QC Tests for Most Phosphoramidites

Solubility test

• Amidites completely dissolve in Acetonitrile to make a 0.1M Solution (water <0.004-0.005 gm/100 mL). Leaves no visible particulate matter.

Coupling Efficiency

• The coupling efficiency of ChemGenes phosphoramidite products are functionally tested to 98% or better.

HPLC
• Greater than 98% purity by HPLC.

^{31}P NMR
• Doublet peak or single peak.
• Position of each peak is known for each phosphoramidite.
• The value between the peaks is calculated and recorded.

UV – The UV test provides 4 values of data:
• The ratio between 250/260 nm.
• The ratio between 260/280 nm.
• emax position.
• Extinction Coefficient.

MASS Spectrum
• ESI-MS performed on each product.

^{1}H NMR
• Proton NMR analysis is performed for each product.

GC-MS and Head Space Analysis for solvent low volatile substances

LC/MS
• LC-MS performed on each product.

TLC
• Single or double spot (depends on the phosphoramidite) with no other visible impurity on spotting, 0.2 mg/spot.

Moisture Content: <0.1% (<1000 PPM)

Optical Rotation (for L-Amidites): Angle of Rotation is measured.


Certificate of Registration

Intertek

This is to certify that the quality management system of

ChemGenes Corporation

33 Industrial Way, Wilmington, Massachusetts, 01887, USA

has been assessed and registered by Intertek as conforming to the requirements of

ISO 9001:2008

The quality management system is applicable to

Manufacturer of high quality DNA/RNA synthesis products, standard and modified partially protected and unprotected nucleosides and phosphoramidite chemistry products for academic research, biopharmaceutical and diagnostics markets.

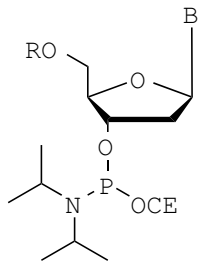
Certificate Number: CMS-1190-01
Initial Certification Date: 09 May 2013
Certificate Issue Date: 09 May 2016
Certificate Expiry Date: 14 September 2018

Chris Wilkinson, President
Intertek Testing Services NA, Inc
900 Chelmsford Street, Suite 301-3, Lowell, MA, USA

ANAB

Oligo Synthesis Products

Phosphoramidites and Supports for Natural DNA Synthesis



Amidites for Natural DNA Synthesis with Standard Base Protection

R	B	Protection	Catalog#	CAS No:
DMTr	A	*N*-Bz	ANP-5551	98796-53-3
DMTr	C	*N*-Bz	ANP-5552	102212-98-6
DMTr	G	*N*-*i*Bu	ANP-5553	93183-15-4
DMTr	T	N/A	ANP-5554	98796-51-1
DMTr	C	*N*-*i*Bu	ANP-5559	110522-84-4
DMTr	C	*N*-Ac	ANP-5560	154110-40-4
MMTr	A	*N*-Bz	ANP-5556	
MMTr	G	*N*-*i*Bu	ANP-5557	
MMTr	C	*N*-Bz	ANP-5558	
MMTr	T	N/A	ANP-5561	

Catalog #	Product Name	250mg	500mg	1g	2g	5g	10g	30g
ANP-5551	2'-Deoxy-adenosine (*N*-Bz)-3'-CEP, *M.W. 857.92*	$10.00	$18.00	$32.00	$58.00	$130.00	$216.00	$580.00
ANP-5552	2'-Deoxy-cytidine (*N*-Bz) 3'-CEP, *M.W. 833.89*	$10.00	$18.00	$32.00	$58.00	$130.00	$216.00	$580.00
ANP-5553	2'-Deoxy-guanosine (*N*-*i*Bu) 3'-CEP, *M.W. 839.90*	$10.00	$18.00	$32.00	$58.00	$130.00	$216.00	$580.00
ANP-5554	Thymidine-3'-CEP, *M.W. 744.81*	$10.00	$18.00	$32.00	$58.00	$130.00	$216.00	$580.00
ANP-5559	2'-Deoxy-cytidine (*N*-*i*Bu)-3'-CEP, *M.W. 799.89*	$15.00	$27.00	$51.00	$86.00	$210.00	$400.00	$950.00
ANP-5560	2'-Deoxy-cytidine (*N*-Ac)-3'-CEP, *M.W. 771.84*	$10.00	$18.00	$32.00	$58.00	$130.00	$216.00	$580.00
ANP-5556	MMTr-2'-deoxy-adenosine (*N*-Bz)-3'-CEP, *M.W. 827.91*	$15.00	$27.00	$51.00	$86.00	$210.00	$400.00	$950.00
ANP-5557	MMTr-2'-deoxy-guanosine (*N*-*i*Bu)-3'-CEP, *M.W. 809.89*	$15.00	$27.00	$51.00	$86.00	$210.00	$400.00	$950.00
ANP-5558	MMTr-2'-deoxy-cytidine (*N*-Bz)-3'-CEP, *M.W. 803.88*	$15.00	$27.00	$51.00	$86.00	$210.00	$400.00	$950.00
ANP-5561	MMTr-Thymidine-3'-CEP, *M.W. 714.79*	$15.00	$27.00	$51.00	$86.00	$210.00	$400.00	$950.00

Mixed Phosphoramidites (Equimolar)

(ANP-5551, ANP-5552 or 5559 or 5560, ANP-5553 and ANP-5554)

Catalog #	Quantity	Prices
ANP-1070	250mg	$30.00
	500mg	$55.00
	1g	$100.00
	2g	$180.00

Typical Deprotection Conditions

- 45 minutes at R.T. for cleavage of oligo from support with concentrated ammonium hydroxide.
- Cleavage of base protection can be accomplished by either:
  - using concentrated ammonium hydroxide at 37°C for 16-24 hours, or
  - using concentrated ammonium hydroxide at 55°C for 6-8 hours.
  - (time ranges are dependant on the oligo chain length)

for faster deprotection conditions please see pages 5 & 7

Advantages and application of 5' -MMTr in Purine Bases for Oligo Synthesis

Due to the use of 5-ethylthiotetrazole (in most DNA/RNA Synthesis Protocols), which is more acidic in nature compared to 1-*H*-Tetrazole, the DMTr group from purine bases is removed to a certain extent in the coupling step during oligo synthesis, thereby causing undesired M+1 oligo growth.

Since purine bases, A & G, cleave at the 5'-DMTr at a much higher rate than 5'-MMTr, the 5'-MMTr protected nucleoside phosphoramidites is preferred; thus offering a minimal level of M+1 impurities.

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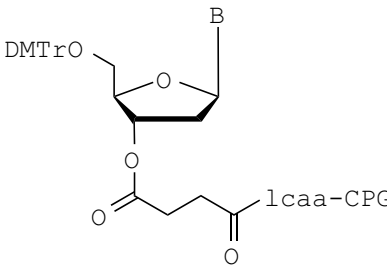

Solid Supports for Natural DNA Synthesis with Standard Base Protection

B	Protection	Catalog #
A	*N*-Bz	N-5101
C	*N*-Bz	N-5102
G	*N*-*i*Bu	N-5103
T	N/A	N-5104
C	*N*-*i*Bu	N-5112
C	*N*-Ac	N-5212
G	*N*-DMF	N-9898

			Bulk CPG			pack of 4 cols.			each		pack of 10 cols.		
Catalog #	Product Name	Pore Size	100 mg	1 g	5 g	40 nmole	0.2 µmole	1.0 µmole	10 µmole	15 µmole	40 nmole	0.2 µmole	1.0 µmole
N-5101-05	2'-Deoxyadenosine	500Å											
N-5101-10	(*N*-Bz)-3'-lcaa-CPG	1000Å	$7	$60	$260	$24	$30	$38	$80	$110	$50	$62	$75
N-5101-20		2000Å											
N-5102-05	2'-Deoxycytidine	500Å											
N-5102-10	(*N*-Bz)-3'-lcaa-CPG	1000Å	$7	$60	$260	$24	$30	$38	$80	$110	$50	$62	$75
N-5102-20		2000Å											
N-5103-05	2'-Deoxyguanosine	500Å											
N-5103-10	(*N*-*i*Bu)-3'-lcaa-CPG	1000Å	$7	$60	$260	$24	$30	$38	$80	$110	$50	$62	$75
N-5103-20		2000Å											
N-5104-05	Thymidine-3'-lcaa-CPG	500Å											
N-5104-10		1000Å	$7	$60	$260	$24	$30	$38	$80	$110	$50	$62	$75
N-5104-20		2000Å											
N-5112-05	2'-Deoxycytidine	500Å											
N-5112-10	(*N*-*i*Bu)-3'-lcaa-CPG	1000Å	$7	$60	$260	$24	$30	$38	$80	$110	$50	$62	$75
N-5112-20		2000Å											
N-5212-05	2'-Deoxycytidine	500Å											
N-5212-10	(*N*-Ac)-3'-lcaa-CPG	1000Å	$7	$60	$260	$24	$30	$38	$80	$110	$50	$62	$75
N-5212-20		2000Å											
N-9898-05	2'-Deoxyguanosine	500Å											
N-9898-10	(*N*-DMF)-3'-lcaa-CPG	1000Å	$14	$81	$280	$26	$33	$40	$91	$126	$54	$62	$78
N-9898-20		2000Å											

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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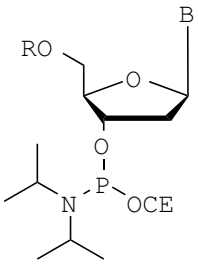
Oligo Synthesis Products

Phosphoramidites and Supports for Natural DNA Synthesis



Amidites for Natural DNA Synthesis with Labile (Mild) Base Protection

R	B	Protection	Catalog#	CAS No:
DMTr	A	*N*-PAC	ANP-6661	110543-74-3
DMTr	A	*N*-DMA	ANP-6565	
DMTr	C	*N*-PAC	ANP-6662	
DMTr	G	*N*-*t*BPAC	ANP-5668	149989-60-6
DMTr	T	N/A	ANP-5554	98796-51-1
DMTr	G	*N*-DMF	ANP-6769	330628-04-1
DMTr	A	*N*,*N*-di-Bz	ANP-6767	
DMTr	G	*N*-iPrPAC	ANP-5568	150065-82-0
DMTr	A	*N*-*t*BPAC	ANP-5569	149989-58-2
DMTr	G	*N*-Phenyl AC	ANP-5518	
MMTr	A	*N*-PAC	ANP-5116	
MMTr	G	*N*-*t*BPAC	ANP-5117	
MMTr	G	*N*-PAC	ANP-5118	

Catalog #	Product name	250mg	500mg	1g	2g	5g	10g
ANP-6661	2'-Deoxyadenosine (*N*-PAC)-3'-CEP, *M.W. 887.96*	$14.00	$25.00	$45.00	$80.00	$180.00	$320.00
ANP-6565	2'-Deoxyadenosine (*N*-DMA)-3'-CEP, *M.W. 822.93*	$14.00	$25.00	$45.00	$80.00	$180.00	$320.00
ANP-6662	2'-Deoxycytidine (*N*-PAC)-3'-CEP, *M.W. 863.93*	$14.00	$25.00	$45.00	$80.00	$180.00	$320.00
ANP-5668	2'-Deoxyguanosine (*N*-*t*BPAC)-3'-CEP, *M.W. 960.06*	$14.00	$25.00	$45.00	$80.00	$180.00	$320.00
ANP-5554	Thymidine-3'-CEP, *M.W. 744.81*	$10.00	$18.00	$32.00	$58.00	$130.00	$216.00
ANP-6769	2'-Deoxyguanosine (*N*-DMF)-3'-CEP, *M.W. 824.90*	$14.00	$25.00	$45.00	$80.00	$180.00	$320.00
ANP-6767	2'-Deoxyadenosine (*N*-diBz)-3'-CEP, *M.W. 962.04*	$25.00	$45.00	$81.00	$160.00	$340.00	$590.00
ANP-5568	2'-Deoxyguanosine (*N*-*i*Pr-PAC)-3'-CEP, *M.W. 946.04*	$20.00	$36.00	$65.00	$115.00	$263.00	$473.00
ANP-5569	2'-Deoxyadenosine (*N*-*t*BPAC)-3'-CEP, *M.W. 944.06*	$20.00	$36.00	$65.00	$115.00	$263.00	$473.00
ANP-5518	2'-Deoxyguanosine (*N*-Phenyl Ac)-3'-CEP, *M.W. 887.38*	$20.00	$36.00	$65.00	$115.00	$263.00	$473.00
ANP-5116	MMTr-2'-deoxyadenosine (*N*-PAC)-3'-CEP, *M.W. 857.93*	$20.00	$36.00	$65.00	$117.00	$263.00	$473.00
ANP-5117	MMTr-2'-deoxyguanosine (*N*-*t*BPAC)-3'-CEP, *M.W. 930.04*	$20.00	$36.00	$65.00	$117.00	$263.00	$473.00
ANP-5118	MMTr-2'-deoxyguanosine (*N*-PAC)-3'-CEP, *M.W. 873.93*	$20.00	$36.00	$65.00	$115.00	$263.00	$473.00

Typical Deprotection Conditions

- 45 minutes at R.T. for cleavage of oligo from support with concentrated ammonium hydroxide.
- Cleavage of base protection can be accomplished by either:
  - using concentrated ammonium hydroxide at 37°C for 6-8 hours, or
  - using concentrated ammonium hydroxide at 55°C for 2-4 hours.
  - (time ranges are dependant on the oligo chain length)

For faster deprotection conditions please see page 7

For Ammonia Free Oligo Deprotection Solution (Catalog # RN-1435, page #59) that can be used with the products on this pages 5 and 6.
The capping reagent phenoxy acetic anhydride is available for capping during oligonucleotide synthesis, please see pages 19-25.
For a description of the advantages of using 5'-MMTr nucleoside phosphoramidities, please see page # 3.

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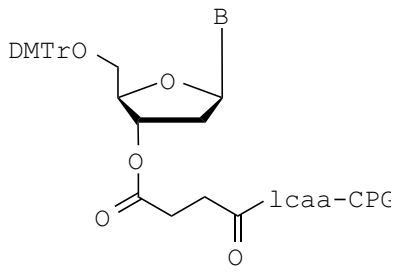

Solid Supports for Natural DNA Synthesis with Labile (mild) Base Protection

B	Protection	Catalog #
A	*N*-PAC	N-P5101
C	*N*-PAC	N-P5102
G	*N*-PAC	N-P5103
T	N/A	N-5104
G	*N*-*i*PrPAC	N-P5106

			Bulk CPG			pack of 4 cols.			each			pack of 10 cols.		
Catalog #	Product Name	Pore Size	100 mg	1 g	5 g	40 nmole	0.2 µmole	1.0 µmole	10 µmole	15 µmole	40 nmole	0.2 µmole	1.0 µmole
N-P5101-05	2'-Deoxyadenosine	500Å											
N-P5101-10	(*N*-PAC)-3'-lcaa CPG	1000Å	$14	$115	$540	$25	$30	$45	$140	$210	$50	$62	$94
N-P5101-20		2000Å											
N-P5102-05	2'-Deoxycytidine	500Å											
N-P5102-10	(*N*-PAC)-3'-lcaa CPG	1000Å	$14	$115	$540	$25	$30	$45	$140	$210	$50	$62	$94
N-P5102-20		2000Å											
N-P5103-05	2'-Deoxyguanosine	500Å											
N-P5103-10	(*N*-PAC)-3'-lcaa CPG	1000Å	$14	$115	$540	$25	$30	$45	$140	$210	$50	$62	$94
N-P5103-20		2000Å											
N-5104-05	Thymidine-3'-lcaa CPG	500Å											
N-5104-10		1000Å	$7	$60	$260	$24	$30	$38	$80	$110	$50	$62	$75
N-5104-20		2000Å											
N-P5106-05	2'-Deoxyguanosine	500Å											
N-P5106-10	(*N*-*i*PrPAC)-	1000Å	$14	$115	$540	$25	$30	$45	$140	$210	$50	$62	$94
N-P5106-20	3'-lcaa CPG	2000Å											

For deprotection conditions please refer to page # 5.

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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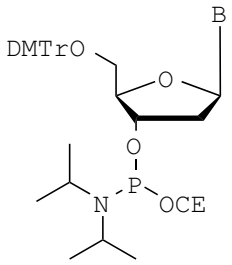
Phosphoramidites and Supports for Natural DNA Synthesis



Fast Deprotection Phosphoramidites using AMA Reagents

B	Protection	Catalog#	CAS No:
A	*N*-PAC	ANP-6661	110543-74-3
C	*N*-Ac	ANP-5560	154110-40-4
G	*N*-*t*BPAC	ANP-5668	149989-60-6
T	N/A	ANP-5554	98796-51-1

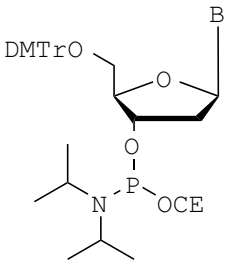
Catalog #	Product name	250mg	500mg	1g	2g	5g	10g
ANP-6661	2'-Deoxyadenosine (*N*-PAC)-3'-CEP, *M.W. 887.96*	$14.00	$25.00	$45.00	$80.00	$180.00	$320.00
ANP-5560	2'-Deoxycytidine (*N*-Ac)-3'-CEP, *M.W. 771.84*	$10.00	$18.00	$32.00	$58.00	$130.00	$216.00
ANP-5668	2'-Deoxyguanosine (*N*-*t*BPAC)-3'-CEP, *M.W. 960.06*	$14.00	$25.00	$45.00	$80.00	$180.00	$320.00
ANP-5554	Thymidine-3'-CEP, *M.W. 744.81*	$10.00	$18.00	$32.00	$58.00	$130.00	$216.00

Deprotection Conditions

- 5 minutes at room temperature (for cleavage of oligo) using AMA Reagent. AMA (Catalog # RN-1450 listed on page #21) is a 50:50 (*v*/*v*) ratio of ammonium hydroxide and methyl amine.
- Cleavage of base protecting groups can be accomplished by either: using AMA at 37 °C for 30 minutes, or using AMA at 55°C for 10 minutes.

For shorter sequences, standard base protected dA (*N*-Bz) amidite ANP-5551, dG (*N*-iBu) amidite ANP-5553, along with dC (*N*-Ac) amidite ANP-5560 are all recommended; however, for longer sequences it is recommended to use the above Fast Deprotecting Phosphoramidites, *i.e.* dA (*N*-PAC) amidite, dG (*N*-*t*BPAC) amidite, with the dC (*N*-Ac) amidite.

NOTE: Ancillary reagents for DNA synthesis using Fast Deprotecting Phosphoramides are available at ChemGenes and are listed on pages19-25.



Base Unprotected Amidites

B	Protection	Catalog#	CAS No:
A	none	ANP-7771	140613-55-4
C	none	ANP-7772	140613-57-6
G	none	ANP-7773	140613-56-5

Catalog #	Product name	250mg	500mg	1g	2g
ANP-7771	2'-Deoxyadenosine-3'-CEP, *M.W. 753.83*	$60.00	$110.00	$200.00	$380.00
ANP-7772	2'-Deoxycytidine-3'-CEP, *M.W. 729.80*	$60.00	$110.00	$200.00	$380.00
ANP-7773	2'-Deoxyguanosine-3'-CEP, *M.W. 769.83*	$60.00	$110.00	$200.00	$380.00

ChemGenes now offers deoxy nucleoside phosphoramidites of dA,dC & dG which do not have base protecting groups. The oligonucleotide coupling per step goes essentially quantitative. The synthesis using these phosphoramidites allows oligonucleotide synthesis which does not require ammonia normally used for base deprotection.

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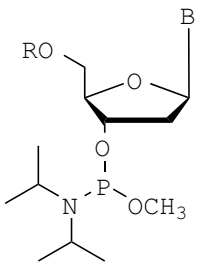

Natural DNA P-methoxy Amidites

R	B	Protection	Catalog#	CAS No:
DMTr	A	*N*-Bz	ANP-3761	84416-82-0
DMTr	C	*N*-Bz	ANP-3762	84416-83-1
DMTr	C	*N*-Ac	ANP-3769	833480-37-8
DMTr	G	*N*-*i*Bu	ANP-3763	84416-84-2
DMTr	G	*N*-DMA	ANP-3768	
DMTr	T	N/A	ANP-3764	
MMTr	A	*N*-Bz	ANP-3766	107573-07-9
MMTr	G	*N*-*i*Bu	ANP-3767	

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-3761	2'-Deoxyadenosine (*N*-Bz)-5'DMTr 3'-methyl phosphoramidite, *M.W. 818.90*	$20.00	$36.00	$65.00	$115.00	$263.00
ANP-3762	2'-Deoxycytidine (*N*-Bz)-5'DMTr 3'-methyl phosphoramidite, *M.W. 794.87*	$20.00	$36.00	$65.00	$115.00	$263.00
ANP-3769	2'-deoxycytidine (*N*-Ac)- 5'DMTr 3'-methyl phosphoramidite, *M.W. 732.80*	$25.00	$45.00	$80.00	$146.00	$328.00
ANP-3763	2'-Deoxyguanosine (*N*-*i*Bu)- 5'DMTr 3'-methyl phosphoramidite, *M.W. 800.88*	$20.00	$36.00	$65.00	$115.00	$263.00
ANP-3768	2'-deoxyguanosine (*N*-DMA)-5'DMTr 3'-methyl phosphoramidite, *M.W. 783.90*	$30.00	$54.00	$85.00	$155.00	$360.00
ANP-3764	Thymidine-5'DMTr 3'-methyl phosphoramidite, *M.W. 705.78*	$20.00	$36.00	$75.00	$145.00	$263.00
ANP-3766	5'-MMTr-2'-deoxyadenosine (*N*-Bz)- 3'-methyl phosphoramidite, *M.W. 788.87*	$25.00	$45.00	$80.00	$146.00	$328.00
ANP-3767	5'-MMTr-2'-deoxyguanosine (*N*-*i*Bu)- 3'-methyl phosphoramidite, *M.W. 770.85*	$25.00	$45.00	$80.00	$146.00	$328.00

Natural DNA methyl phosphoramidites

Methyl phosphate can be also used for aminoalkyl-phosphoramidate oligonucleotide modification that can be introduced postsynthetically. Similar pathway for postsynthetic labeling was applied using *H*-phosphonates strategy.

Important : Deprotection Conditions

- For natural phospodiester: use thiophenol solution (Catalog # RN-1465 on page # 19-25) to thoroughly remove the *P*-Methoxy groups prior to ammonia base deprotection.
- In the anti-sense study, the neutral phosphate triester backbone displayed high nuclease resistance and improved cellular uptake. For *P*-Methoxy phospodiester oligonucleotides: use PAC protected methylphosphoramidites listed on page # 104 in combination with our ammonia free deprotection solution listed on page # 59.

Please see page #104 for DNA methyl phosphoramidites with labile base deprotection (PAC).
Please see page #102 for DNA methyl phosphonamidites.
Please see page #100 for DNA ethyl phosphoramidites.

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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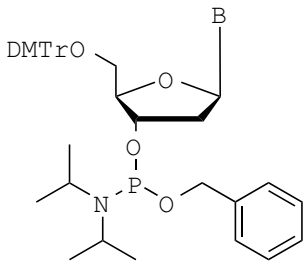
Phosphoramidites and Supports for Natural DNA Synthesis



P-O-benzyl Phosphoramidites

B	Protection	Catalog#
A	*N*-Bz	ANP-6731
C	*N*-Bz	ANP-6732
G	*N*-*i*Bu	ANP-6733
T	N/A	ANP-6734

Catalog #	Product name	100mg	250mg	500mg	1g	2g
ANP-6731	2'-Deoxyadenosine (*N*-Bz) 3'-O-benzyl phosphoramidite, *M.W. 894.99*	$24.00	$54.00	$90.00	$160.00	$290.00
ANP-6732	2'-deoxycytidine (*N*-Bz) 3'-O-benzyl phosphoramidite, *M.W. 870.97*	$24.00	$54.00	$90.00	$160.00	$290.00
ANP-6733	2'-deoxyguanosine (*N*-*i*Bu) 3'-O-benzyl phosphoramidite, *M.W. 876.98*	$24.00	$54.00	$90.00	$160.00	$290.00
ANP-6734	Thymidine 3'-O-benzyl phosphoramidite, *M.W. 781.87*	$24.00	$54.00	$90.00	$160.00	$290.00

Applications of benzyl phosphoramidites:

- Synthesis of Natural DNA fragents.
- Cleavage of *P*-*O*-benzyl phosphate occurs smoothly with aqueous ammonia.
- The synthesis of sequence specific phosphoramidites.

Nielson, J.; Caruthers, M. H. *Jour. Am. Chem Soc.* **1988**, *110*, 6275-6276.

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
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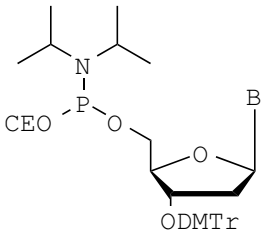
Phosphoramidites and Supports for Natural DNA Synthesis

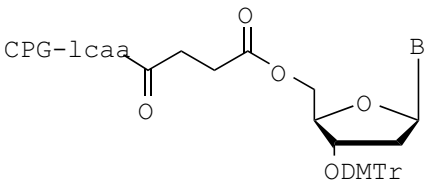


Reverse DNA Synthesis

B	Protection	Catalog#	CAS No:
A	*N*-Bz	ANP-4671	140712-82-9
C	*N*-Bz	ANP-4672	140712-83-0
G	*N*-*i*Bu	ANP-4673	140839-24-3
T	N/A	ANP-4674	134031-86-0
C	*N*-Ac	ANP-4675	
G	*N*-DMF	ANP-4678	
A	*N*-PAC	ANP-4681	

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-4671	3'-*O*-DMTr-2'-deoxyadenosine (*N*-Bz) 5'-CEP, *M.W. 857.92*	$70.00	$130.00	$230.00	$410.00	$925.00
ANP-4672	3'-*O*-DMTr-2'-deoxycytidine (*N*-Bz) 5'-CEP, *M.W. 833.89*	$70.00	$130.00	$230.00	$410.00	$925.00
ANP-4673	3'-*O*-DMTr-2'-deoxyguanosine (*N*-*i*Bu) 5'-CEP, *M.W. 839.90*	$70.00	$130.00	$230.00	$410.00	$925.00
ANP-4674	3'-*O*-DMTr-Thymidine 5'-CEP, *M.W. 744.80*	$70.00	$130.00	$230.00	$410.00	$925.00
ANP-4675	3'-*O*-DMTr-2'-deoxycytidine (*N*-Ac) 5'-CEP, *M.W. 771.84*	$70.00	$130.00	$230.00	$410.00	$925.00
ANP-4678	3'-*O*-DMTr-2'-deoxyguanosine (*N*-DMF) 5'-CEP, *M.W. 824.90*	$70.00	$130.00	$230.00	$410.00	$925.00
ANP-4681	3'-*O*-DMTr-2'-deoxyadenosine (*N*-PAC) 5'-CEP, *M.W. 887.96*	$70.00	$130.00	$230.00	$410.00	$925.00

Reverse 7-Deaza-dG-phosphoramidite (ANP-4679) DNA monomer is listed on page # 34.
Reverse 2'-Fluoro DNA amidites are listed on page # 76.



Standard CPG for Reverse DNA Synthesis

B	Protection	Catalog #
A	*N*-Bz	N-3351
C	*N*-Bz	N-3352
G	*N*-iBu	N-3353
T	N/A	N-3354

			Bulk CPG		pack of 4 cols.		pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	1 g	0.2 µmole	1.0 µmole	0.2 µmole	1.0 µmole
N-3351-05	2'-Deoxyadenosine	500Å						
N-3351-10	(*N*-Bz)-5'-lcaa CPG	1000Å	$45	$350	$100	$150	$200	$300
N-3351-20		2000Å						
N-3352-05	2'-Deoxycytidine	500Å						
N-3352-10	(*N*-Bz)-5'-lcaa CPG	1000Å	$45	$350	$100	$150	$200	$300
N-3352-20		2000Å						
N-3353-05	2'-Deoxyguanosine	500Å						
N-3353-10	(*N*-*i*Bu)-5'-lcaa CPG	1000Å	$45	$350	$100	$150	$200	$300
N-3353-20		2000Å						
N-3354-05	Thymidine-	500Å						
N-3354-10	5'-lcaa CPG	1000Å	$45	$350	$100	$150	$200	$300
N-3354-20		2000Å						

Applications of Reverse Phosphoramidites:

- Synthesis of 3'-3'-linked DNA.
- Synthesis of special oligonucloetides required to be coupled at the 5'-end selectively.
- Synthesis of oligonucloetide from left to right (5'->3' direction).
- Synthesis of oligonucloetide with specific 3'-conjugation.

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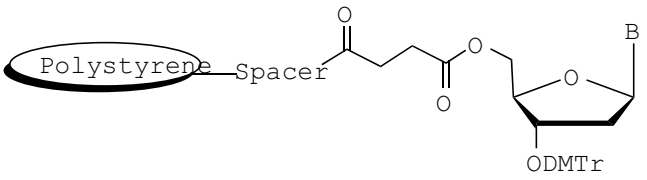
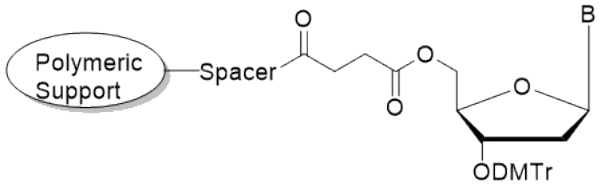
Phosphoramidites and Supports for Natural DNA Synthesis



Succinyl Polystyrene Supports for Reverse DNA Synthesis

B	Protection	Catalog #
A	*N*-Bz	PS-7511
C	*N*-Bz	PS-7515
G	*N*-*i*Bu	PS-7513
T	N/A	PS-7514

Catalog #	Product Name	Pore Size	Particle Size	Bulk Polystyrene Loading 30-40 µm/g 100 mg	1 g	5 g	pack of 4 cols. 40 nmole	0.2 µmole	1.0 µmole	pack of 10 cols. 40 nmole	0.2 µmole	1.0 µmole
PS-7511-03	2'-Deoxy-Adenosine (N-Bz)-5'-succinyl Polystyrene Support	300Å	15-20 µm 60-70 µm	$35	$245	$753	$50	$65	$80	$100	$130	$160
PS-7515-03	2'-Deoxy-Cytidine (N-Ac)-5'-succinyl Polystyrene Support	300Å	15-20 µm 60-70 µm	$35	$245	$753	$50	$65	$80	$100	$130	$160
PS-7513-03	2'-Deoxy-Guanosine (*N*-*i*Bu)-5'-succinyl Polystyrene Support	300Å	15-20 µm 60-70 µm	$35	$245	$753	$50	$65	$80	$100	$130	$160
PS-7514-03	Thymidine-5'-succinyl Polystyrene Support	300Å	15-20 µm 60-70 µm	$35	$245	$753	$50	$65	$80	$100	$130	$160



High Loading Succinyl Polymeric Supports for Reverse DNA Synthesis (loading greater than 150 µmol/g)

B	Protection	Catalog #
A	*N*-Bz	PMS-7311
C	*N*-Bz	PMS-7315
G	*N*-*i*Bu	PMS-7313
T	N/A	PMS-7314

Catalog #	Product Name	Pore Size	Particle Size	1 g	2 g	5 g	10 g
PMS-7311-03	2'-Deoxy-Adenosine (N-Bz)-5'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$384	$768	$1,230
PMS-7315-03	2'-Deoxy-Cytidine (N-Ac)-5'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$384	$768	$1,230
PMS-7313-03	2'-Deoxy-Guanosine (*N*-*i*Bu)-5'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$384	$768	$1,230
PMS-7314-03	Thymidine-5'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$384	$768	$1,230

ChemGenes has developed unique Polystyrene Support sand columns that have special appeal due to rigidity, non-swelling, and inertness towards moisture and water.

Our Polymeric Support has a special linker and different pore size . This unique cross-linking nature matches very closely with the commonly used CPG (500 Å).

Our supports have consistently displayed outstanding performance for the synthesis of medium length oligos of varying sizes.

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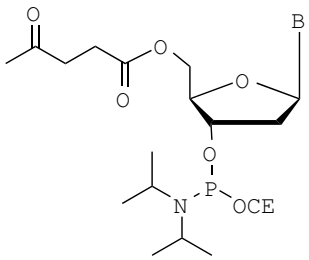
Phosphoramidites and Supports for Natural DNA Synthesis



Levulinyl DNA Phosphoramidites with Standard Base Protection

B	Protection	Catalog#	CAS No:
A	*N*-Bz	ANP-5001	
C	*N*-Bz	ANP-5002	
G	*N*-*i*Bu	ANP-5003	
T	N/A	ANP-5004	581076-14-4

Catalog#	Product Name	250mg	500mg	1g	2g
ANP-5001	5'-*O*-Levulinyl-2'-deoxyadenosine (*N*-Bz)-3'-CEP, *M.W. 653.67*	$50.00	$80.00	$140.00	$250.00
ANP-5002	5'-*O*-Levulinyl-2'-deoxycytidine (*N*-Bz)-3'-CEP, *M.W. 629.64*	$50.00	$80.00	$140.00	$250.00
ANP-5003	5'-*O*-Levulinyl-2'-deoxyguanosine (*N*-*i*Bu)-3'-CEP, *M.W. 635.65*	$50.00	$80.00	$140.00	$250.00
ANP-5004	5'-*O*-Levulinyl-Thymidine-3'-CEP, *M.W. 540.55*	$50.00	$80.00	$140.00	$250.00

Levulinyl Deprotection Solution

Catalog#	Pricing
CLP-7171	$44.00 / 5 ml
	$72.00 / 10 ml

5'-O-Levulinyl DNA Phosphoramidites with Standard Base Protection

5'-O-Levulinyl DNA phosphoramidites can be used when oligonucleotide has acid labile modifications and TCA or DCA formulations cannot be used. ChemGenes offers levulinyl deprotection solution (Catalog # CLP7171)

Please Indicate Synthesizer when Ordering

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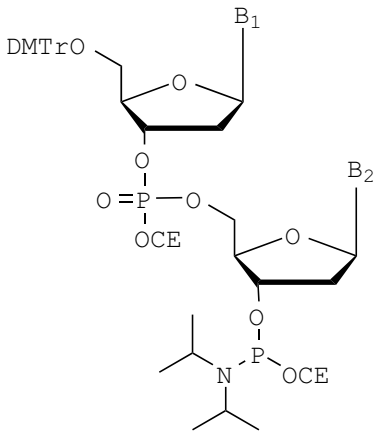

DNA Dimer Phosphoramidites

Catalog#	Pricing
Pricing applies to all dimers listed below	$550.00 / 100mg
	$1,230.00 / 250 mg
	$2,200.00 / 500 mg
	$3,750.00 / 1g

10 gram minimum order, call for pricing.

B_1	B_1 Protection	B_2	B_2 Protection	Catalog #	M.W.	Chemical Formula
A	*N*-Bz	A	*N*-Bz	ANP-2501-CE	1328.31	$C_{67}H_{77}N_{13}O_{13}P_2$
A	*N*-Bz	C	*N*-Bz	ANP-2502-CE	1304.28	$C_{66}H_{71}N_{11}O_{14}P_2$
A	*N*-Bz	G	*N*-*i*Bu	ANP-2503-CE	1310.29	$C_{67}H_{73}N_{13}O_{14}P_2$
A	*N*-Bz	T	N/A	ANP-2504-CE	1215.19	$C_{66}H_{68}N_{10}O_{14}P_2$
C	*N*-Bz	A	*N*-Bz	ANP-2505-CE	1304.28	$C_{66}H_{71}N_{11}O_{14}P_2$
C	*N*-Bz	C	*N*-Bz	ANP-2506-CE	1280.26	$C_{65}H_{71}N_9O_{15}P_2$
C	*N*-Bz	G	*N*-*i*Bu	ANP-2507-CE	1286.27	$C_{63}H_{73}N_{11}O_{15}P_2$
C	*N*-Bz	T	N/A	ANP-2508-CE	1191.16	$C_{59}H_{68}N_8O_{15}P_2$
G	*N*-*i*Bu	A	*N*-Bz	ANP-2509-CE	1310.29	$C_{64}H_{73}N_{13}O_{14}P_2$
G	*N*-*i*Bu	C	*N*-Bz	ANP-2510-CE	1286.27	$C_{63}H_{73}N_{11}O_{15}P_2$
G	*N*-*i*Bu	G	*N*-*i*Bu	ANP-2511-CE	1292.27	$C_{61}H_{75}N_{13}O_{15}P_2$
G	*N*-*i*Bu	T	N/A	ANP-2512-CE	1197.17	$C_{57}H_{70}N_{10}O_{15}P_2$
T	N/A	A	*N*-Bz	ANP-2513-CE	1215.19	$C_{66}H_{68}N_{10}O_{14}P_2$
T	N/A	C	*N*-Bz	ANP-2514-CE	1191.16	$C_{59}H_{68}N_8O_{15}P_2$
T	N/A	G	*N*-*i*Bu	ANP-2515-CE	1197.17	$C_{57}H_{70}N_{10}O_{15}P_2$
T	N/A	T	N/A	ANP-2516-CE	1102.07	$C_{53}H_{65}N_7O_{15}P_2$

DNA Dimer Phosphoramidites

Main advantage of using dimer phosphoramidites is the absence of n-1 and n+1 impurities in the crude oligonucleotide mixtures.

Please Indicate Synthesizer when Ordering

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AB30	AB39	EX	MR	PX	AK

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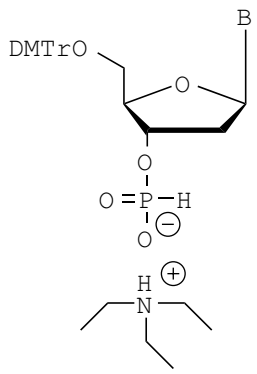
Phosphoramidites and Supports for Natural DNA Synthesis



DNA *H*-Phosphonate Monomers

B	Protection	Catalog#	CAS No:
A	*N*-Bz	ANP-3410	118352-75-3
C	*N*-Bz	ANP-3411	118352-74-2
G	*N*-*i*Bu	ANP-3412	118352-76-4
T	N/A	ANP-3413	3868-27-7
C	*N*-Ac	ANP-3414	

Catalog#	Product name	250mg	500mg
ANP-3410	2'-Deoxyadenosine (*N*-Bz)-3'-*H*-phosphonate TEA Salt, *M.W. 822.87*	$35.00	$65.00
ANP-3411	2'-Deoxycytidine (*N*-Bz)-3'-*H*-phosphonate TEA Salt, *M.W. 798.84*	$35.00	$65.00
ANP-3412	2'-Deoxyguanosine (*N*-*i*Bu)-3'-*H*-phosphonate TEA Salt, *M.W. 804.86*	$35.00	$65.00
ANP-3413	Thymidine-3'-*H*-phosphonate TEA Salt, *M.W. 709.76*	$35.00	$65.00
ANP-3414	2'-Deoxycytidine (*N*-Ac)-3'-*H*-phosphonate TEA Salt, *M.W. 736.79*	$35.00	$65.00

Ancillary reagents for H-phosphonate chemsitry are listed in page # 19.

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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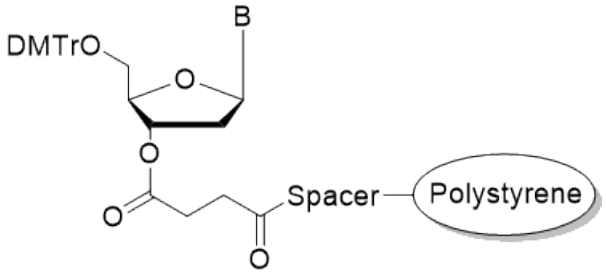
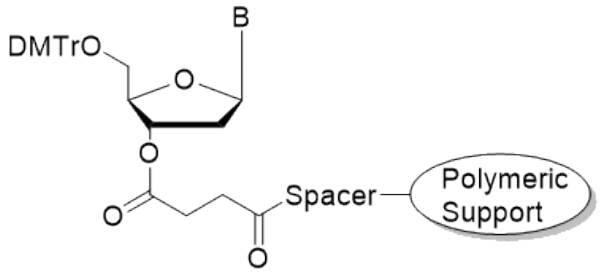


Succinyl Polystyrene Supports for DNA Synthesis

B	Protection	Catalog #
A	*N*-Bz	N-7511
C	*N*-Bz	N-7512
G	*N*-*i*Bu	N-7513
T	N/A	N-7514
C	*N*-Ac	N-7515

Catalog #	Product Name	Pore Size	Particle Size	Bulk Polystyrene Loading 30-40 µm/g 100 mg	1 g	5 g	pack of 4 cols. 40 nmole	0.2 µmole	1.0 µmole	pack of 10 cols. 40 nmole	0.2 µmole	1.0 µmole
N-7511-03	2'-Deoxy-adenosine (*N*-Bz)-3'-succinyl Polystyrene support	300Å	15-20 µm 60-70 µm	$35	$245	$753	$50	$65	$80	$100	$130	$160
N-7512-03	2'-Deoxy-cytidine (*N*-Bz)-3'-succinyl Polystyrene support	300Å	15-20 µm 60-70 µm	$35	$245	$753	$50	$65	$80	$100	$130	$160
N-7513-03	2'-Deoxy-guanosine (*N*-*i*Bu)-3'-succinyl Polystyrene support	300Å	15-20 µm 60-70 µm	$35	$245	$753	$50	$65	$80	$100	$130	$160
N-7514-03	Thymidine-3'-succinyl Polystyrene support	300Å	15-20 µm 60-70 µm	$35	$245	$753	$50	$65	$80	$100	$130	$160
N-7515-03	2'-Deoxy-cytidine (*N*-Ac)-3'-succinyl Polystyrene support	300Å	15-20 µm 60-70 µm	$35	$245	$753	$50	$65	$80	$100	$130	$160

ChemGenes has developed unique Polystyrene Supportsand columns that have special appeal due to rigidity, non-swelling and inertness towards moisture and water.



High Loading Succinyl Polymeric Supports for DNA Synthesis (loading greater than 150 µmol/g)

B	Protection	Catalog #
A	*N*-Bz	PMS-7511
C	*N*-Bz	PMS-7512
G	*N*-*i*Bu	PMS-7513
T	N/A	PMS-7514
C	*N*-Ac	PMS-7515

Catalog #	Product Name	Pore Size	Particle Size	1 g	2 g	5 g	10 g
PMS-7511-07	2'-Deoxy-adenosine (*N*-Bz)-3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$384	$768	$1,230
PMS-7512-07	2'-Deoxy-cytidine (*N*-Bz)-3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$384	$768	$1,230
PMS-7513-07	2'-Deoxy-guanosine (*N*-*i*Bu)-3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$384	$768	$1,230
PMS-7514-07	Thymidine-3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$384	$768	$1,230
PMS-7515-07	2'-Deoxy-cytidine (*N*-Ac)-3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$384	$768	$1,230

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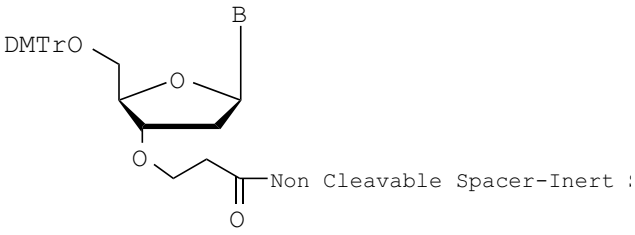
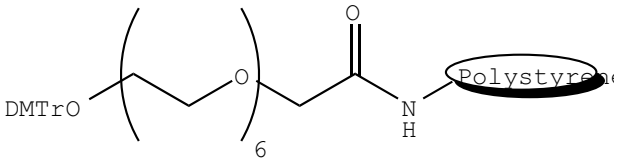


Non Cleavable Supports and Columns for DNA/RNA Synthesis

B	Protection	Catalog #
A	*N*-Bz	N-7521
C	*N*-Bz	N-7522
G	*N*-*i*Bu	N-7523
T	N/A	N-7524

Catalog #	Product Name	Pore Size	Particle Size	Bulk loading 30-40 µm/g 100 mg	Bulk loading 30-40 µm/g 1 g	pack of 4 cols. 40 nmole	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 40 nmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-7521-15	2'-Deoxyadenosine (*N*-Bz)-	300Å	15-20 µm								
N-7521-60	3'-non-cleavable long chain spacer	300Å	60-70 µm	$55	$280	$110	$130	$150	$220	$260	$300
N-7521-10-60		1000Å	60-70 µm								
N-7522-15	2'-Deoxycytidine (*N*-Bz)-	300Å	15-20 µm								
N-7522-60	3'-non-cleavable long chain spacer	300Å	60-70 µm	$55	$280	$110	$130	$150	$220	$260	$300
N-7522-10-60		1000Å	60-70 µm								
N-7523-15	2'-Deoxyguanosine (*N*-*i*Bu)-	300Å	15-20 µm								
N-7523-60	3'-non-cleavable long chain spacer	300Å	60-70 µm	$55	$280	$110	$130	$150	$220	$260	$300
N-7523-10-60		1000Å	60-70 µm								
N-7522-15	2'-Deoxycytidine (*N*-Bz)-	300Å	15-20 µm								
N-7522-60	3'-non-cleavable long chain spacer	300Å	60-70 µm	$55	$280	$110	$130	$150	$220	$260	$300
N-7522-10-60		1000Å	60-70 µm								



Catalog #	Product Name	Pore Size	Particle Size	Bulk loading 30-40 µm/g 100 mg	Bulk loading 30-40 µm/g 1 g	pack of 4 cols. 40 nmole	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 40 nmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-4545-03	Non-cleavable spacer	300Å	15-20 µm	$55	$280	$110	$130	$150	$220	$260	$300
N-4545-10	polystyrene	1000Å	50-70 µm								

Non Cleavable Solid Supports and Columns

(For Affinity Chromatography & One bead one Compound combinatorial libraries)

ChemGenes has developed a non-cleavable support, which is inert in nature and is amenable to oligonucleotide synthesis. Using our irreversible support leads to oligo synthesis of coupling efficiencies of 98-99% per step for a chain length of 20-40 mers.

Our Inert beads are uniform particles. The support bound oligonucleotides, which are irreversibly bound, have extensive applications in molecular biology. Some of the common applications are as follows:

1. Affinity based chromatography for oligonucleotides, proteins, and other macromolecules.
2. Design and construction of one bead one compound libraries by split sythesis methods.
3. PCR amplification is possible with the support attached to oligonucleotides. See photo to the right for bead based aptamer library screening, sequencing analysis of PCR products.
4. Molecular Biology R&D experiments on bead bound oligonucleotides have performed beyond expectations.

This method has been used by Gorenstein & Coworkers (Yang, X.; Bassett, S. E.; Li, X.; Luxon, B. A.; Herzog, N. K.; Shope, R. E.; Aronson, J.; Prow, T. W.; Leary, J. F.; Kirby, R.; Ellington, A. D.; Gorenstein, D. G. Nucle. Acids. Res., 2002, 30, e-132) for the selection of combinatorial oligonucleotides aptamer and PCR amplification followed by sequencing.

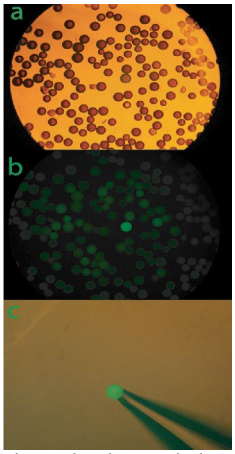


photo taken by permission from Nucleic Acid Research.

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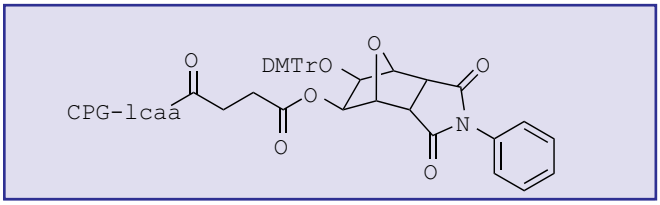
Oligo Synthesis Products

Supports for DNA & RNA Synthesis

Unylinker Universal Supports for Synthesis of Oligonucleotides

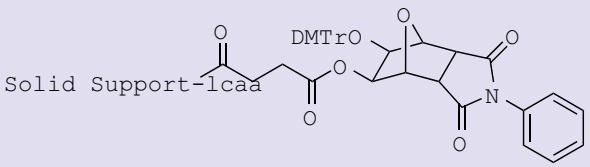


Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 250 mg	Bulk CPG 1 g	pack of 4 cols. 40 nmole	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	each 10 µmole	each 15 µmole	pack of 10 cols. 40 nmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-4000-05	UnyLinker lcaa CPG	500Å	$8	$18	$65	$26	$32	$40	$85	$120	$52	$64	$80
N-4000-10		1000Å	$8	$18	$65	$26	$32	$40	$85	$120	$52	$64	$80
N-4000-20		2000Å	$10	$22	$75	$30	$36	$48	$98	$142	$62	$74	$96
N-4000-03	UnyLinker Polystyrene	300Å	$14	$27	$80	$38	$44	$56	$109	$149	$70	$82	$104

High Loading Unylinker Universa Succinyl Polymeric Supports for RNA Synthesis (Loading 150-200 µmol/g)

Catalog #	Product Name	Pore Size	Particle Size	1 g	2 g	5 g	10 g
PMS-4000-07	UnyLinker Polymeric support	700-800Å	37-74 µm	$85	$150	$640	$960

Unylinker Microarray Slide (Discontinued)



Catalog#	Pricing
N-4501	$16.00 / 1 unit
	$12.00 / 50 unit

UNYLINKER™ Universal Support for synthesis of Oliogodeoxynucleotides

(Fully compatible with standard phosphoramidite reagents and synthesis conditions) Average coupling efficiency of >99% per step.

Quantitative cleavage from support with standard ammonia or methylamine deprotection conditions.

No need to synthesize four deoxy nucleosides & avoids need to synthesize difficult to procure 2' or 3'-modified nucleoside based on support

Improvement in the quality of oligonucleotides synthesized, since the quality of succinates can vary from batch to batch and supploer to suppliers.

Cost reduction due to single support for the Oligo synthesis instead of several supports.

Releases work load of QC and material management and testing of many products verses a single support.

UNYLINKER universal support does not contribute any atom to API and hence need not be classified as a starting material.

Therefore offer major advantage when dealing with QA and FDA.

High purity Phosphorothioate synthesis is performed as usual.

2'-O-Alkyl oligonucleotides are synthesized in high purity.

LNA oligonucleotides are synthesized in high high purity.

Fully compatible with Biotin, Fluorescein and other labeled oligonucleotides.

*UNYLINKER™ is a trademark of Isis Pharmaceuticals, Inc. The above products are covered under Isis patent #7,202,264. and ChemGenes Corp. holds world wide marketing rights.

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Solid Supports & Columns

Controlled Pore Glass (CPG) is rigid and non-swelling with deep pores in which oligonucleotide synthesis takes place. CPG's with 500 Å (50 nm) pores are mechanically robust and are routinely used in the synthesis of shorter oligonucleotides. However, synthetic yields fall dramatically when oligonucleotides more than 40 bases in length are prepared on CPG's with 500 Å. This is because growing oligonucleotides blocks the pores and reduces diffusion of the reagents through the matrix. Although large pore CPG's are more fragile, 1000 Å CPG's has proved to satisfactory for the synthesis of oligonucleotides up to 100 bases in length, and 2000 Å supports can be used for the longer length oligonucleotides. CPG's have a C-17 spacer (lcaa) between the succinate and Silyl group on the CPG supports. The long chain spacer arm is ≈ 18 Å long. The longer arm facilitates the synthesis of longer oligomers, where steric effects and surface repulsions are problems. The drop in coupling yield during the attachment of 1st and 2nd phosphoramidite is minimal and thus the formation of N-1 chain is negligible.

We are proud that the ChemGenes CPG Supports have out performed equivalent products available on the market. All the functional groups available on the derivatized CPGs have been carefully blocked to minimize possibilities of side reactions. CPGs are available in three pore diameters and each have been functionalized in three different loading levels.

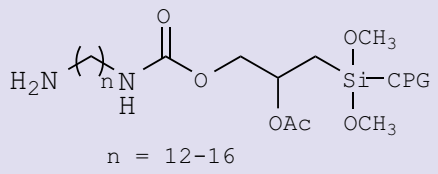
Amino CPG Long Chain Alkyl (lcaa) Support

The particle sizes for CPG's available at ChemGenes are: 80-200 mesh, 80-120 mesh, and 120-200 mesh. However the most common is 120-200 mesh and is used to derivatize our listed CPG's. Please enquire about the other two mesh sizes, which are available on a custom basis.

Selection Chart of lcaa CPG Supports for optimum oligo chain length

Trityl Value Codes	Synthesis Scales	Loading (µm/g)	Recommended Pore Size	Oligo Chain Length (mer)
VL: Very Low	0.05 µm	5-6	2000Å	150-175
L: Low	0.2 µm	15-16	1000Å or 2000Å	61-100
M: Medium	0.2 µm	35	500Å and 1000Å	30 and 60
H: High	1.0 µm	90	500Å	< 30

Amino lcaa CPG Supports



Catalog#	Pricing	Catalog#	Pricing
N-5100-05	$32.00 / 1 g	N-5100-10	$32.00 / 1 g
	$55.00 / 5 g		$55.00 / 5 g
	$85.00 / 10 g		$85.00 / 10 g
Pore Size: 500Å		Pore Size: 1000Å	

ChemGenes Corp. uses and sells native amino lcaa CPG with linker length 12 -16;

Empty Columns for Oligonucleotide Synthesizers

Catalog#	Product Name	Appropriate Scales	Pricing
E-1007-AB30	ABI 392/394 Style Empty Column, Aluminum Caps (2), & Frits (2)	40nmol - 1.0µmol	$5.00 each
E-1007-15-AB30	ABI 392/394 Style Empty Column, Aluminum Caps (2), & Frits (2)	~ 15 µmol	$50.00 each
E-1007-02-EX	Expedite Style Empty Synthesis Column, Aluminum Caps (2), & Frits (2)	40nmol - 0.2µmol	$5.00 each
E-1007-10-EX	Expedite Style Empty Synthesis Column, Aluminum Caps (2), & Frits (2)	1.0 µmol	$5.00 each
E-1007-100-EX	Expedite Style Empty Synthesis Column, Aluminum Caps (2), & Frits (2)	10 µmol	$40.00 each
E-1007-AB39	ABI3900 & MerMade Style Empty Column & Frits (upper & lower)	40nmol - 1.0µmol	$5.00 each

Replacement Filters

Catalog #	Quantity	Prices
EPC-1008	100	$50.00

* can be used for either ABI 392/394 or Expedite Oligonucleotide Synthesizers

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Email: info@chemgenes.com

Ancillary Reagents for Automated DNA Synthesizers
(For *H*-Phosphonate Chemistry)

Catalog #	Product Name	Qty.	Price
RN-6464	Dipentafluorophenyl Carbonate*	2 g	$85.00
	(Highly efficient coupling reagent for *H*-phosphonate	5 g	$190.00
	chemistry and superior to Adamantane carbonyl chloride)		
RN-6664	Activator for monomers and Capping Reagent	2 g	$45.00
	(Adamantane Carbonyl Chloride)		
RN-4523-P	Acetonitrile/Pyridine(50:50), Anhydrous	100 ml	$28.00
	(Diluent for Monomers)		
RN-1356-P2	Acetonitrile/Pyridine(95:5), Anhydrous	100 ml	$28.00
	(Diluent for Activator)		
RN-7684-AP	Acetonitrile/Pyridine	900 ml	$77.00
	(Wash Solvent)		
RN-6645-IP	Capping Reagent for ABI Synthesizers	45 ml	$37.00
	(Isopropyl Phosphite/Acetonitrile/Pyridine)		
RN-1210-PHT	**Oxidation Solution 1	45 ml	$18.00
	(Iodine in Pyridine/H_2O/THF)		
RN-1220-THT	**Oxidation Solution 2	45 ml	$18.00
	(THF/H_2O/TEA)		

* Efimov, V. A.; Kalinkina, A. L.; Chakhmakhcheva, O. G. *Nucl. Acids. Res.*, **1993**, *2*, 5337-5344.

*** Note: Both oxidation solutions 1 & 2 are needed for H-phosphonate oxidation.*

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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ABI Oligonucleotide Synthesizers

Catalog #	Product Name	Qty.	Price
RN-1447-S-AB30	Acetonitrile Anhydrous	45 ml	$9.00
RN-1447-M-AB30	(Phosphoramidite Diluent & Washings)	100 ml	$14.00
RN-1447-L-AB30		450 ml	$20.00
RN-1448-M-AB30	Acetonitrile Wash Grade	1 L	$32.00
RN-1448-L-AB30		4 L	$90.00
RN-1551-SS-AB30	Activation Reagent	45 ml	$35.00
RN-1551-S-AB30	(0.45 M 5-Ethylthio-1*H*-Tetrazole/Acetonitrile)	200 ml	$87.00
RN-1551-M-AB30		450 ml	$140.00
RN-1551-L-AB30		2 L	$410.00
RN-1466-SS-AB30	Activation Reagent	45 ml	$35.00
RN-1466-S-AB30	(0.25 M 5-Ethylthio-1*H*-Tetrazole/Acetonitrile)	200 ml	$87.00
RN-1466-M-AB30		450 ml	$140.00
RN-1466-L-AB30		2 L	$410.00
RN-1467-SS-AB30	Activation Reagent	45 ml	$35.00
RN-1467-S-AB30	(0.25 M 4,5-Dicyanoimidazole/Acetonitrile)	200 ml	$87.00
RN-1467-M-AB30		450 ml	$140.00
RN-1467-L-AB30		2 L	$410.00
RN-1452	Activation Reagent (BMT Solution) (0.3M Benzylthio-1*H*-Tetrazole/Acetonitrile)	45 ml	$35.00
RN-1458-SS-AB30	CAP A	45 ml	$15.00
RN-1458-S-AB30	(Acetic Anhydride/Pyridine/THF)	200 ml	$25.00
RN-1458-M-AB30		450 ml	$54.00
RN-1458-L-AB30		2 L	$230.00
RN-1481-SS-AB30	CAP B	45 ml	$15.00
RN-1481-S-AB30	(10% *N*-Methylimidazole/THF, *v*/*v*)	200 ml	$25.00
RN-1481-M-AB30		450 ml	$54.00
RN-1481-L-AB30		2 L	$260.00
RN-7776-SS-AB30	CAP B	45 ml	$15.00
RN-7776-S-AB30	(16% *N*-Methylimidazole/THF, *v*/*v*)	200 ml	$25.00
RN-7776-M-AB30		450 ml	$54.54
RN-7776-L-AB30		2 L	$260.00
RN-1468-M-AB30	DMTr Removal Reagent	450 ml	$47.00
RN-1468-L-AB30	(3% DCA (Dichloro acetic acid)/Dichloromethane, *v*/*v*)	2 L	$220.00
RN-1462-M-AB30	DMTr Removal Reagent	450 ml	$27.00
RN-1462-L-AB30	(3% TCA (Trichloro acetic acid)/Dichloromethane, *v*/*v*)	2 L	$108.00
RN-1455-S-AB30	Oxidation Solution	200 ml	$20.00
RN-1455-M-AB30	(0.02 M Iodine/Pyridine/H_2O/THF)	450 ml	$40.00
RN-1455-L-AB30		2 L	$168.00
RN-1456-S-AB30	Oxidation Solution	200 ml	$20.00
RN-1456-M-AB30	(0.1 M Iodine/Pyridine/H_2O/THF)	450 ml	$40.00
RN-1456-L-AB30		2 L	$168.00
RN-1465-AB30	*Thiophenol/Triethylamine/Dioxane	10 ml	$38.00
RN-1535-L-AB30	**Sulfurizing Reagent (Beaucage Reagent) for Introduction of Phosphorothioate (S-oligonucleotide)	2 g	$76.00
RN-1688	*** DDTT Solution	100 ml	$65.00
RN-1688	[0.05 M] (Sulfurizing Reagent)	200 ml	$125.00
RN-1688		450 ml	$225.00
RN-1689	*** DDTT Solution	100 ml	$88.00
RN-1689	[0.10 M] (Sulfurizing Reagent)	200 ml	$160.00
RN-1689		450 ml	$310.00
BL-1536-S-AB30	Silanized Bottles for Beaucage Reagent	100 ml	$8.00
BL-1536-M-AB30		250 ml	$8.00
BL-1536-L-AB30		500 ml	$8.00
RN-1450-AB30	AMA Reagent	25 ml	$25.00

* Used in selective removal of *P*-methoxy groups in oligos.

** For the separate listing of Beaucage Reagent see page 175

*** DDTT Solution (Sulfurizing Reagents) see page 21,24 & 25.

*** For Bulk pricing and details of Solid DDTT (Sulfurizing Reagents) see page 175.

ABI 3900 Oligonucleotide Synthesizers

Catalog #	Product Name	Qty.	Price
RN-1447-L-AB39	***Acetonitrile Anhydrous (Phosphoramidite Diluent & Washings)	450 ml	$20.00
RN-1448-M-AB39	Acetonitrile Wash Grade	1 L	$32.00
RN-1448-L-AB39		4 L	$90.00
RN-1551-M-AB39	Activation Reagent (ETT)	450 ml	$140.00
RN-1551-L-AB39	(0.45 M 5-Ethylthio-1*H*-Tetrazole/Acetonitrile)	2 L	$410.00
RN-1466-M-AB39	Activation Reagent	450 ml	$140.00
RN-1466-L-AB39	(0.25 M 5-Ethylthio Tetrazole/Acetonitrile)	2 L	$410.00
RN-1467-M-AB39	Activation Reagent (DCI)	450 ml	$140.00
RN-1467-L-AB39	(0.25 M 4,5-Dicyanoimidazole/Acetonitrile)	2 L	$410.00
RN-1452	Activation Reagent (BMT) (0.3M 5-Benzylthio-1*H*-Tetrazole/Acetonitrile)	45 ml	$35.00
RN-1458-M-AB39	CAP A	450 ml	$54.00
RN-1458-L-AB39	(Acetic Anhydride/Pyridine/THF)	2 L	$230.00
RN-1481-M-AB39	CAP B	450 ml	$54.00
RN-1481-L-AB39	(10% *N*-Methylimidazole/THF, *v/v*)	2 L	$260.00
RN-7776-M-AB39	CAP B	450 ml	$54.00
RN-7776-L-AB39	(16% *N*-Methylimidazole/THF, *v/v*)	2 L	$260.00
RN-1468-M-AB39	DMTr Removal Reagent	450 ml	$47.00
RN-1468-L-AB39	(3% DCA (Dichloracetic acid)/Dichloromethane, *v/v*)	2 L	$220.00
RN-1462-M-AB39	DMTr Removal Reagent	450 ml	$27.00
RN-1462-L-AB39	(3% TCA (Trichloracetic acid)/Dichloromethane, *v/v*)	2 L	$108.00
RN-1455-M-AB39	Oxidation Solution	450 ml	$40.00
RN-1455-L-AB39	(0.02 M Iodine/Pyridine/H_2O/THF)	2 L	$168.00
RN-1456-M-AB39	Oxidation Solution	450 ml	$60.00
RN-1456-L-AB39	(0.1 M Iodine/Pyridine/H_2O/THF)	2 L	$168.00
RN-1465-AB39	*Thiophenol/Triethylamine/Dioxane	10 ml	$38.00
RN-1535-L-AB39	**Sulfurizing Reagent (Beaucage Reagent) for Introduction of Phosphorothioate (S-oligonucleotide)	2 g	$76.00
RN-1688	**** DDTT Solution	100 ml	$65.00
RN-1688	[0.05 M] (Sulfurizing Reagent)	200 ml	$125.00
RN-1688		450 ml	$225.00
RN-1689	**** DDTT Solution	100 ml	$88.00
RN-1689	[0.10 M] (Sulfurizing Reagent)	200 ml	$160.00
RN-1689		450 ml	$310.00
BL-1536-S-AB39	Silanized Bottles for Beaucage Reagent	100 ml	$8.00
BL-1536-M-AB39		250 ml	$8.00
BL-1536-L-AB39		500 ml	$8.00
RN-1450-AB39	AMA Reagent	25 ml	$25.00

* Used in selective removal of p-methoxy groups in oligos.

** For the separate listing of Beaucage Reagent see page 175.

*** Moisture Content: less than 50 ppm. Bottles are prepacked with drying traps an extra moisture free environment.

**** For Bulk pricing and details of Solid DDTT (Sulfurizing Reagents) see page 175.

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Akta Oligonucleotide Synthesizers

Catalog #	Product Name	Qty.	Price
RN-1447-S-OP	Acetonitrile Anhydrous	45 ml	$9.00
RN-1447-M-OP	(Phosphoramidite Diluent & Washings)	100 ml	$14.00
RN-1447-L-OP		450 ml	$20.00
RN-1448-M-OP	Acetonitrile Wash Grade	1 L	$32.00
RN-1448-L-OP		4 L	$90.00
RN-2202-M-OP	Cap A (20% *N*-Methyl imidazole in Acetonitrile, *v*/*v*)	4 L	$304.00
RN-2217-M-OP	Cap B1 (40% Acetic Anhydride in Acetonitrile, *v*/*v*)	4 L	$208.00
RN-2225-M-OP	Cap B2 (60% Symmetrical Collidine in Acetonitrile, *v*/*v*)	4 L	$416.00
RN-2232-M-OP	*Activator (BMT) (5-Benzyl thio-1*H*-tetrazole; 0.2 M in acetonitrile)	4 L	$512.00
RN-2238-M-OP	Oxidizer (50 mM Iodine in 10% Water/Pyridine)	4 L	$272.00
RN-2242-M-OP	Deblock (3% DCA in Toluene, *v*/*v*)	4 L	$272.00

* For the separate listing of BMT Reagent see page 173.

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

Expedite Oligonucleotide Synthesizers

Catalog #	Product Name	8905 Qty.	8905 Price	8909 Qty.	8909 Price
RN-1447-S-EX	Acetonitrile Anhydrous	45 ml	$9.00	45 ml	$9.00
RN-1447-M-EX	(Phosphoramidite Diluent & Washings)	100 ml	$14.00	100 ml	$14.00
RN-1447-L-EX		450 ml	$20.00	450 ml	$20.00
RN-1448-M-EX	Acetonitrile Wash Grade	1 L	$32.00	1 L	$32.00
RN-1448-L-EX		4 L	$90.00	4 L	$90.00
RN-1551-SS-EX	Activation Reagent	60 ml	$40.00	-	-
RN-1551-S-EX	(0.45 M 5-Ethylthio-1*H*-Tetrazole/Acetonitrile)	200 ml	$87.00	200 ml	$87.00
RN-1551-M-EX		450 ml	$140.00	450 ml	$140.00
RN-1551-L-EX		2 L	$410.00	2 L	$410.00
RN-1466-SS-EX	Activation Reagent	60 ml	$40.00	-	-
RN-1466-S-EX	(0.25 M 5-Ethylthio-1*H*-Tetrazole/Acetonitrile)	200 ml	$87.00	200 ml	$87.00
RN-1466-M-EX		450 ml	$140.00	450 ml	$140.00
RN-1466-L-EX		2 L	$410.00	2 L	$410.00
RN-1467-SS-EX	Activation Reagent (DCI)	60 ml	$40.00	-	-
RN-1467-S-EX	(0.25 M 4,5-Dicyanoimidazole/Acetonitrile)	200 ml	$87.00	200 ml	$87.00
RN-1467-M-EX		450 ml	$140.00	450 ml	$140.00
RN-1467-L-EX		2 L	$410.00	2 L	$410.00
RN-1452	Activation Reagent (BMT) (0.3M 5-Benzylthio-1*H*-Tetrazole/Acetonitrile)	45 ml	$35.00	-	-
RN-1458-SS-EX	CAP A	60 ml	$17.00	-	-
RN-1458-S-EX	(Acetic Anhydride/Pyridine/THF)	90 ml	$19.00	200 ml	$25.00
RN-1458-M-EX		450 ml	$54.00	450 ml	$54.00
RN-1458-L-EX		2 L	$230.00	2 L	$230.00
RN-1481-SS-EX	CAP B	60 ml	$17.00	-	-
RN-1481-S-EX	(10% *N*-Methylimidazole/THF, *v*/*v*)	90 ml	$19.00	200 ml	$25.00
RN-1481-M-EX		450 ml	$54.00	450 ml	$54.00
RN-1481-L-EX		2 L	$260.00	2 L	$230.00
RN-7776-SS-EX	CAP B	60 ml	$17.00	-	-
RN-7776-S-EX	(16% *N*-Methylimidazole/THF, *v*/*v*)	90 ml	$19.00	200 ml	$25.00
RN-7776-M-EX		450 ml	$54.00	450 ml	$54.00
RN-7776-L-EX		2 L	$260.00	2 L	$230.00
RN-1468-M-EX	DMTr Removal Reagent	180 ml	$25.00	180 ml	$25.00
RN-1468-L-EX	(2.5% Dichloracetic Acid/Dichloromethane, *v*/*v*)	900 ml	$85.00	900 ml	$85.00
RN-1462-M-EX	DMTr Removal Reagent	180 ml	$15.00	180 ml	$15.00
RN-1462-L-EX	(3% Trichloracetic Acid/Dichloromethane, *v*/*v*)	900 ml	$85.00	900 ml	$85.00
RN-1455-S-EX	Oxidation Solution	60 ml	$10.00	60 ml	$10.00
RN-1455-M-EX	(0.02 M Iodine/Pyridine/H_2O/THF)	200 ml	$20.00	200 ml	$20.00
RN-1455-L-EX		450 ml	$40.00	450 ml	$40.00
RN-1456-S-EX	Oxidation Solution	200 ml	$20.00	-	-
RN-1456-M-EX	(0.1 M Iodine/Pyridine/H_2O/THF)	450 ml	$40.00	-	-
RN-1456-L-EX		2 L	$168.00	-	-
RN-1465-EX	*Thiophenol/Triethylamine/Dioxane	10 ml	$38.00	10 ml	$38.00
RN-1535-S-EX	**Sulfurizing Reagent (Beaucage Reagent) for	100 mg	$15.00	100 mg	$15.00
RN-1535-M-EX	Introduction of Phosphorothioate (S-oligonucleotide)	1 g	$42.00	1 g	$42.00
RN-1535-L-EX		2 g	$76.00	2 g	$76.00
RN-1688	*** DDTT Solution	100 ml	$65.00	-	-
RN-1688	[0.05 M] (Sulfurizing Reagent)	200 ml	$125.00	-	-
RN-1688		450 ml	$225.00	-	-
RN-1689	*** DDTT Solution	100 ml	$88.00	-	-
RN-1689	[0.10 M] (Sulfurizing Reagent)	200 ml	$160.00	-	-
RN-1689		450 ml	$310.00	-	-
BL-1536-S-EX	Silanized Bottles for Beaucage Reagent	100 ml	$8.00	100 ml	$8.00
BL-1536-M-EX		250 ml	$8.00	250 ml	$8.00
BL-1536-L-EX		500 ml	$8.00	500 ml	$8.00
RN-1450-EX	AMA Reagent	25 ml	$25.00	25 ml	$25.00

* Used in selective removal of p-methoxy groups in oligos.

** For the separate listing of Beaucage Reagent see page 175.

*** DDTT Solution (Sulfurizing Reagents) see page 21,24 & 25.

*** For Bulk pricing and details of Solid DDTT (Sulfurizing Reagents) see page 175.

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MerMade Oligonucleotide Synthesizers

Catalog #	Product Name	Qty.	Price
RN-1447-S-MR	Acetonitrile Anhydrous	45 ml	$9.00
RN-1447-M-MR	(Phosphoramidite Diluent & Washings)	100 ml	$14.00
RN-1447-L-MR		450 ml	$20.00
RN-1448-M-MR	Acetonitrile Wash Grade	1 L	$32.00
RN-1448-L-MR		4 L	$90.00
RN-1551-M-MR	Activation Reagent	450 ml	$140.00
RN-1551-L-MR	(0.45 M 5-Ethylthio-1*H*-Tetrazole/Acetonitrile)	900 ml	$218.00
RN-1466-M-MR	Activation Reagent	450 ml	$140.00
RN-1466-L-MR	(0.25 M 5-Ethylthio-1*H*-Tetrazole/Acetonitrile)	900 ml	$218.00
RN-1467-M-MR	Activation Reagent	450 ml	$140.00
RN-1467-L-MR	(0.25 M 4,5-Dicyanoimidazole/Acetonitrile)	900 ml	$218.00
RN-1452	Activation Reagent (BMT)	45 ml	$35.00
	(0.3M 5-Benzylthio-1*H*-Tetrazole/Acetonitrile)		
RN-1458-M-MR	CAP A	450 ml	$54.00
RN-1458-L-MR	(Acetic Anhydride/THF/2,6-Lutidine)	900 ml	$109.00
RN-1481-M-MR	CAP B	450 ml	$54.00
RN-1481-L-MR	(10% *N*-Methylimidazole/THF, *v*/*v*)	900 ml	$109.00
RN-7776-M-MR	CAP B	450 ml	$54.00
RN-7776-L-MR	(16% *N*-Methylimidazole/THF, *v*/*v*)	900 ml	$109.00
RN-1468-M-MR	DMTrRemoval Reagent	450 ml	$47.00
RN-1468-L-MR	(2.5% DCA-Dichloracetic Acid/Dichloromethane, *v*/*v*)	900 ml	$85.00
RN-1462-M-MR	DMTr Removal Reagent	450 ml	$27.00
RN-1462-L-MR	(3% TCA-Trichloracetic Acid/Dichloromethane, *v*/*v*)	900 ml	$85.00
RN-1455-M-MR	Oxidation Solution	450 ml	$40.00
RN-1455-L-MR	(0.02 M Iodine/Pyridine/H_2O/THF)	900 ml	$135.00
RN-1456-M-MR	Oxidation Solution	450 ml	$50.00
RN-1456-L-MR	(0.1 M Iodine/Pyridine/H_2O/THF)	900 ml	$135.00
RN-1465-MR	*Thiophenol/Triethylamine/Dioxane	10 ml	$38.00
RN-1535-S-MR	**Sulfurizing Reagent (Beaucage Reagent) for	100 mg	$15.00
RN-1535-M-MR	Introduction of Phosphorothioate (S-oligonucleotide)	1 g	$42.00
RN-1535-L-MR		2 g	$76.00
RN-1688	**** DDTT Solution	100 ml	$65.00
RN-1688	[0.05 M] (Sulfurizing Reagent)	200 ml	$125.00
RN-1688		450 ml	$225.00
RN-1689	**** DDTT Solution	100 ml	$88.00
RN-1689	[0.10 M] (Sulfurizing Reagent)	200 ml	$160.00
RN-1689		450 ml	$310.00
BL-1536-S-MR	Silanized Bottles for Beaucage Reagent	100 ml	$8.00
BL-1536-M-MR		250 ml	$8.00
BL-1536-L-MR		500 ml	$8.00
RN-1450-MR	AMA Reagent	25 ml	$25.00

* Used in selective removal of P-Methoxy groups in oligos.
** For the separate listing of Beaucage Reagent see page 175.
*** Moisture Content: less than 50 ppm. Bottles are prepacked with drying traps an extra moisture free environment.
**** For Bulk pricing and details of Solid DDTT (Sulfurizing Reagents) see page 175.

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PolyPlex Oligonucleotide Synthesizers

Catalog #	Product Name	Qty.	Price
RN-1447-S-PX	Acetonitrile Anhydrous	45 ml	$9.00
RN-1447-M-PX	(Phosphoramidite Diluent & Washings)	100 ml	$14.00
RN-1447-L-PX		450 ml	$20.00
RN-1448-M-PX	Acetonitrile Wash Grade	1 L	$32.00
RN-1448-L-PX		4 L	$90.00
RN-1551-M-PX	Activation Reagent	200 ml	$87.00
RN-1551-L-PX	(0.45 M 5-Ethylthio-1*H*-Tetrazole/Acetonitrile)		
RN-1466-M-PX	Activation Reagent	200 ml	$87.00
	(0.25 M 5-Ethylthio-1*H*-Tetrazole/Acetonitrile)		
RN-1467-M-PX	Activation Reagent	200 ml	$87.00
	(0.25 M 4,5-Dicyanoimidazole/Acetonitrile)		
RN-1452	Activation Reagent (BMT Solution)	45 ml	$35.00
	(0.3 M 5-Benzylthio-1*H*-Tetrazole/Acetonitrile)		
RN-1458-M-PX	CAP A	200 ml	$25.00
	(Acetic Anhydride/Pyridine/THF)		
RN-1481-M-PX	CAP B	200 ml	$25.00
	(10% *N*-Methylimidazole/THF, *v*/*v*)		
RN-7776-M-PX	CAP B	200 ml	$25.00
	(16% *N*-Methylimidazole/THF, *v*/*v*)		
RN-1468-M-PX	DMTr Removal Reagent	2 L	$220.00
	(3% DCA (Dichloracetic acid)/Dichloromethane, *v*/*v*)		
RN-1462-L-PX	DMTr Removal Reagent	2 L	$108.00
	(3% TCA (Trichloractic acid)/Dichloromethane, *v*/*v*)		
RN-1455-L-PX	Oxidation Solution	200 ml	$20.00
	(0.02 M Iodine/Pyridine/H_2O/THF)		
RN-1456-M-PX	Oxidation Solution	200 ml	$20.00
	(0.1 M Iodine/Pyridine/H_2O/THF)		
RN-1465-PX	*Thiophenol/Triethylamine/Dioxane	10 ml	$38.00
RN-1535-S-PX	**Sulfurizing Reagent (Beaucage Reagent) for	100 mg	$15.00
RN-1535-M-PX	Introduction of Phosphorothioate (S-oligonucleotide)	1 g	$42.00
RN-1535-L-PX		2 g	$76.00
BL-1536-S-PX	Silanized Bottles for Beaucage Reagent	100 ml	$8.00
BL-1536-M-PX		250 ml	$8.00
BL-1536-L-PX		500 ml	$8.00
RN-1688	**** DDTT Solution	100 ml	$65.00
RN-1688	[0.05 M] (Sulfurizing Reagent)	200 ml	$125.00
RN-1688		450 ml	$225.00
RN-1689	**** DDTT Solution	100 ml	$88.00
RN-1689	[0.10 M] (Sulfurizing Reagent)	200 ml	$160.00
RN-1689		450 ml	$310.00
RN-1450-PX	AMA Reagent	25 ml	$25.00

* Used in selective removal of p-methoxy groups in oligos.

** For the separate listing of Beaucage Reagent see page 175.

*** Moisture Content: less than 50 ppm. Bottles are prepacked with drying traps an extra moisture free environment.

**** For Bulk pricing and details of Solid DDTT (Sulfurizing Reagents) see page 175.

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Summary of Modified Deoxy Amidites & Supports

During the last couple of decades, pleathora of novel structurally modified nucleic acid analogs have been introduced[1] to develop probes that has potential application in nucleic acid based therapeutics[2], diagnostics[2], molecular biology[3] & Nanotechnology[4] research and development.
Incorporation of modified purines and pyrimidines has been utilized to optimize DNA-protein interactions and sequence recognition for many proteins and enzymes such as repressor proteins, restriction endonucleases, modification enzymes, and promoters[5,6]. Applications for a variety of key modifications are described on the following pages.

ChemGenes carries a wide variety of modifed DNA phosphoramidites and supports. The products are summarized below.

4-Thio and 2-Thio amidites.

deoxy Inosine; deoxy Uridine; 5-Methyl cytidine Amidites and Supports.

C-5 Methyl substituted Amidites and Supports.

Alpha (α) deoxy Amidites and Supports.

2′-O-Trifluoroacetamido (TFA) propyl Amidite; 3′-amino (TFA) Amidites; 3′-amino (MMT) Amidites.

5′-amino (MMTr) thymidine Amidites and Supports.

Arabinoside Amidites and Supports.

7-Deaza Amidites; 7-Deaza-7-modified Amidites and Supports.

3′-deoxy adenosine (Cordycepin) Amidites and Supports.

6-Thio guanosine Amidites.

C-5; C8-Halogenated; 5′-Halogenated amidites and supports.

N-Alkylated Amidites and Supports.

2′-Fluoro Insosine (O6-TMS-Ethyloxy) Amidites and Supports.
8-Methyl deoxy guanosine Amdites and Supports.

Nebularine; 2-Amino Purine Amidites and Supports
Nebularine, 2-Amino-purine-deoxyadenosine, & 2-Fluoro-deoxyinosine (*O*^{6}-trimethoxy silyl ethoxy)

4-Triazolyl; IsoC, IsoG Amidites and Supports
Including 2-Thio-thymidine, 2-Thio-deoxyuridine , Deoxy-isoguanosine, & Deoxy-isocytidine amidites & supports.

L-DNA Amidites and Supports

Abasic, 8-Oxo and Dideoxy Amidites and Supports
Including Abasic & Reverse Abasic, 8-Oxo-dA, 8-Oxo-dG, and Dideoxy-A,C,G,T amidites and supports.

5′-O-Methyl DNA amidites

5′-O-DMTr-5-formyl (diacetyl)-2′-deoxyuridine-3′-CEP

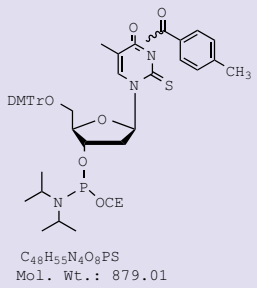
References:

1. Korreck. *J. Eur. J. Biochem.* **2003**, *270*, 1625.
2. Wilson, C. *Curr. Opin . Chem. Biol.* **2006**, 5487-5502.
3. Grimm. D. *Adv. Drug, Deliv. Rev.* **2009**, *61*,672-703.
4. Lin, C. *et. al. Biochemistry* **2009**, *48*, 1663-1674.
5. Dubendorff, J. W.; de Hasett, P. L.; Rosendahl, M. S.; Caruthers, M. H. *J. Biol. Chem.* **1987**, 262, 892.
6. Brennan, C. A.; Van Cleve, M. D.; Gumpert, R. I. *J. Biol. Chem.* **1986** *261*, 7270-7279.

Oligo Synthesis Products

Phosphoramidites and Supports for Modified DNA Synthesis

2-Thio-thymidine-3′-CEP

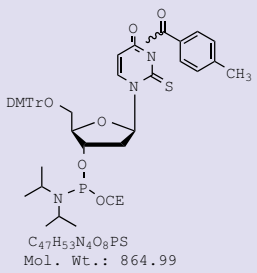


Catalog# ANP-9213

Pricing
$280.00 / 100 µmole
$620.00 / 250 mg
$1025.00 / 500 mg

Purity: 98% +

2-Thio-2′-deoxyuridine-3′-CEP



Catalog# ANP-9214

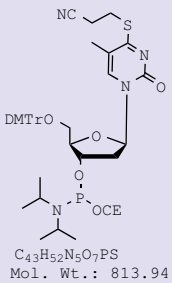
Pricing
$280.00 / 100 µmole
$620.00 / 250 mg
$1025.00 / 500 mg

Purity: 98% +

2 Thio 3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9509-05	2-Thio-thymidine-	500Å	$110	$810	$125	$155	$250	$310
N-9509-10	3′-lcaa CPG	1000Å						
N-9510-05	2-Thio-2′-deoxyuridine-	500Å	$125	$900	$135	$170	$270	$340
N-9510-10	3′-lcaa CPG	1000Å						

4-Thio-thymidine-3′-CEP



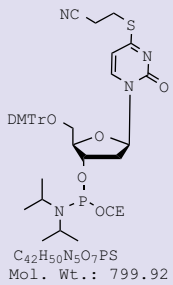
Catalog# ANP-6414

Pricing
$280.00 / 100 µmole
$620.00 / 250 mg
$1025.00 / 500 mg

Purity: 98% +

CAS No. 1290537-73-3

4-Thio-2′-deoxyuridine-3′-CEP



Catalog# ANP-7624

Pricing
$280.00 / 100 µmole
$620.00 / 250 mg
$1025.00 / 500 mg

Purity: 98% +

CAS No. 144303-74-2

3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9758-05	4-Thio-2′-deoxy-	500Å	$90	$735	$80	$120	$160	$240
N-9758-10	uridine-3′-lcaa CPG	1000Å						
N-9925-05	4-Thio-thymidine-	500Å	$80	$735	$90	$120	$160	$240
N-9925-10	3′-lcaa CPG	1000Å						

Thiolated Nucleobases

Thiolated nucleobases incorporated into oligonucleotides primarily have been used as an efficient photo-cross linking groups and useful moieties for further post-synthetic oligonucleotide modifications.[1] Another high demand for thiolated nucleosides is in DNA and RNA structural study due to size and electro negativity difference of the sulfur atom compared to oxygen.[2]

ChemGenes also offers thiolated RNA phosphoramidites (see p. 74)

1. Coleman, R. S., Kesicki, E. A. Jour. Am. Chem. Soc. 1994, 116, 11636. 2. Sismour, A. M., Benner, S. A. Nucleic. Acids Res. 2005, 33, 5640.

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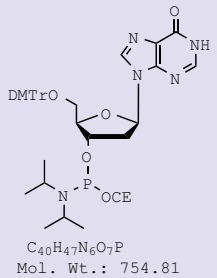
2′-Deoxyinosine-3′-CEP



$C_{40}H_{47}N_6O_7P$
Mol. Wt.: 754.81

Catalog#

ANP-6411

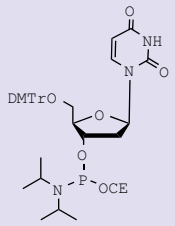
Pricing

$45.00 / 100 µmole
$115.00 / 250 mg
$195.00 / 500 mg

Purity: 98% +

CAS No. 141684-35-7

2′-Deoxyuridine-3′-CEP



$C_{39}H_{47}N_4O_8P$
Mol. Wt.: 730.79

Catalog#

ANP-6131

Pricing

$32.00 / 100 µmole
$95.00 / 250 mg
$165.00 / 500 mg

Purity: 98% +

CAS No. 109389-30-2

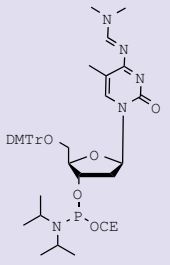
Deoxy Inosine amidite: Universal bases hybridize non-selectively to each of native bases. For a recent publication in this field, see, Berger M., Wu Y., Ogawa A. K., McMinn D. L., Schultz P. G., Rosenberg F. E., *Nucl. Acids Res.* **2000**, *28*, 2911-2914.

3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	Bulk CPG 5 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-5107-05	2′-Deoxyuridine-3′-lcaa CPG	500Å							
N-5107-10		1000Å	$45	$185	$550	$48	$60	$96	$120
N-5107-20		2000Å							
N-5108-05	2′-Deoxyinosine-3′-lcaa CPG	500Å							
N-5108-10		1000Å	$45	$185	$550	$48	$60	$96	$120
N-5108-20		2000Å							

5-Methyl-2′-deoxycytidine-3′-CEP

(5-Methyl-2′-deoxycytidine (*N*-DMF)-3′-CEP)



$C_{43}H_{55}N_6O_7P$
Mol. Wt.: 798.91

Catalog#

ANP-6422

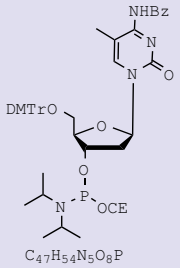
Pricing

$70.00 / 100 µmole
$182.00 / 250 mg
$325.00 / 500 mg

Purity: 98% +

5-Methyl-2′-deoxycytidine-3′-CEP

(5-Methyl-2′-deoxycytidine (*N*-Bz)-3′-CEP)



$C_{47}H_{54}N_5O_8P$
Mol. Wt.: 847.93

Catalog#

ANP-6421

Pricing

$40.00 / 100 µmole
$100.00 / 250 mg
$190.00 / 500 mg

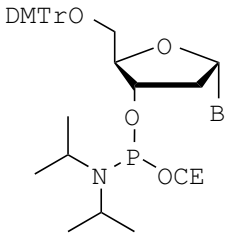
Purity: 98% +

CAS No. 105931-57-5

Deprotection of Oligonucleotides consisting of 5-Methyl deoxy Cytidine (*N*-DMF) takes 3-4 hours at 37 °C with aq. ammonia and is compatible with PAC chemistry.

5-Methyl dC lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-1353-05	5-Methyl-2′-deoxycytidine (*N*-Bz)-	500Å						
N-1353-10	3′-lcaa CPG	1000Å	$45	$175	$95	$135	$190	$270
N-1353-20		2000Å						
N-1355-05	5-Methyl-2′-deoxycytidine (*N*-DMF)-	500Å						
N-1355-10	3′-lcaa CPG	1000Å	$45	$175	$95	$135	$190	$270
N-1355-20		2000Å						

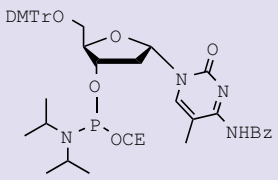


α-D-Modified DNA

B	Protection	Catalog#
A	*N*-Bz	ANP-1651
C	*N*-Bz	ANP-1652
G	*N*-*i*Bu	ANP-1653
T	N/A	ANP-1654
C	*N*-Ac	ANP-4676

Catalog #	Product Name	100 µmole	250 mg	500mg	1g
ANP-1651	α-D-2'-deoxyadenosine (*N*-Bz)-3'-CEP, *M.W. 857.93*	$70.00	$175.00	$295.00	$500.00
ANP-1652	α-D-2'-deoxycytidine (*N*-Bz)-3'-CEP, *M.W. 833.81*	$70.00	$175.00	$295.00	$500.00
ANP-1653	α-D-2'-deoxyguanosine (*N*-iBu)-3'-CEP, *M.W. 839.92*	$70.00	$175.00	$295.00	$500.00
ANP-1654	α-D-thymidine-3'-CEP, *M.W. 744.81*	$70.00	$175.00	$295.00	$500.00
ANP-4676	α-D-2'-deoxycytidine (*N*-Ac)-3'-CEP, *M.W. 771.84*	$70.00	$175.00	$295.00	$500.00

α-D-5-methyl-2'-deoxycytidine (N-Bz)-3'-CEP



$C_{47}H_{54}N_5O_8P$
Mol. Wt.: 847.93

Catalog#

ANP1756

Pricing

$180.00 / 100 µmole
$425.00 / 250 mg
$725.00 / 500 mg

Purity: 98% +

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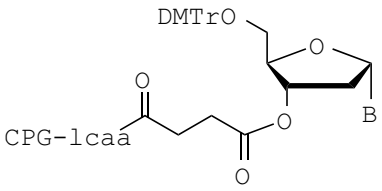

Solid Supports for Alpha-D-Modified DNA

B	Protection	Catalog#
A	*N*-Bz	N-1751
C	*N*-Bz	N-1752
G	*N*-*i*Bu	N-1753
T	N/A	N-1754

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-1751-05	α-D-2'-deoxyadenosine-	500Å						
N-1751-10	(*N*-Bz)-3'-lcaa CPG	1000Å	$45	$350	$100	$150	$200	$300
N-1751-20		2000Å						
N-1752-05	α-D-2'-deoxycytidine-	500Å						
N-1752-10	(*N*-Bz)-3'-lcaa CPG	1000Å	$45	$350	$100	$150	$200	$300
N-1752-20		2000Å						
N-1753-05	α-D-2'-deoxyguanosine-	500Å						
N-1753-10	(*N*-*i*Bu)-3'-lcaa CPG	1000Å	$45	$350	$100	$150	$200	$300
N-1753-20		2000Å						
N-1754-05	α-D-thymidine-	500Å						
N-1754-10	3'-lcaa CPG	1000Å	$45	$350	$100	$150	$200	$300
N-1754-20		2000Å						

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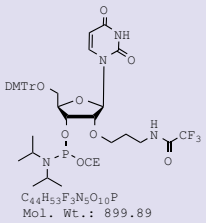
Oligo Synthesis Products

Phosphoramidites and Supports for Modified DNA Synthesis

2′-*O*-Trifluoroacetoamidopropyl-uridine-3′-CEP



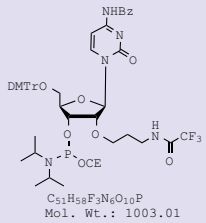
Catalog# ANP-7115

Pricing
$275.00 / 100 µmole
$675.00 / 250 mg
$1140.00 / 500 mg

Purity: 98% +

CAS No. 165381-49-7

2′-*O*-Trifluoroacetoamidopropyl-cytidine-3′-CEP
(2′O-Trifluoroacetoamido-propyl-cytidine (N-Bz)-3′-CEP)



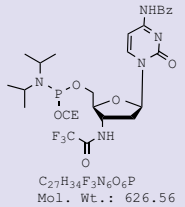
Catalog# ANP-7116

Pricing
$275.00 / 100 µmole
$675.00 / 250 mg
$1140.00 / 500 mg

Purity: 98% +

CAS No. 165381-54-4

3′-Amino (TFA)-2′-deoxycytidine-5′-CEP
(3′-Amino (TFA)-2′-deoxycytidine (N-Bz)-5′-CEP)

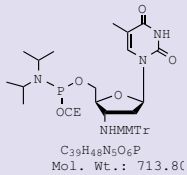


Catalog# ANP-1242

Pricing
$290.00 / 100 µmole
$940.00 / 250 mg
$1590.00 / 500 mg

Purity: 98% +

3′-Amino (MMTr)-thymidine-5′-CEP

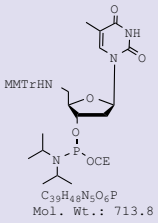


Catalog# ANP-8454

Pricing
$290.00 / 100 µmole
$940.00 / 250 mg
$1590.00 / 500 mg

Purity: 98% +

5′-Amino (MMTr)-thymidine-3′-CEP



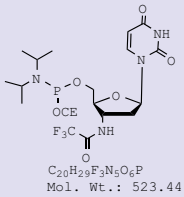
Catalog# ANP-9402

Pricing
$145.00 / 100 µmole
$395.00 / 250 mg
$710.00 / 500 mg

Purity: 98% +

CAS No. 118849-12-0

3′-Amino (TFA)-2′-deoxyuridine-5′-CEP



Catalog# ANP-1245

Pricing
$290.00 / 100 µmole
$940.00 / 250 mg
$1590.00 / 500 mg

Purity: 98% +

3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9506-05	5′-Amino (MMT)-thymidine-	500Å	$110	$850	$120	$180	$240	$360
N-9506-10	3′-lcaa CPG	1000Å						

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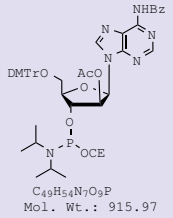
Adenosine-arabinoside

Ara-(2′-*O*-acetyl)-adenosine (N-Bz)-3′-CEP



Catalog# ANP-1711

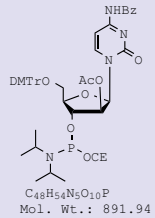
Pricing

$126.00 / 100 µmole
$306.00 / 250 mg
$550.00 / 500 mg

Purity: 98% +

Cytosine-arabinoside

Ara-(2′-*O*-acetyl)-cytidine (N-Bz)-3′-CEP



Catalog# ANP-1712

Pricing

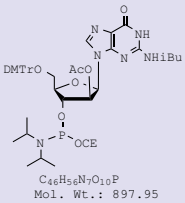
$126.00 / 100 µmole
$306.00 / 250 mg
$550.00 / 500 mg

Purity: 98% +

CAS No. 675573-97-4

Guanosine-arabinoside

Ara-(2′-*O*-acetyl)-guanosine (N-iBu)-3′-CEP



Catalog# ANP-1713

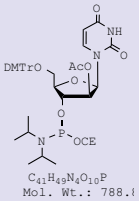
Pricing

$160.00 / 100 µmole
$400.00 / 250 mg
$720.00 / 500 mg

Purity: 98% +

Uridine-arabinoside

Ara-(2′-*O*-acetyl)-uridine-3′-CEP



Catalog# ANP-1715

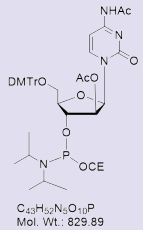
Pricing

$126.00 / 100 µmole
$306.00 / 250 mg
$550.00 / 500 mg

Purity: 98% +

Cytidine (N-Ac)-arabinoside

Ara-(2′-*O*-acetyl)-cytidine(N-Ac)-3′-CEP



Catalog# ANP-1714

Pricing

$126.00 / 100 µmole
$306.00 / 250 mg
$550.00 / 500 mg

Purity: 98% +

Effect of all Arabino modified nucleosides on the duplex stabilities upon incorporation into DNA/RNA has been extensively studied.
(Beardsley, P.; Mikita, T.; Klause, M. M.; Nussbaum, A. L. *Nucl. Acids. Res.* **1988**, *16,* 9165).
AraC nucleoside is a potent antileukemic agent as well as an inhibitor of DNA replication, through a mechanism which is not yet fully understood (Major, P. P. *et. al. Proc. Natl. Acad. Sci. USA*, **1981**, *78*, 3235).

Arabinoside Icaa Supports & Columns

Catalog#	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-7366-05	Ara-adenosine (*N*-Bz)-	500Å						
N-7366-10	3'-Icaa CPG	1000Å	$65	$500	$88	$112	$176	$224
N-7366-20		2000Å						
N-7367-05	Ara-cytidine (*N*-Bz)-	500Å						
N-7367-10	3'-Icaa CPG	1000Å	$65	$500	$88	$112	$176	$224
N-7367-20		2000Å						
N-7421-05	Ara-guanosine (*N*-*i*Bu)-	500Å						
N-7421-10	3'-Icaa CPG	1000Å	$65	$500	$88	$112	$176	$224
N-7421-20		2000Å						
N-7422-05	Ara-uridine-	500Å						
N-7422-10	3'-Icaa CPG	1000Å	$65	$500	$88	$112	$176	$224
N-7422-20		2000Å						

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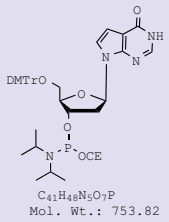
Oligo Synthesis Products

Phosphoramidites and Supports for Modified DNA Synthesis

7-Deaza-2′-deoxyinosine-3′-CEP



Catalog# ANP-1146

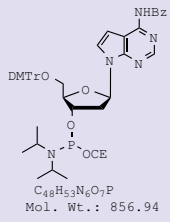
Pricing

$150.00 / 50 µmole
$310.00 / 100 µmole
$790.00 / 250 mg
$1340.00 / 500 mg
$2200.00 / 1 g

Purity: 98% +

2′-Deoxytubercidin 3′-CEP

(7-Deaza-2′-deoxyadenosine (N-Bz)-3′-CEP);



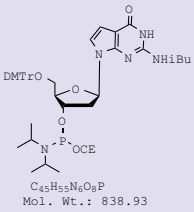
Catalog# ANP-4815

Pricing

$150.00 / 50 µmole
$310.00 / 100 µmole
$790.00 / 250 mg
$1340.00 / 500 mg
$2200.00 / 1 g

Purity: 98% +
CAS No. 107134-59-8

7-Deaza-2′-deoxyguanosine (*N*-iBu)-3′-CEP



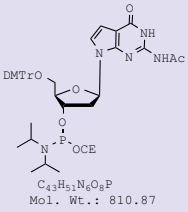
Catalog# ANP-4857

Pricing

$150.00 / 50 µmole
$310.00 / 100 µmole
$790.00 / 250 mg
$1340.00 / 500 mg
$2200.00 / 1 g

Purity: 98% +

7-Deaza-2′-deoxyguanosine (*N*-Ac)-3′-CEP



Catalog# ANP-4858

Pricing

$150.00 / 50 µmole
$310.00 / 100 µmole
$790.00 / 250 mg
$1340.00 / 500 mg
$2200.00 / 1 g

Purity: 98% +

7-Deaza 3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-8777-05	7-Deaza-2′-deoxyadenosine	500Å	$90	$750	$110	$145	$220	$290
N-8777-10	(*N*-Bz)-3′-lcaa CPG;	1000Å						
	(2′-Deoxytubercidin CPG)							
N-8778-05	7-Deaza-2′-deoxyguanosine	500Å	$90	$750	$110	$145	$220	$290
N-8778-10	(*N*-*i*Bu)-3′-lcaa CPG	1000Å						
N-8779-05	7-Deaza-2′-deoxy-	500Å	$90	$750	$110	$145	$220	$290
N-8779-10	inosine-3′-lcaa CPG	1000Å						

7-Deaza-2′-deoxyadenosine (2′-deoxytubercidin), 7-Deaza-2′-deoxyGuanosine, and 7-Deaza-2′-deoxyInosine

These analogs of natural deoxy Inosine, deoxy Adenosine, and deoxy Guanosine have found great interest among molecular biologists for the purpose of localizing DNA-enzyme interactions (Seela, F.; Driller, H. *Nucl. Acids Res.* **1985**, *13*, 911) and facilitating DNA sequencing using M13 chain-termination methodology (Mizusawa, S.; Nishimura, S.; Seela, F. *Nucl. Acids Res.* **1986** *14*, 1315).

The oligonucleotide containing these bases have reduced band compression which occurs due to strong GC base pairing. The high stability of the oligomers containing these bases and their possible application in MALDI mass spectrometry (Schneider, K.; Chait, B. T. *Nucl. Acids Res.* **1995**, *23,* 1570) allows for these substances to play a key role in DNA sequencing. The 7-deaza bases are related to 2'-deoxyadenosine, 2'-deoxyguanosine and form stable base pairs in duplex DNA. (Seela, F.; Winter, H. *Helv. Chim. Acta.* **1994**, *77*, 597; Seela, F.; Winter, H. *Helv. Chim. Acta.* **1998**, *81*, 2244.)

For Corrosponding ribo 7-Deaza Amidites see page 80.
For Corrosponding 7-Deaza-2′-*O*-methyl amidites see page 96.

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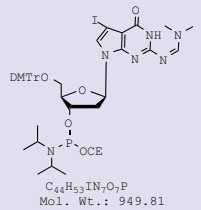
7-Deaza-7-iodo-2′-deoxyguanosine-3′-CEP

(5′-DMTr-7-Deaza-7-Iodo-2′-deoxyguanosine (N-DMF)-3′-CEP)



Catalog#

ANP-4589

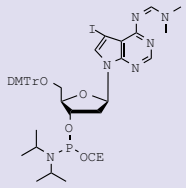
Pricing

$225.00 / 50 µmole
$380.00 / 100 µmole
$760.00 / 250 mg
$1290.00 / 500 mg
$2190.00 / 1 g

Purity: 98% +

7-Deaza-7-iodo-2′-deoxyadenosine-3′-CEP

(5′-DMTr-7-Deaza-7-Iodo-2′-deoxyadenosine (N-DMF)-3′-CEP); 7-Iodo-2′-deoxytubercidin CEP



Catalog#

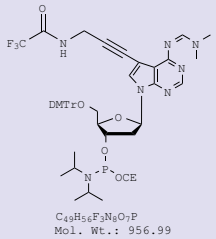
ANP-4586

Pricing

$225.00 / 50 µmole
$380.00 / 100 µmole
$760.00 / 250 mg
$1290.00 / 500 mg
$2190.00 / 1 g

Purity: 98% +

7-Deaza-2′-deoxyadenosine (*N*-DMF)-7-propargylamino (TFA)-3′-CEP



Catalog#

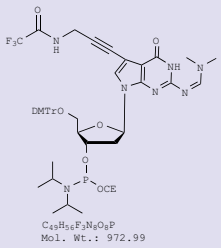
ANP-1339

Pricing

$265.00 / 50 µmole
$400.00 / 100 µmole
$800.00 / 250 mg
$1440.00 / 500 mg
$2440.00 / 1 g

Purity: 98% +

7-Deaza-2′-deoxyguanosine (*N*-DMF)-7-propargylamino (TFA)-3′-CEP



Catalog#

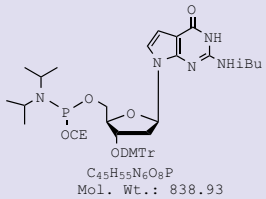
ANP-1354

Pricing

$265.00 / 50 µmole
$400.00 / 100 µmole
$800.00 / 250 mg
$1440.00 / 500 mg
$2440.00 / 1 g

Purity: 98% +

7-Deaza-2′-deoxyguanosine (N-iBu)-3′-DMTr-5′-CEP



Catalog#

ANP-4679

Pricing

$220.00 / 50 µmole
$310.00 / 100 µmole
$790.00 / 250 mg
$1340.00 / 500 mg
$2240 / 1 g

Purity: 98% +

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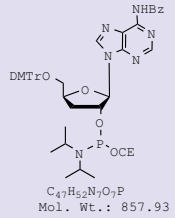
3′-Deoxyadenosine (*N*-Bz)-2′-CEP

(Cordycepin)



Catalog# ANP-9312

Pricing

$345.00 / 100µmole
$895.00 / 250 mg
$1520.00 / 500 mg
$2420.00 / 1 g

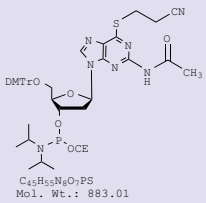
Purity: 98% +

CAS No. 207347-42-0

3′-dA lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9502-05	3′-Deoxyadenosine (*N*-Bz)-2′-lcaa CPG (Cordycepin)	500Å	$295	$200	$400	$400	$800
N-9502-10	3′-Deoxyadenosine (*N*-Bz)-2′-lcaa CPG (Cordycepin)	1000Å	$295	$200	$400	$400	$800

6-Thio-2′-deoxyguanosine (*N*-Ac)-3′-CEP



Catalog# ANP-7628

Pricing

$250.00 / 100µmole
$600.00 / 250 mg
$1080.00 / 500 mg
$1720.00 / 1 g

Purity: 98% +

Halogenated Nucleobases

Brominated and iodinated nucleobases may be used in crystallographic studies of oligonucleotide structures,[1] as photo-crosslinking groups or for introducing other functional groups replacing halogen with nucleophiles.[2] It has been shown that 5-modified pyrimidines such as 5-Fluor, 5-Bromo, 5-Iodo uridines and 5-Methyl cytidine capping increases nucleobase resistance from 7- to 12-fold over unmodified oligonucleotides.[3]

1.Goytisolo, F. A., Packman, L. C., Thomas, J. O. *European J. Biol* **1996,** *242*, 619, b) Fernandez, J. L., Campos, A., Goytisolo, F. A., Buno, I., Gosalvez, *Jour. Biol. Cell* **1994**, *82*, 33.
2.DeCorte, B. L., Tsarouhtsis, D., Kuchimanchi, S., Cooper, M. D., Horton, P., Harris, C. M., Harris, T. M. *Chem. Res. Toxicol.* **1996**, *9*, 630.
3.Sanghvi, Y. S., Hoke, G. D., Freier, S. M., Zounes, M. C., Gonzalez, C., Cummins, L., Sasmor, H., Cook, P. D. *Nucleic Acids Res.* **1993**, *21*, 3197.

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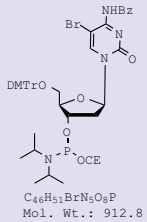
5-Bromo-2′-deoxycytidine (*N*-Bz)-3′-CEP



$C_{46}H_{51}BrN_5O_8P$
Mol. Wt.: 912.8

Catalog#

ANP-6141

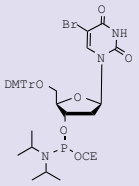
Pricing

$55.00 / 100 µmole
$135.00 / 250 mg
$240.00 / 500 mg
$430.00 / 1 g

Purity: 98% +

CAS No. 178925-43-4

5-Bromo-2′-deoxyuridine-3′-CEP



$C_{39}H_{46}BrN_4O_8P$
Mol. Wt.: 809.68

Catalog#

ANP-6415

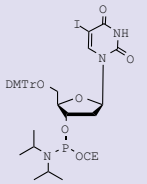
Pricing

$55.00 / 100 µmole
$135.00 / 250 mg
$240.00 / 500 mg
$430.00 / 1 g

Purity: 98% +

CAS No. 142246-64-8

5-Iodo-2′-deoxyuridine-3′-CEP



$C_{39}H_{46}IN_4O_8P$
Mol. Wt.: 856.6

Catalog#

ANP-4611

Pricing

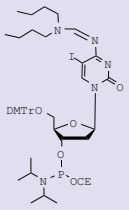
$55.00 / 100 µmole
$135.00 / 250 mg
$240.00 / 500 mg
$430.00 / 1 g

Purity: 98% +

CAS No. 178925-48-9

5-Iodo-2′-deoxycytidine (*N*-DBF)-3′-CEP

(5-Iodo-2′-deoxycytidine (*N*-DBF)-3′-CEP)



$C_{48}H_{60}IN_6O_9P$
Mol. Wt.: 1022.9

Catalog#

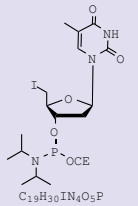
ANP-4591

Pricing

$125.00 / 100 µmole
$250.00 / 250 mg
$450.00 / 500 mg
$810.00 / 1 g

Purity: 98% +

5′-Iodo-thymidine-3′-CEP



$C_{19}H_{30}IN_4O_5P$
Mol. Wt.: 552.3

Catalog#

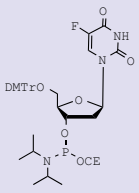
ANP-4613

Pricing

$125.00 / 100 µmole
$416.00 / 250 mg
$710.00 / 500 mg
$1275.00 / 1 g

Purity: 98% +

5-Fluoro-2′-deoxyuridine-3′-CEP



$C_{39}H_{46}FN_4O_8P$
Mol. Wt.: 748.7

Catalog#

ANP-6151

Pricing

$125.00 / 100 µmole
$416.00 / 250 mg
$710.00 / 500 mg
$1275.00 / 1 g

Purity: 98% +

CAS No. 178925-48-9

For applications of halogenated nucleobases please refer to page # 35.

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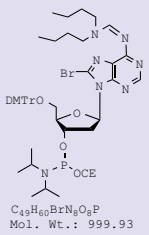
Oligo Synthesis Products

Phosphoramidites and Supports for Modified DNA Synthesis

8-Bromo-2′-deoxyadenosine (*N*-DBF)-3′-CEP

(8-Bromo-2′-deoxyadenosine (*N*-DBF)-3′-CEP)



Catalog# ANP-4702

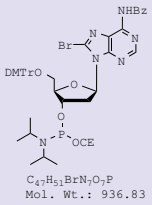
Pricing

$110.00 / 100 µmole
$275.00 / 250 mg
$495.00 / 500 mg

Purity: 98% +

8-Bromo-2′-deoxyadenosine (*N*-Bz)-3′-CEP

(8-Bromo-2′-deoxyadenosine (N-Bz)-3′-CEP)



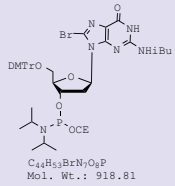
Catalog# ANP-4703

Pricing

$120.00 / 100 µmole
$300.00 / 250 mg
$540.00 / 500 mg

Purity: 98% +

8-Bromo-2′-deoxyguanosine (*N*-iBu)-3′-CEP



Catalog# ANP-6152

Pricing

$100.00 / 100 µmole
$230.00 / 250 mg
$510.00 / 500 mg

Purity: 98% +

Deprotection of Bz protected 8-Bromo deoxy Adenosine containing oligos takes 7-8 hours at 37 °C with aq. ammonia.

Deprotection of N-dibutyl formamidine (*N*-DBF) protected 5'-DMTr-8-Bromo deoxy Adenosine takes 2-3 hours at 37 °C with aq. ammonia deprotection of oligo. This group is compatabile with PAC Chemistry.

C-8 Substituted Purine and C-5 Halogen Substituted Pyrimidines:

The bromo group in Adenosine and Guanosine at C-8 position is photolabile in nature. 8-Bromo deoxy Adenosine phosphoramidite has been incorporated into synthetic DNA as a means to create a site which can be photo-activated after duplex formation.

Such DNA or RNA probes containing 8-Bromo Adenosine or Guanosine could thus be useful to determine specific contact in protein-DNA complexes (Liu, J., Verdine, G. L. *Tet. Lett.* **1992**, *33*, 4265).

Supports for Halogenated Nucleosides

			Bulk CPG		pack of 4 cols.		pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	1 g	0.2 µmole	1.0 µmole	0.2 µmole	1.0 µmole
N-1378-05 N-1378-10	5-Bromo-2'-deoxyuridine-3'-lcaa CPG	500Å 1000Å	$50	$175	$95	$145	$190	$290
N-7362-05 N-7362-10	5-Bromo-2'-deoxycytidine-(*N*-Bz)-3'-lcaa CPG	500Å 1000Å	$50	$175	$95	$145	$190	$290
N-7363-05 N-7363-10	5-Iodo-2'-deoxycytidine-(*N*-DBF)-3'-lcaa CPG	500Å 1000Å	$65	$260	$105	$160	$210	$320
N-4612-05 N-4612-10	5-Iodo-2'-deoxycytidine (*N*-Bz)-3'-lcaa CPG	500Å 1000Å	$65	$260	$105	$160	$210	$320
N-7364-05 N-7364-10	5-Iodo-2'-deoxyuridine-3'-lcaa CPG	500Å 1000Å	$65	$260	$105	$160	$210	$320
N-7365-05 N-7365-10	5-Fluoro-2'-deoxyuridine-3'-lcaa CPG	500Å 1000Å	$65	$265	$105	$160	$210	$320
N-9921-05 N-9921-10	8-Bromo-2'-deoxyguanosine (*N*-iBu)-3'-lcaa CPG	500Å 1000Å	$115	$430	$110	$180	$220	$360
N-4704-05 N-4704-10	8-Bromo-2'-deoxyadenosine (*N*-DBF)-3'-lcaa CPG	500Å 1000Å	$110	$420	$105	$175	$210	$350
N-4705-05 N-4705-10	8-Bromo -2'-deoxyadenosine (*N*-Bz)-3'-lcaa CPG	500Å 1000Å	$110	$420	$105	$175	$210	$350

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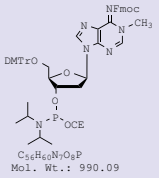
N^1-Methyl-2′-deoxyadenosine-3′-CEP

(N^1-Methyl-2′-deoxyadenosine (*N*-Fmoc)-3′-CEP)



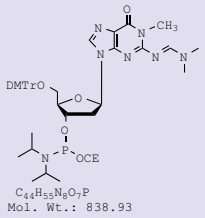
Catalog# ANP-6121

Pricing
$325.00 / 100 µmole
$690.00 / 250 mg
$1170.00 / 500 mg

Purity: 98% +

N^1-Methyl-2′-deoxyguanosine-3′-CEP

(N^1-Methyl-2′-deoxyguanosine (N-DMF)-3′-CEP)



Catalog# ANP-6122

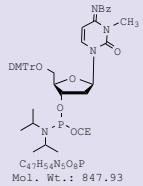
Pricing
$325.00 / 100 µmole
$825.00 / 250 mg
$1470.00 / 500 mg

Purity: 98% +

CAS No. 178925-48-9

N^3-Methyl-2′-deoxycytidine-3′-CEP

(N^3-Methyl-2′-deoxycytidine (N-Bz))-3′-CEP)

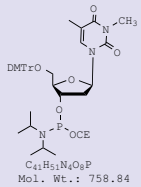


Catalog# ANP-3851

Pricing
$225.00 / 100 µmole
$630.00 / 250 mg
$1070.00 / 500 mg

Purity: 98% +

N^3-Methyl-thymidine-3′-CEP



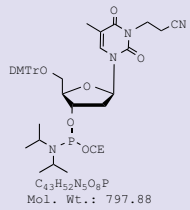
Catalog# ANP-6153

Pricing
$127.00 / 100 µmole
$286.00 / 250 mg
$500.00 / 500 mg

Purity: 98% +

CAS No. 178925-48-9

N^3-Cyanoethyl-thymidine-3′-CEP



Catalog# ANP-3857

Pricing
$150.00 / 100 µmole
$495.00 / 250 mg
$850.00 / 500 mg

Purity: 98% +

N-Alkylated phosphoramidites

DNA in living organisms is vulnerable to alkylation due to mutagenic effects of carcinogens. Recently it has been shown that there is direct reversal of *N*-alkylation of methylated bases in oligonucleotides. A recent discovery of an enzyme which is a substrate for DNA repair (Trewick, S. C., Henshaw, T. F., Hausinger, R. P., Lindahl, T., Sedgwick, B. *Nature*, **2002**, *419*, 174-177; and another report confirming these observations, Falnes, P.; Johansen, R. F.; Seeberg, E. *Nature* **2002**, *419*, 178). These reports have great implication for repair of such carcinogenic and mutagenic events*.

N-alkylated nucleosides and the oligonucleotides incorporating methylated bases at specific sites in oligonucleotides possess great potential for studies of reversal of alkylation in oligonucleotides and studies in oxidative alkylation inside cells by various carcinogens.

ChemGenes is offering the phosphoramidites for studies and possibilities of reversal of methylation lesions by use of oligonucleotides incorporating alkylated purine/pyrimidines.

**For more references check on page 39.*

Check page # 39 for *N*-Alkylated nucleoside supports

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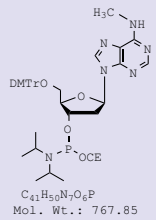
N^6-Methyl-2′-deoxyadenosine-3′-CEP



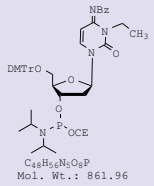
Catalog# ANP-3855

Pricing
$150.00 / 100 µmole
$415.00 / 250 mg
$705.00 / 500 mg

Purity: 98% +

CAS No. 178925-48-9

N^3-Ethyl-2′-deoxycytidine (*N*-Bz)-3′-CEP

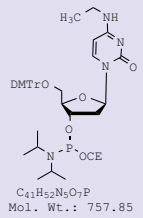


Catalog# ANP-3856

Pricing
$225.00 / 100 µmole
$580.00 / 250 mg
$990.00 / 500 mg

Purity: 98% +

N^4-Ethyl-2′-deoxycytidine-3′-CEP



Catalog# ANP-6444

Pricing
$190.00 / 100 µmole
$550.00 / 250 mg
$990.00 / 500 mg

Purity: 98% +

CAS No. 195535-80-9

***N*⁴-Ethyldeoxy Cytidine phosphoramidite:** *N*⁴-Ethyl dC hybridizes selectively with natural dG to give G:4EtC base pair (Nguyen, H., Southern, E. M. *Nucl. Acids Res.*, **2000**, *28*, 3904-3909).

***N*-Alkylated phosphoramidites references** (cont. from page # 38):
Delaney, J. C., Essigmann, J. M. *Proc. Natl. Acad. Sci. U.S.A.* **2004**, *101*, 14051-14056.
Delaney, J. C. *et. al. Nat. Struct. Mol. Biol.*, **2005**, *12*, 855-860.
Jarosz, D. F. *et. al. Nature* **2006**, *439*, 225-228.
Frick, L. E. *et. al Proc. Natl. Acad. Sci. U.S. A.* **2007**, *104*, 755-760.
Lee *et. al. Biochemistry*, **2009**, *48*, 1850-1861.
Jarosz, D. F. *et. al. Proc. Natl. Acad. Sci U.S.A.* 2009, 106, 21137-21142.
Li and et al, Journal of Nucleic Acids, 2010, 369434

Supports for N-Alkylated Nucleosides

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9980-05 N-9980-10	N^1-Methyl-2'-deoxyadenosine (*N*-Fmoc)-3'-lcaa CPG	500Å 1000Å	$125	$970	$90	$125	$180	$250
N-9981-05 N-9981-10	N^1-Methyl-2'-deoxyguanosine (*N*-DMF)-3'-lcaa CPG	500Å 1000Å	$125	$970	$90	$125	$180	$250
N-9922-05 N-9922-10	N^3-Methyl-thymidine-3'-lcaa CPG	500Å 1000Å	$125	$970	$90	$125	$180	$250
N-9923-05 N-9923-10	N^4-Ethyl-2'-deoxycytidine-3'-lcaa CPG	500Å 1000Å	$125	$970	$80	$120	$160	$240

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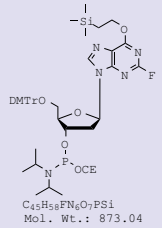
2-Fluoro-O^6-TMS-ethyloxy-2′-deoxyinosine-3′-CEP

(For post synthetic modification of Guanosine-carbon-2)



$C_{45}H_{58}FN_6O_7PSi$
Mol. Wt.: 873.04

Catalog#

ANP-7702

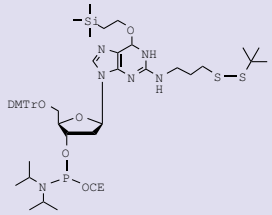
Pricing

$250.00 / 100 µmole
$640.00 / 250 mg
$1080.00 / 500 mg

Purity: 98% +

CAS No. 175730-60-6

N^2(Tert-butyldithiopropyl)-O^6-TMS-ethyloxy-2′-deoxyinosine-3′-CEP



$C_{52}H_{76}N_7O_7PS_2$
Mol. Wt.: 1034.39

Catalog#

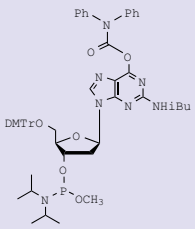
ANP-6445

Pricing

$280.00 / 100 µmole
$650.00 / 250 mg
$1170.00 / 500 mg

Purity: 98% +

O^6-Diphenylcarbamoyl-N^2-iBu-2′-deoxyguanosine-3′-methyl phosphoramidite



$C_{55}H_{62}N_7O_9P$
Mol. Wt.: 996.10

Catalog#

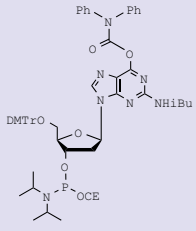
ANP-9277

Pricing

$150.00 / 100 µmole
$335.00 / 250 mg
$600.00 / 500 mg

Purity: 98% +

O^6-Diphenylcarbamoyl-N^2-iBu-2′-deoxyguanosine-3′-CEP



$C_{57}H_{63}N_8O_9P$
Mol. Wt.: 1035.13

Catalog#

ANP-9276

Pricing

$150.00 / 100 µmole
$335.00 / 250 mg
$600.00 / 500 mg

Purity: 98% +

3′-Succinyl lcaa Supports & Columns

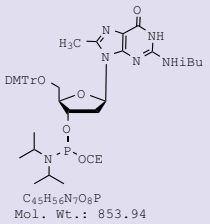
Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9926-05	2-Fluoro-2'-deoxyinosine	500Å	$125	$970	$100	$150	$200	$300
N-9926-10	(O^6-trimethylsilyl ethyl)-3'-lcaa CPG	1000Å						

2-Fluoro-O^6-trimethylsilyl-ethyloxy-2′-deoxyinosine-3′-CEP (ANP-7702)

2-Fluoro-2′-deoxyinosine incorporated oligonucleotides have been used for conversion into N^2-alkyl-2′-deoxyguanosine moiety and used in DNA repair or damage pathway study.[1,2]

1. DeCorte, B. L., Tsarouhtsis, D., Kuchimanchi, S., Cooper, M. D., Horton, P., Harris, C. M., Harris, T. M. *Chem. Res. Toxicol.* **1996**, *9*, 630.
2. Cohena, S. E., Lewisa, C. A., Mooneyb, R. A., Kohanskic, M. A., Collinsc, J. J., Landickb, R., Walkera, G. C. *Proc. Natl. Ac. Sci. USA*, **2010**, *107*, 15517.

8-Methyl-2′-deoxyguanosine(*N*-iBu)-3′-CEP



Catalog#

ANP-9274

Pricing

$320.00 / 100 µmole
$790.00 / 250 mg
$1340.00 / 500 mg

Purity: 99% +

8-Methyl deoxy Guanosine Phosphoramidite

ChemGenes now offers 8-methyl dG and 8-methyl rG amidite for incorporation in oligonucleotides for conformational studies, stability & oligonucleotides engineering. 8-methyl dG containing oligonucleotides have been shown to conform remarkable stability to Z-conformation of DNA. Similiarly 8-methyl dG containing oligonucleotides have been shown to cause a conformational and helical switch to left handed oligonucleotides.

1.Sugiyama, H., Kawai, K., Matsunaga, A., Fujimoto, K., Saito, I., Robinson, H., Wang, A.H., *Nucl. Acids Res.* **1996**, *24*, 7, 1272-1278.
2.Cherrak, I., Mauffret,O., Santamaria,F., Hocquet,A., Ghomi, B., Rayner,B., Fermandjian, S., *Nucl. Acids Res.* **2003**, 6986-6995.

8-Methyl lcaa Supports & Columns

			Bulk CPG		pack of 4 cols.		pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	1 g	0.2 µmole	1.0 µmole	0.2 µmole	1.0 µmole
N-9924-05	8-Methyl-2'-deoxyguanosine	500Å	$125	$970	$80	$125	$160	$240
N-9924-10	(*N-i*Bu)-3'-lcaa CPG	1000Å						

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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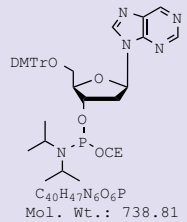
2′-Deoxynebularine-3′-CEP

(2′-Deoxy-purine-3′-CEP)



Catalog# ANP-7601

Pricing

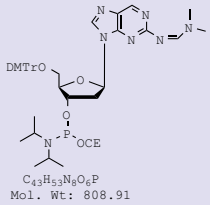
$110.00 / 100 µmole
$330.00 / 250 mg
$595.00 / 500 mg

Purity: 98% +

CAS No. 178925-28-5

2-Amino-2′-deoxypurine riboside-3′-CEP

(2-Amino-purine-2′-deoxyriboside (*N*-DMF)-3′-CEP)



Catalog# ANP-9315-2

Pricing

$300.00 / 100 µmole
$825.00 / 250 mg
$1480.00 / 500 mg

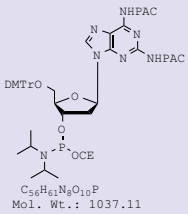
Purity: 98% +

CAS No. 178925-41-2

ANP-9315 with N-iBu protection has been discontinued.

2-Amino-2′-deoxyadenosine-(N^2,N^6-diPAC)-3′-CEP

2,6-Diamino-2′-deoxypurine (N^2, N^6-diPAC)-3′-CEP



Catalog# ANP-9316-DI

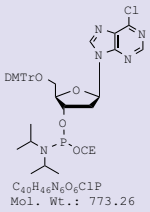
Pricing

$300.00 / 100 µmole
$500.00 / 250 mg
$850.00 / 500 mg

Purity: 98% +

CAS No. 156549-50-7

6-Chloro-2′-deoxypurine riboside-3′-CEP



Catalog# ANP-7706

Pricing

$250.00 / 100 µmole
$720.00 / 250 mg
$1290.00 / 500 mg

Purity: 98% +

3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9511-05	2-Amino-2′-deoxypurine riboside	500Å	$110	$650	$80	$120	$160	$240
N-9511-10	(*N*-DMF)-3′-lcaa CPG	1000Å						
N-9503-05	2′-Deoxynebularine	500Å	$110	$750	$120	$140	$240	$280
N-9503-10	-3′-lcaa CPG	1000Å						
N-9512-05-DI	2-6-Diaminopurine-riboside	500Å	$110	$700	$90	$120	$180	$240
N-9512-10-DI	(N^2,N^6-*di*PAC)-3′-lcaa CPG	1000Å						
N-9519-05	2-Amino-2′-deoxypurine	500Å	$110	$700	$90	$120	$180	$240
N-9519-10	riboside 3′-lcaa CPG	1000Å						

2,6-diminopurine

Oligonucleotides modified with diaminopurine display greater duplex stability and specificity compared to corresponding oligonucleotides with adenosine. These oligonucleotides have potential application in the detection of single base mismatches in the target strands.[1]

1. Hughesman, C. B., Turner, R. F. B., Haynes, C. *Nucleic Acids Symposium Series,* **2008**, *52*, 245.

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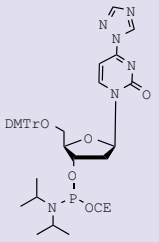
4-Triazolyl-2′-deoxyuridine-3′-CEP (Convertible dU)



$C_{41}H_{48}N_7O_7P$
Mol. Wt.: 781.84

Catalog#

ANP-9211

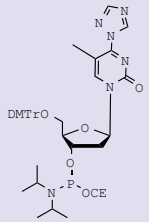
Pricing

$130.00 / 100 µmole
$320.00 / 250 mg
$575.00 / 500 mg

Purity: 98% +

CAS No. 109389-31-3

4-Triazolyl-thymidine-3′-CEP (Convertible dT)



$C_{42}H_{50}N_7O_7P$
Mol. Wt.: 795.86

Catalog#

ANP-9212

Pricing

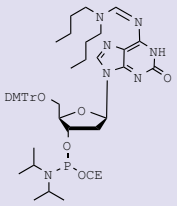
$130.00 / 100 µmole
$320.00 / 250 mg
$575.00 / 500 mg

Purity: 98% +

CAS No. 101712-10-1

2′-Deoxy-isoguanosine-3′-CEP

(2′-Deoxy-isoguanosine (N-DBF)-3′-CEP)



$C_{49}H_{65}N_8O_7P$
Mol. Wt.: 909.06

Catalog#

ANP-4268

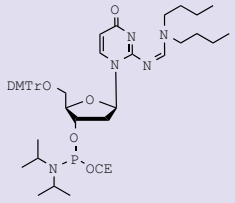
Pricing

$170.00 / 100 µmole
$415.00 / 250 mg
$745.00 / 500 mg

Purity: 98% +

2′-Deoxy-isocytidine-3′-CEP

(2′-Deoxy-isocytidine (*N*-DBF)-3′-CEP)



$C_{48}H_{65}N_6O_7P$
Mol. Wt.: 869.04

Catalog#

ANP-4269

Pricing

$170.00 / 100 µmole
$430.00 / 250 mg
$770.00 / 500 mg

Purity: 98% +

Deprotection of dibutyl-Formamidyl protected 2'-deoxy isoGuanosine takes 4-5 hours at 37 ºC with aq. ammonia deprotection of oligo.

IsoG & IsoC 3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9929-05	2'-Deoxy-isocytidine	500Å	$125	$970	$110	$175	$220	$350
N-9929-10	(*N*-DBF)-3'-lcaa CPG	1000Å						
N-9927-05	2'-Deoxy-isoguanosine	500Å	$125	$970	$110	$175	$220	$350
N-9927-10	(*N*-DBF)-3'-lcaa CPG	1000Å						

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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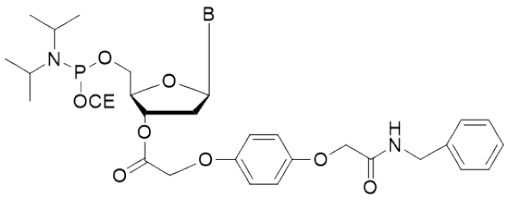

3'-HQ-Amidobenzyl-2'-Deoxy Amidite

B	Protection	Catalog#
A	*N*-Bz	ANP-8301
C	*N*-Ac	ANP-8306
C	*N*-Bz	ANP-8302
C	*N*-Bz	ANP-8307
G	*N*-*i*Bu	ANP-8303
T	N/A	ANP-8305
U	N/A	ANP-8304

Catalog #	Product Name	100mg	250mg	500mg
ANP-8301	3'-HQ-Amidobenzyl-2'-Deoxyadenosine (*N*-Bz)-5'-CEP, *M.W. 852.89*	$410.00	$815.00	$1,460.00
ANP-8306	3'-HQ-Amidobenzyl-2'-Deoxycytidine (*N*-Ac)-5'-CEP, *M.W. 766.79*	$410.00	$815.00	$1,460.00
ANP-8302	3'-HQ-Amidobenzyl-2'-Deoxycytidine (*N*-Bz)-5'-CEP, *M.W. 830.88*	$410.00	$815.00	$1,460.00
ANP-8307	5-Methyl 3'-HQ-Amidobenzyl-2'-Deoxycytidine (*N*-Bz)-5'-CEP, *M.W. 828.90*	$410.00	$815.00	$1,460.00
ANP-8303	3'-HQ-Amidobenzyl-2'-Deoxyguanosine (*N*-*i*Bu)-5'-CEP, *M.W. 820.88*	$410.00	$815.00	$1,460.00
ANP-8305	3'-HQ-Amidobenzyl-2'-Thymidine 5'-CEP, *M.W. 739.76*	$410.00	$815.00	$1,460.00
ANP-8304	3'-HQ-Amidobenzyl-2'-Deoxyuridine 5'-CEP, *M.W. 725.74*	$410.00	$815.00	$1,460.00

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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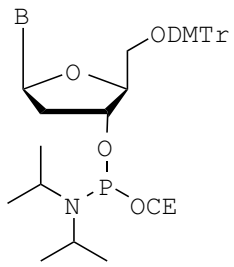

β-L-DNA Amidites for Spiegelmers Synthesis

B	Protection	Catalog#	CAS No.
A	*N*-Bz	ANP-8031	141846-54-0
C	*N*-Bz	ANP-8032	
G	*N*-*i*Bu	ANP-8033	141846-56-2
T	N/A	ANP-8034	141846-55-1
C	*N*-Ac	ANP-8035	
U	N/A	ANP-8036	144385-59-1

Catalog #	Product Name	100mg	250mg	500mg	1g	2g	5g
ANP-8031	β-L-2'-Deoxyadenosine (*N*-Bz)-3'-CEP, *M.W. 857.92*	$160.00	$320.00	$510.00	$810.00	$1,250.00	$2,800.00
ANP-8032	β-L-2'-Deoxycytidine (*N*-Bz)-3'-CEP, *M.W. 833.89*	$160.00	$320.00	$510.00	$810.00	$1,250.00	$2,800.00
ANP-8033	β-L-2'-Deoxyguanosine (*N*-iBu)-3'-CEP, *M.W. 839.90*	$160.00	$320.00	$510.00	$810.00	$1,250.00	$2,800.00
ANP-8034	β-L-Thymidine 3'-CEP, *M.W. 744.80*	$160.00	$320.00	$510.00	$810.00	$1,250.00	$2,800.00
ANP-8035	β-L-2'-Deoxycytidine (*N*-Ac)-3'-CEP, *M.W. 771.84*	$160.00	$320.00	$510.00	$810.00	$1,250.00	$2,800.00
ANP-8036	β-L-2'-Deoxyuridine-3'-CEP, *M.W. 730.79*	$160.00	$320.00	$510.00	$810.00	$1,250.00	$2,800.00

Mirror Image of Natural DNA, (ß-L-Deoxy Nucleoside Phosphoramidites) For The Synthesis of L-DNA

- β-L-deoxyribonucleoside polymers do not form double strands with complementary strands (Aseline, U. *et. al. Nucl. Acids. Res.* **1991**, *19*, 4067-4074).
- β-L-deoxyribonucleosides have high resistance to digestion by various nucleases.
- Synthetic 56-nucleotide β-L-DNA bind with Vasopressin and is an antagonist of Vasopressin (Williams, K. P. *et. al. Proc. Nat. Acad. Sci. USA* **1997**, *94*, 11285-11290).
- β-L-deoxyribonucleosides are being developed to bind with great specificity to antibodies and small biologically active molecules.
- β-L-DNA attached to primers for microarray design (Fig.1) and molecular beacon design (Fig 2).

Illustration of L-DNA for microarray design and attached molecular beacons:

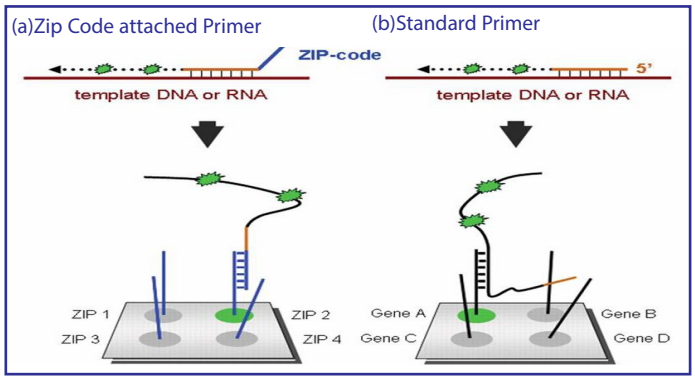

Fig. 1. Template Specfic Primer Extension & Labelling Illustration of advantages of L-DNA (Zip Code) attached Primers for PCR and Microarray (*Nucl. Acids Res.* **2007**, *35*, 7279-7287) Reproducid by the kind permission of Oxford Press, UK.

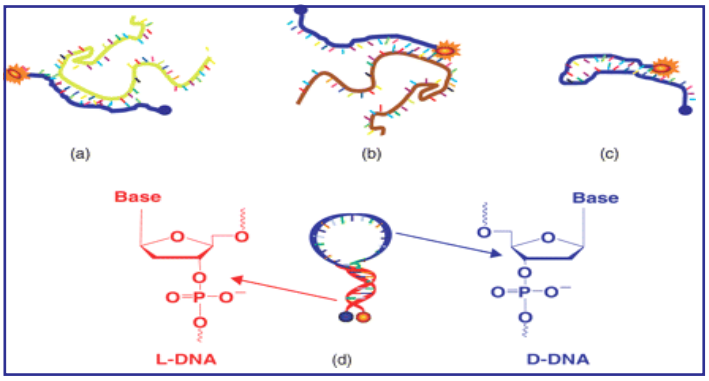

Fig. 2. Application of L-DNA attached molecular beacons (MB) avoiding non-specific binding (a-c). Design of Universal Microarray Platform. (*Nucl. Acids Res.* **2006**, *34*, 5101-5111) Reproduced by the kind permission of Oxford Press, UK.

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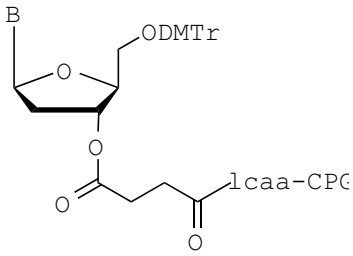


β-L-DNA lcaa Supports & Columns

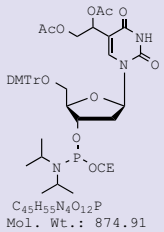
B	Protection	Catalog #
A	*N*-Bz	N-3521
C	*N*-Bz	N-3522
G	*N*-*i*Bu	N-3523
T	n/a	N-3524
C	*N*-Ac	N-3525

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 500 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-3521-05	ß-L-2'-Deoxyadenosine (*N*-Bz)-	500Å	$125	$290	$465	$120	$240	$240	$480
N-3521-10	3'-lcaa CPG	1000Å							
N-3522-05	ß-L-2'-Deoxycytidine (*N*-Bz)-	500Å	$125	$290	$465	$120	$240	$240	$480
N-3522-10	3'-lcaa CPG	1000Å							
N-3523-05	ß-L-2'-Deoxyguanosine (*N*-*i*Bu)-	500Å	$125	$290	$465	$120	$240	$240	$480
N-3523-10	3'-lcaa CPG	1000Å							
N-3524-05	ß-L-Thymidine	500Å	$125	$290	$465	$120	$240	$240	$480
N-3524-10	3'-lcaa CPG	1000Å							
N-3525-05	ß-L-2'-Deoxycytidine (*N*-Ac)-	500Å	$125	$290	$465	$120	$240	$240	$480
N-3525-10	3'-lcaa CPG	1000Å							

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 500 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-4062-05	ß-L-3'-Deoxycytidine (*N*-Bz)-	500Å	$125	$290	$465	$120	$240	$240	$480
N-4062-10	2'-lcaa CPG	1000Å							

5-(1,2-Diacetyloxyethyl)-2′-deoxyuridine-3′-CEP

5-Formyl (diacetyl)-2′-deoxyuridine-3′-CEP



Catalog#

ANP-6067

Pricing

$350.00 / 100 µmole
$895.00 / 250 mg
$1600.00 / 500 mg

Purity: 99% +

CAS No. 186086-49-7

5- Formyl Uridine phosphoramidite

It has been shown that 5-Formyl-2'-deoxy uridine is formed in DNA as a result of ionization radiation and several means such as gamma-ray irradiation and other oxidative damages[1,2]. The damaged DNA, due to formation of 5-formyl uracil, causes mutagenises. We now offer the 5-formyl dU-phosphoramidite for synthesis of DNA and modifications for the study and evaluation of various roles it plays and for diagnostic applications.

1. Bjelland,S., Eide,L.,Time, R.W., Store,R., Eftedal,I., Volden,G., Seeberg,E. *Biochemistry* **1995**, *34*,14758-14764.
2. Sugiyama, H., Matsuda, S., Kino, K., Zhang, Q-M., Yonei, S., Saito. I. *Tet. Lett.* **1996**, 9067-9070.

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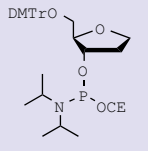
AbasicPhosphoramidite; dSpacer Phosphoramidite

(1,2-Dideoxy-D-ribose-3-CEP)



$C_{35}H_{45}N_2O_6P$
Mol. Wt.: 620

Catalog# ANP-7058

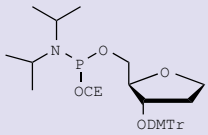
Pricing

$95.00 / 100 µmole
$330.00 / 250 mg
$594.00 / 500 mg

Purity: 98% +

CAS No. 129821-76-7

Reverse-Abasic-Phosporamidites; Reverse-dSpacer Phosphoramidite (1,2-Dideoxy-D-ribose 3-*O*-DMTr-5-CEP)



$C_{35}H_{45}N_2O_6P$
Mol. Wt.: 620.72

Catalog# ANP-1422

Pricing

$125.00 / 100 µmole
$425.00 / 250 mg
$765.00 / 500 mg

Purity: 98% +

Abasic Site (dSpacer amidite)

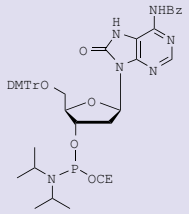
Oligonucleotides containing the chemically stable isostructural tetrahydrofuran analog of an abasic site are important reagents for studies related to depurination of oligonucleotides, which occurs quite frequently within the cell. For elegant publications regarding T_m values etc., see Pompizi, I., Haberli, A., Leumann, C. J. *Nucl. Acids Res.* **2000**, 28, 2702-2708, Aseline, U. *et. al. Nucl. Acids Res.* **1991**, 4067-4074.

Abasic (dspacer) Succinyl lcaa Supports &

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-1423-05	1,2-Dideoxy-D-ribose	500Å	$210	$170	$215	$340	$430
N-1423-10	5-*O*-DMTr-3-lcaa CPG	1000Å					
N-1424-05	1,2-Dideoxy-D-ribose	500Å	$290	$210	$300	$420	$600
N-1424-10	3-*O*-DMTr-5-lcaa CPG	1000Å					

8-Oxo-2′-deoxyadenosine-3′-CEP

(5′-O-DMTr-2′-deoxy-N-Bz-8-Oxo-adenosine-3′-CEP)



$C_{47}H_{52}N_7O_8P$
Mol. Wt.: 873.93

Catalog# ANP-9301

Pricing

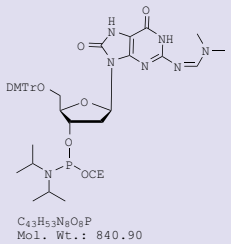
$130.00 / 100 µmole
$345.00 / 250 mg
$620.00 / 500 mg

Purity: 98% +

CAS No. 142979-42-8

8-Oxo-2′-deoxyguanosine-3′-CEP***

(5′-O-DMTr-2′-deoxy-*N*-DMF-8-Oxo-guanosine-3′-CEP)



$C_{43}H_{53}N_8O_8P$
Mol. Wt.: 840.90

Catalog# ANP-9311-2

Pricing

$154.00 / 100 µmole
$345.00 / 250 mg
$620.00 / 500 mg

Purity: 99% +

3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	100 mg Bulk CPG	1 g	0.2 µmole pack of 4 cols.	1.0 µmole	0.2 µmole pack of 10 cols.	1.0 µmole
N-5300-05	8-Oxo-2′-deoxyadenosine	500Å	$110	$780	$120	$145	$240	$290
N-5300-10	(*N*-Bz)-3′-lcaa CPG	1000Å						
N-9501-05	8-Oxo-2′-deoxyguanosine	500Å	$125	$900	$135	$170	$270	$340
N-9501-10	(*N*-DMF)-3′-lcaa CPG	1000Å						
N-9400-05	8-Oxo-2′-deoxyguanosine	500Å	$125	$900	$135	$170	$270	$340
N-9400-10	(*N*-Ac)-3′-lcaa CPG	1000Å						

***ANP-9311 With N-iBu protection has been discontinued.

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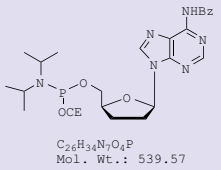
Phosphoramidites and Supports for Modified DNA Synthesis

2′,3′-Dideoxyadenosine (*N*-Bz)-5′-CEP



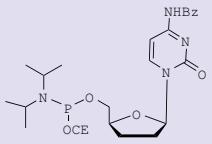
$C_{26}H_{34}N_7O_4P$
Mol. Wt.: 539.57

Catalog# DDN-7051

Pricing
$125.00 / 100 µmole
$540.00 / 250 mg
$950.00 / 500 mg

Purity: 98% +

2′,3′-Dideoxycytidine (*N*-Bz)-5′-CEP



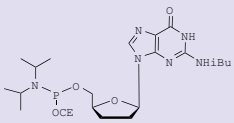
$C_{25}H_{34}N_5O_5P$
Mol. Wt.: 515.54

Catalog# DDN-7052

Pricing
$125.00 / 100 µmole
$540.00 / 250 mg
$950.00 / 500 mg

Purity: 98% +

2′,3′-Dideoxyguanosine (*N*-iBu)-5′-CEP



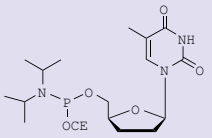
$C_{23}H_{36}N_7O_5P$
Mol. Wt.: 521.55

Catalog# DDN-7053

Pricing
$200.00 / 100 µmole
$800.00 / 250 mg
$1440.00 / 500 mg

Purity: 98% +

2′,3′-Dideoxy-thymidine-5′-CEP



$C_{19}H_{31}N_4O_5P$
Mol. Wt.: 426.4

Catalog# DDN-7054

Pricing
$125.00 / 100 µmole
$540.00 / 250 mg
$950.00 / 500 mg

Purity: 98% +

Dideoxy Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 10 cols. 0.2 µmole
N-7368-05	2',3'-Dideoxyadenosine (*N*-succinyl-lcaa CPG)	500Å	$250	$1,500	$180	$250
N-7369-05	2',3'-Dideoxycytidine (*N*-succinyl-lcaa CPG)	500Å	$250	$1,500	$180	$240

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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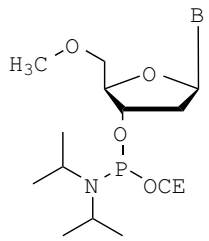
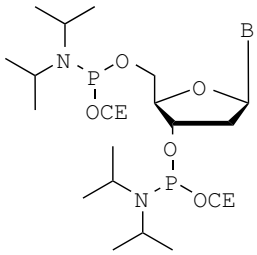


5′-O-Methyl DNA Phosphoramidites

B	Protection	Catalog#	CAS No.
A	*N*-Bz	ANP-5511	
C	*N*-Bz	ANP-5512	
G	*N*-*i*Bu	ANP-5513	
T	N/A	ANP-5514	149681-62-9

Catalog #	Product Name	100µmole	250mg	500mg
ANP-5511	5′-*O*-Methyl-2′-deoxyadenosine (*N*-Bz)-3′-CEP, *M.W. 569.6*	$250.00	$966.00	$1540.00
ANP-5512	5′-*O*-Methyl-2′-deoxycytidine (*N*-Bz)-3′-CEP, *M.W. 545.6*	$200.00	$815.00	$1310.00
ANP-5513	5′-*O*-Methyl-2′-deoxyguanosine (*N*-*i*Bu)-3′-CEP, *M.W. 551.58*	$200.00	$815.00	$1310.00
ANP-5514	5′-*O*-Methyl-thymidine-3′-CEP, *M.W. 456.47*	$200.00	$815.00	$1310.00



DNA 3′,5′-DiPhosphoramidites

B	Protection	Catalog#
A	*N*-Bz	ANP-7761
C	*N*-Ac	ANP-7762
G	*N*-*i*Bu	ANP-7763
T	N/A	ANP-7764

Catalog #	Product Name	100µmole	250mg	500mg
ANP-7761	3′,5′-Bis-CEP-2′-deoxyadenosine (*N*-Bz), *M.W. 755.78*	$155.00	$295.00	$495.00
ANP-7762	3′,5′-Bis-CEP-2′-deoxycytidine (*N*-Ac), *M.W. 669.69*	$155.00	$295.00	$495.00
ANP-7763	3′,5′-Bis-CEP-2′-deoxyguanosine (*N*-*i*Bu), *M.W. 737.77*	$155.00	$295.00	$495.00
ANP-7764	3′,5′-Bis-CEP-thymidine, *M.W. 642.6*	$155.00	$295.00	$495.00

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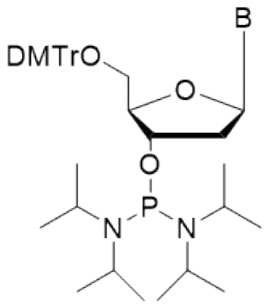


DNA 3'-Bis(diisopropylamino) Phosphoramidite

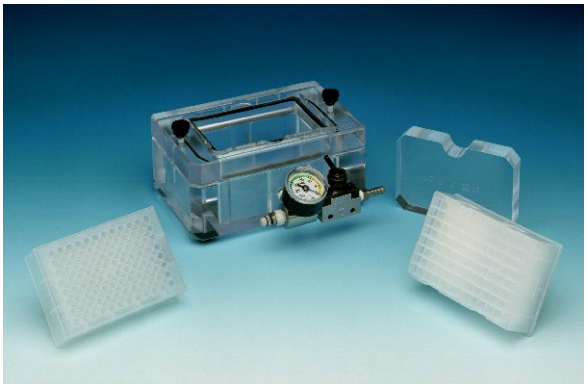
B	Protection	Catalog#
A	*N*-Bz	ANP-7681
C	*N*-Bz	ANP-7682
G	*N*-*i*Bu	ANP-7683
T	N/A	ANP-7766
C	*N*-*i*Bu	ANP-7686
C	*N*-Ac	ANP-7685

Catalog #	Product Name	100µmole	250mg	500mg
ANP-7681	2'-Deoxyadenosine (*N*-Bz)-3'-Bis(diisopropylamino) Phosphoramidite, *M.W. 888.06*	$170.00	$490.00	$880.00
ANP-7682	2'-Deoxycytidine (*N*-Bz)-3'-Bis(diisopropylamino) Phosphoramidite, *M.W. 864.04*	$170.00	$490.00	$880.00
ANP-7683	2'-Deoxyguanosine (*N*-*i*Bu)-3'-Bis(diisopropylamino) Phosphoramidite, *M.W. 870.04*	$170.00	$490.00	$880.00
ANP-7766	Thymidine-3'-Bis(diisopropylamino) Phosphoramidite, *M.W. 774.93*	$170.00	$490.00	$880.00
ANP-7686	2'-Deoxycytidine (*N*-*i*Bu)-3'-Bis(diisopropylamino) Phosphoramidite, *M.W. 830.02*	$170.00	$490.00	$880.00
ANP-7685	2'-Deoxycytidine (*N*-Ac)-3'-Bis(diisopropylamino) Phosphoramidite, *M.W. 801.97*	$170.00	$490.00	$880.00

DNA PURIFICATION

ChemGenes offers GENE-SYS 1 solid phase DMT-ON purification/extraction 96 well micropurifier to enable parallel purification of synthetic oligonucleotides for 5 OD (260nm) to 50 OD (260 nm) quantities. The 96 position GENE-SYS 1 accomodates the polypropylene 0.7 mL/well, 1.2 mL/well, 1.25 mL/well, and 2.25mL/ well removable well filter plates. The system charges crude oligos followed by washing and elution without a cumbersome valve network.

Catalog#	Product Name	Prices
GS-3249	Puri-Pak Plate™	$280.00
GS-1154	GeneSys-12 (Not Shown)	$550.00
GS-1158	GeneSys-24 (Not Shown)	$805.00
GS-8366	GeneSys Manifold for 96-Well Format GeneSys-1	$1,280.00
GS-3280	96 Well Collection plate (1 plate)	$15.00
GS-3280	96 Well Collection plate (Pack of 12)	$162.00
GS-8361	96 Well Oligonucleotide Synthesis Plate	$25.00



GeneSys-12 (catalog #GS-1154) purifies up to 12 oligos at the same time.
GeneSys-24 (catalog #GS-1158) purifies up to 24 oligos at the same time.

Puri-Pak Plate™ (catalog #3249) is a 96-Well purification extraction plate. Each well is filled with a unique packing material for oligo purication/cleanup. Each well is capable of the following:

- DMT-ON purification of up to 1 µmole scale per well, or
- DMT-OFF desalting of up to 25 OD per well

Genesys Manifold for the 96 Well format comes complete with a gasket for top and bottom collection plates. The system also includes a vacuum controller for low vacuum evacuation of the system for the 96-well solvent, buffer exchange, and dropwise collection of the purified oligo. This system has the advantage of simultaneous purification of large numbers of oligos in a 96-well purification format. The purification of the crude synthetic oligos can be achieved either by desalting of the crude synthetic oligo or by DMT-ON purification protocol of the crude synthetic DNA.

Besides the natural synthetic DNA oligonucleotides, the Puri-Pak Cartridges or the Puri-Pak plate can be used to purify terminal and nucleobase modified oligos, botin, other chromophore labeled oligos, 2'-*O*-Methyl-oligos, and phosphorothioate labeled oligos.

96-Well collection plates (catalog # GS3280) have a unique design in which the purification plate fits in effectively in each well for the collection plate and accommodates a 2 ml volume per well.

Puri-Pak Plate™ and Puri-Pak Cartridges™ are trade marks of ChemGenes Corporation.

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Drying Traps

DNA moisture traps are used for maintaining moisture-free environments in oligonucleotide synthesis. The use of these traps will generate super anhydrous conditions for high quality full length DNA/RNA. The traps are available in four different sizes: Small, Medium, Large, and Extra Large. DNA moisture traps are shipped fully activated in vacuum sealed foil packets and are ready for immediate use.

These traps allow highly effective drying of either phosphoramidite solution in acetonitrile, tetrazole solution in acetonitrile (activator solution), or anhydrous acetonitrile (used to make either phosphoramidite solutions or activator solutions).

In addition, the use of these traps in the acetonitrile bottles wash cycle in the DNA synthesizer will maintain a dry environment which results in consistently high coupling in the synthesis per cycle. The traps also restore the usability of "wet" acetonitrile (app. 250 ppm moisture content) by reducing the moisture content below 50 ppm.

Please see the data in the chart below for the selection of your specific application. As the chart indicates a small trap should be used for 10 ml acetonitrile solution and a large trap should be used for 500 ml acetonitrile solution.

Moisture Absorption Efficiency Chart:

Shows the water absorption of the traps of different sizes, as determined by coulometric analysis of acetonitrile spiked with water.

Quantity of Acetonitrile	Amount of Moisture present in "Wet" Solvent	Number of Traps required	Size of Trap	Time required to achieve 35-40 ppm or lower
10-50 ml	180-200 ppm	One	Small	24 Hours
50-100 ml	180-200 ppm	One	Medium	24 Hours
100-1000 ml	180-200 ppm	One	Large	24 Hours
1-4 liters	180-200 ppm	One	Extra Large	24 Hours

Prices

Catalog#	Size	Price for 5	Price for 10
DMT-1975	Small	$32.00	$58.00
DMT-1974	Medium	$34.00	$63.00
DMT-1973	Large	$40.00	$68.00
DMT-1972	Extra Large	$42.00	$78.00

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Puri-Pak Cartridges & Barrels

The **Puri-Pak**™ has been developed by ChemGenes to purify oligonucleotides by DMT-ON method and to desalt oligonucleotides which have been purified by ion-exchange HPLC or Gel Electrophoresis. They are very effective in producing high purity oligonucleotides after synthesis.

The **Puri-Pak cartridges**™ are suitable for the following applications:

- Low scale and also 1.0 µmol scale purification of synthetic oligonucleotides, modified synthetic oligonucleotides carrying amino-terminals, biotin, phosphorothioate oligonucleotides, and 2'-OMe oligonucleotides.
- Desalting of oligonucleotides.

Technical Details

The Puri-Pak columns are designed for efficient and fast purification of DMT-ON oligonucleotides as well as for desalting of oligonucleotides. They are recommended for single use where 25 OD units can be loaded per cartridge. The Puri-Pak columns can also efficiently purify crude oligonucleotides. Also, 5'-DMT-ON oligonucleotides can be separated cleanly from the shorter "fail" sequences.

After NH_3 deprotection of the oligonucleotide, the NH_3 solution containing the dissolved oligo can be loaded directly onto the Puri-Pak column. We recommend washing the crude oligo with Ether prior to removal of the cleaved base protecting groups. The oligo should then be dissolved in either water or 0.1M triethylammonium acetate (1-3ml) and loaded onto the Puri-Pak column.

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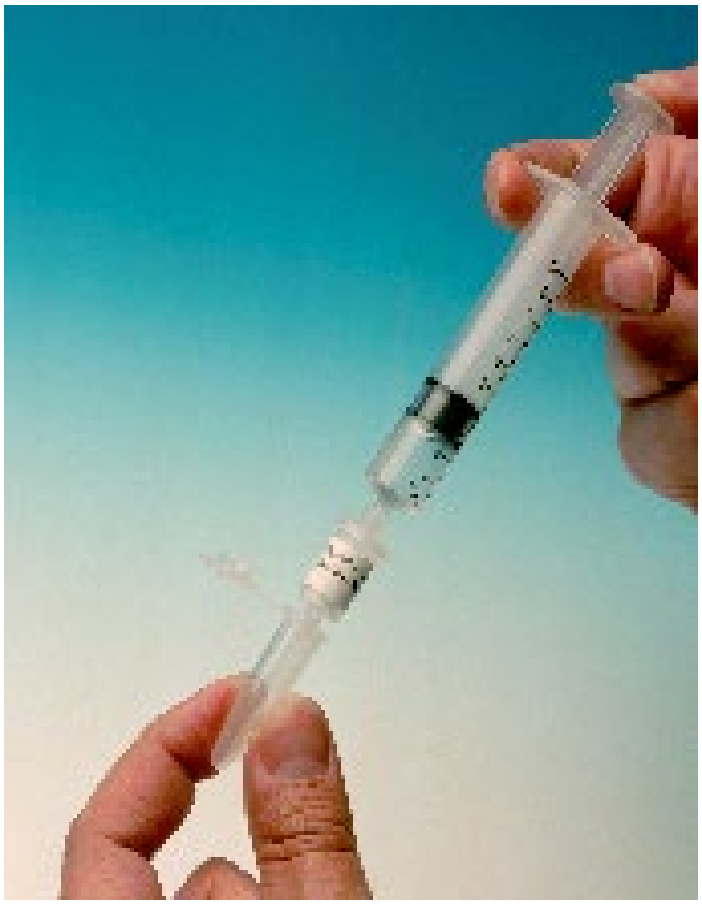
Catalog#	Product Name	Quantity	Price
CSS-3920-S	Cartridge	1	$6.50
CSS-3920-M	Cartridge	5	$30.00
CSS-3920-L	Cartridge	10	$55.00
CSS-3940-S	Barrel (4 ml)	1	$6.50
CSS-3940-M	Barrel (4 ml)	5	$30.00
CSS-3940-L	Barrel (4 ml)	10	$55.00
CSS-3960-S	Barrel (8 ml)	1	$12.00
CSS-3960-M	Barrel (8 ml)	10	$95.00
CSS-3960-L	Barrel (8 ml)	50	$450.00



RNA Synthesis

The importance of RNA has long been recognized in cellular processes. A major area of focus is on antisense RNA (Hëléne, C.; Toulme, J. *J. Biochim. Biophys. Acta* **1990**, *99*, 1049) and the role of catalytic RNA in splicing and ligation (Cech, T. R. *Science* **1987**, *236*, 1532; Guerrier-Takadac, N.; Altman, L. S. *Science* **1989**, *246*, 1578).

Chemical synthesis of defined sequence RNA is fundamental to develop and understand the role and application of RNA. The enzymatic approach using RNA polymerase is template dependant and therefore, is not a controlled sequence synthesis *(*Milligan, J. F.; Groebe, D. R.; Witherell, G. W.; Uhlenbeck, O. C. *Nucl. Acids Res.* **1987**, *15*, 8783).

Chemical synthesis of RNA has been perfected to the extent that long sequences, such as biologically active 76-mer tRNA and multi-milligram quantities can be produced efficiently (Gasparuto, D.; Livache, T.; Bazin, H.; Duplaa, A.; Guy, A.; Khorlin, A.; Molko, D.; Roget, A.; Teoule, R. *Nucl. Acids Res.* **1992**, *20*, 5159; Webster, K. R.; Shamoo, Y.; Königsberg, W.; Spicer, E. K.; *Biotechniques* **1991***, 11*, 658).

Small Interference RNA

Small interference RNA (siRNA) is one of the key discoveries in the field of RNA application. Short double stranded RNAs (dsRNAs), with a general chain length of 21-23 nts. and having a two nucleotide 3'-end overhang, mediate gene specific suppression of mammalian cells. siRNA guide endonucleolytic cleavage of the target RNA at a single site. The process is known as RNA interference (RNAi) *(*Fire, A.; Xu, S.; Montgomery, M. K.; kostas. S. A.; Driver, S. E.; Mello, C. C. *Nature* **1998**, *391*, 806-811). The dsRNA direct the degradation of target RNAs complementary to the siRNA sequence *(*Zamore, P.; Tuschl, T.; Sharp, P.; Bartel, D. *Cell* **2000**, *101*, 25-33; Elbashir, S.; Harborth, J., Weber, K.; Tuschl, T.; *Methods Finds. Exp.Clin. Pharmacol.* **2002**, *26*, 199-213).

The RNAi offers astronomical potentials for understanding and manipulating human diseases at the cellular level. Among the vast and rapidly exploding field of siRNA, some key developments in this area are prediction of natural regulatory mechanism in the field of cell biology and functional genomics. This is expected to result in gene based drug discovery. Gene control, gene knock down, and target validation are currently being persued with great vigor by a vast number of researchers worldwide.

Short dsRNA's can be best obtained by Chemical synthesis. ChemGenes specializes in producing the highest purity RNA monomers for studies and further developments in this field.

Use of ethylthio Tetrazole (ETT)

The use of ethylthio tetrazole has been shown to enhance coupling efficiency to 99.7% (Wasner, M.; Arion, D.; Borkow, G.; Noronha, A.; Uddin, A. H.; Parniak, M. A.; Damha, M. J. *Biochemistry* **1998**, *37*, 7478-7486).

Please see page 19-25 and 173 for ordering information.

Use of Benzylthio Tetrazole (BMT)

The use of Benzylthio tetrazole as activator in RNA synthesis has been shown to yet further enhance coupling efficiency. *(*Wasner, M.; Arion, D.; Borkow, G.; Noronha, A.; Uddin, A. H.; Parniak, M. A.; Damha, M. J. *Biochemistry* **1998**, *37*, 7478-7486).

Please see page 19-25 as Ancillary Reagent and page 173 for for bulk quantity supply for ordering information.

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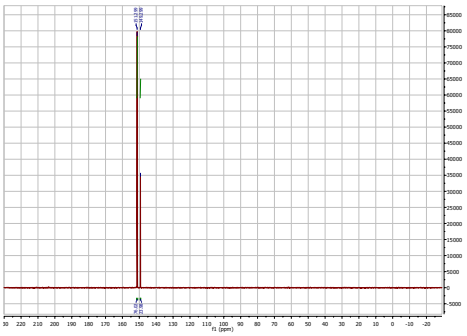
Quality Control Criteria for UltraPure RNA Phosphoramidites

^{31}P NMR

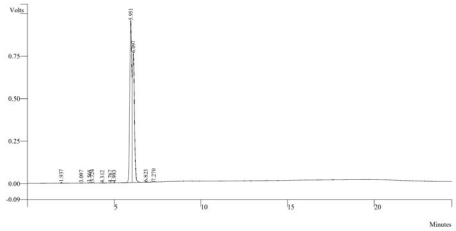
- Single or double peak
- Detection Limit: 0.08%



^{31}P NMR of 5′-O-DMTr -2′-O-TBDMS Guanosine ((N-iBu) 3′-CEP

HPLC

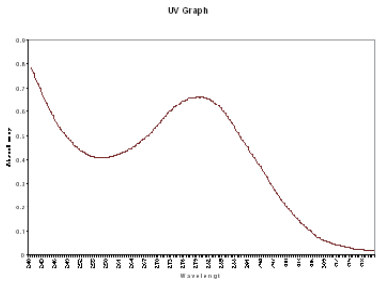
- Single or double peak
- Detection limit: 0.5%



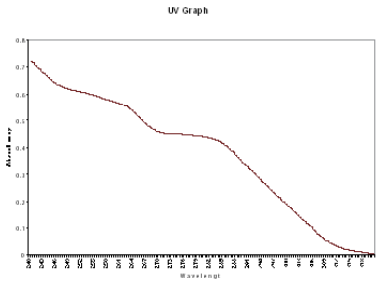
HPLC Graph of 5′-O-DMTr -2′-O-TBDMS Adenosin (N-Bz) 3′-CEP

UV Characterization

- Used to characterize the purine or pyrimidine structure and substituent



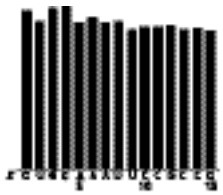
UV Spectrum of 2′-O-TBDMS-ribo Cytidine (N-Bz)-OP



UV Spectrum of 2′-O-TBDMS-ribo Cytidine (N-Bz)-OP

Coupling Test

- Greater than 98-98.5% stepwise coupling efficiency under set conditions specified in the data sheet supplied with compound



An example of a coupling efficiency profile for an RNA Phosphoramidite

Thin Layer Chromatography

- Two spots in most cases, or a single spot
- Detection Limit 0.5%
- No visible impurity observed

Solubility Test

- 200 mg of pure dry product in 1.0 mL of dry acetonitrile (H_2O Content < 0.004-0.005 g / 100 mL)

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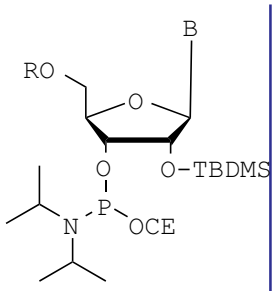
Phosphoramidites and Supports for Natural RNA Synthesis



Amidites for Natural RNA Synthesis with Standard Base Protection

R	B	Protection	Catalog#	CAS No.
DMTr	A	*N*-Bz	ANP-5671	104992-55-4
DMTr	C	*N*-Bz	ANP-5672	118380-84-0
DMTr	G	*N*-*i*Bu	ANP-5673	147201-04-5
DMTr	U	N/A	ANP-5674	118362-03-1
DMTr	A	*N*-Ac	ANP-4546	
DMTr	C	*N*-Ac	ANP-6676	121058-88-6
DMTr	G	*N*-Ac	ANP-4547	944138-03-8
DMTr	G	*N*-DMF	ANP-5678	149559-87-5
MMTr	A	*N*-Bz	ANP-5676	
MMTr	G	*N*-*i*Bu	ANP-5677	
MMTr	C	*N*-Bz	ANP-5685	
MMTr	U	N/A	ANP-5688	111160-33-9

Catalog#	Product name	250mg	500mg	1g	2g
ANP-5671	2'-*O*-TBDMS-Adenosine (*N*-Bz)-3'-CEP, *M.W. 988.19*	$32.00	$58.00	$105.00	$175.00
ANP-5672	2'-*O*-TBDMS-Cytidine (*N*-Bz)-3'-CEP, *M.W. 964.17*	$32.00	$58.00	$105.00	$175.00
ANP-5673	2'-*O*-TBDMS-Guanosine (*N*-*i*Bu)-3'-CEP, *M.W. 970.18*	$32.00	$58.00	$105.00	$175.00
ANP-5674	2'-*O*-TBDMS-Uridine-3'-CEP, *M.W. 861.05*	$32.00	$58.00	$105.00	$175.00
ANP-4546	2'-*O*-TBDMS-Adenosine (*N*-Ac)-3'-CEP, *M.W. 926.12*	$32.00	$58.00	$105.00	$175.00
ANP-6676	2'-*O*-TBDMS-Cytidine (*N*-Ac)-3'-CEP, *M.W. 902.10*	$32.00	$58.00	$105.00	$175.00
ANP-4547	2'-*O*-TBDMS-Guanosine (*N*-Ac)-3'-CEP, *M.W. 942.12*	$32.00	$58.00	$105.00	$175.00
ANP-5678	2'-*O*-TBDMS-Guanosine (*N*-DMF)-3'-CEP, *M.W. 955.16*	$32.00	$58.00	$105.00	$175.00
ANP-5676	MMTr-2'-*O*-TBDMS-Adenosine (*N*-Bz)-3'-CEP, *M.W. 958.17*	$32.00	$58.00	$105.00	$175.00
ANP-5677	MMTr-2'-*O*-TBDMS-Guanosine (*N*-*i*Bu)-3'-CEP, *M.W. 940.15*	$32.00	$58.00	$105.00	$175.00
ANP-5685	MMTr-2'-*O*-TBDMS-Cytidine (*N*-Bz)-3'-CEP, *M.W. 934.14*	$32.00	$58.00	$105.00	$175.00
ANP-5688	MMTr-2'-*O*-TBDMS-Uridine-3'-CEP, *M.W. 831.02*	$32.00	$58.00	$105.00	$175.00

Bulk quantities available : 10g, 100g, 500g,1000g - Please enquire prices

Advantages and Applications of 5′-MMTr in Purine Bases for Oligo Synthesis

Due to the use of 5-ethylthiotetrazole (in most DNA/RNA Synthesis protocols), which is more acidic in nature compared to 1-*H* tetrazole, the DMTr group from purine bases is removed to a certain extent in the coupling step during oligo synthesis, thereby causing undersired M+1 oligo growth.
Since the 5'-DMTr group in purine bases (A & G) cleave at much higher rate than 5'-MMTr group, the 5'-MMTr protected nucleoside phosphoramidites is preferable; thus, offering a minimal level of M+1 impurities.

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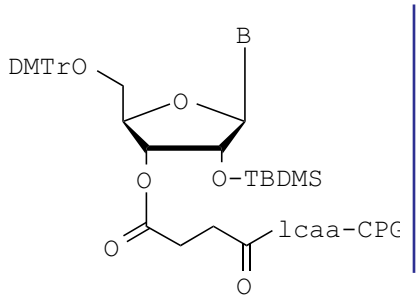
Phosphoramidites and Supports for Natural RNA Synthesis



Natural RNA Supports with Standard Base Protection

B	Protection	Catalog #
A	*N*-Bz	N-6101
C	*N*-Bz	N-6102
G	*N*-*i*Bu	N-6103
U	N/A	N-6104
C	*N*-Ac	N-6106
A	*N*-Ac	N-6681

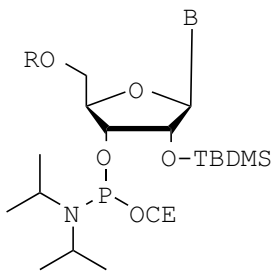
			Bulk CPG	pack of 4 cols.			each			pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	1 g	40 nmole	0.2 µmole	1.0 µmole	10 µmole	15 µmole	40 nmole	0.2 µmole	1.0 µmole
N-6101-05	2'-*O*-TBDMS-	500Å										
N-6101-10	Adenosine (*N*-Bz)-	1000Å	$25	$240	$50	$60	$85	$240	$355	$100	$120	$170
N-6101-20	3'-lcaa CPG	2000Å										
N-6102-05	2'-*O*-TBDMS-	500Å										
N-6102-10	Cytidine (*N*-Bz)-	1000Å	$25	$240	$50	$60	$85	$240	$355	$100	$120	$170
N-6102-20	3'-lcaa CPG	2000Å										
N-6103-05	2'-*O*-TBDMS-	500Å										
N-6103-10	Guanosine (*N*-*i*Bu)-	1000Å	$25	$240	$50	$60	$85	$240	$355	$100	$120	$170
N-6103-20	3'-lcaa CPG	2000Å										
N-6104-05	2'-*O*-TBDMS-Uridine-	500Å										
N-6104-10	3'-lcaa CPG	1000Å	$25	$240	$50	$60	$85	$240	$355	$100	$120	$170
N-6104-20		2000Å										
N-6106-05	2'-*O*-TBDMS-	500Å										
N-6106-10	Cytidine (*N*-Ac)-	1000Å	$25	$240	$50	$60	$85	$240	$355	$100	$120	$170
N-6106-20	3'-lcaa CPG	2000Å										
N-6681-05	2'-*O*-TBDMS-	500Å										
N-6681-10	Adenosine (*N*-Ac)-	1000Å	$25	$240	$50	$60	$85	$240	$355	$100	$120	$170
N-6681-20	3'-lcaa CPG	2000Å										

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

Oligo Synthesis Products

Phosphoramidites and Supports for Natural RNA Synthesis



Amidites for Natural RNA Synthesis with Labile (Mild) Base Protection

R	B	Protection	Catalog#	CAS No.
DMTr	A	*N*-PAC	ANP-6671	121058-86-4
DMTr	C	*N*-PAC	ANP-6672	
DMTr	G	*N*-PAC	ANP-6673	121058-87-5
MMTr	A	*N*-PAC	ANP-6678	
MMTr	G	*N*-PAC	ANP-6677	
DMTr	C	*N*-Ac	ANP-6676	121058-88-6
DMTr	G	*N*-Phenyl-Ac	ANP-5679	
DMTr	G	*N*-*i*prPAC	ANP-6679	
DMTr	C	*N*-*t*BPAC	ANP-6680	

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-6671	2'-*O*-TBDMS-Adenosine (*N*-PAC)-3'-CEP, *M.W. 1018.22*	$55.00	$95.00	$154.00	$246.00	$490.00
ANP-6672	2'-*O*-TBDMS-Cytidine (*N*-PAC)-3'-CEP, *M.W. 994.19*	$55.00	$95.00	$154.00	$246.00	$490.00
ANP-6673	2'-*O*-TBDMS-Guanosine (*N*-PAC)-3'-CEP, *M.W. 1034.22*	$55.00	$95.00	$154.00	$246.00	$490.00
ANP-6678	MMT-2'-*O*-TBDMS-Adenosine (*N*-PAC)-3'-CEP, *M.W. 988.19*	$55.00	$95.00	$154.00	$246.00	$490.00
ANP-6677	MMT-2'-*O*-TBDMS-Guanosine (*N*-PAC)-3'-CEP, *M.W. 1004.19*	$55.00	$95.00	$154.00	$246.00	$490.00
ANP-6676	2'-*O*-TBDMS-Cytidine (*N*-Ac)-3'-CEP, *M.W. 902.1*	$32.00	$58.00	$105.00	$175.00	$350.00
ANP-5679	2'-*O*-TBDMS-Guanosine (*N*-Phenyl-Ac)-3'-CEP, *M.W. 1018.22*	$55.00	$95.00	$154.00	$246.00	$490.00
ANP-6679	2'-*O*-TBDMS-Guanosine (*N*-*i*prPAC)-3'-CEP, *M.W. 1076.30*	$55.00	$95.00	$154.00	$246.00	$490.00
ANP-6680	2'-*O*-TBDMS-Cytidine (*N*-*t*BPAC)-3'-CEP, *M.W. 1050.30*	$55.00	$95.00	$154.00	$246.00	$490.00

The capping reagent phenoxy acetic anhydride is recommended for capping during oligonucleotide synthesis and is available from ChemGenes, please see pages 19-25.

For a description of the advantages of using 5'-MMTr nucleoside phosphoramidites, please see page #55.

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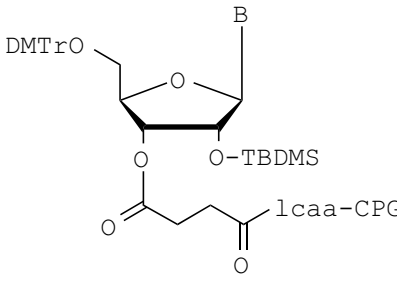


Natural RNA Supports with Labile (Mild) Base Protection

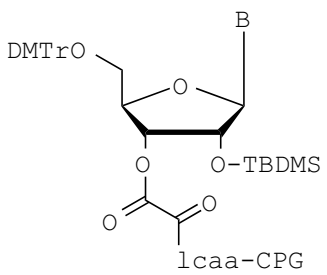
B	Protection	Catalog #
A	*N*-PAC	N-P6101
C	*N*-PAC	N-P6102
G	*N*-PAC	N-P6103
U	N/A	N-6104
A	*N*-*t*BPAC	N-6207
G	*N*-*t*BPAC	N-6208

			Bulk CPG		pack of 4 cols.			pack of 10 cols.		
Catalog #	Product Name	Pore Size	100 mg	1 g	40 nmole	0.2 µmole	1.0 µmole	40 nmole	0.2 µmole	1.0 µmole
N-P6101-05 N-P6101-10	2'-*O*-TBDMS-Adenosine (*N*-PAC)-3'-lcaa CPG	500Å 1000Å	$35	$245	$50	$65	$80	$100	$130	$160
N-P6102-05 N-P6102-10	2'-*O*-TBDMS-Cytidine (*N*-PAC)-3'-lcaa CPG	500Å 1000Å	$35	$245	$50	$65	$80	$100	$130	$160
N-P6103-05 N-P6103-10	2'-*O*-TBDMS-Guanosine (*N*-PAC)-3'-lcaa CPG	500Å 1000Å	$35	$245	$50	$65	$80	$100	$130	$160
N-6104-05 N-6104-10	2'-O-TBDMS-Uridine-3'-lcaa CPG	500Å 1000Å	$35	$245	$50	$65	$80	$100	$130	$160
N-6207-05 N-6207-10	2'-O-TBDMS-Adenosine (*N*-*t*BPAC)-3'-lcaa CPG	500Å 1000Å	$35	$245	$50	$65	$80	$100	$130	$160
N-6208-05 N-6208-10	2'-O-TBDMS-Guanosine (*N*-*t*BPAC)-3'-lcaa CPG	500Å 1000Å	$35	$245	$50	$65	$80	$100	$130	$160

www.chemgenes.com
Email: info@chemgenes.com

Oligo Synthesis Products

Phosphoramidites and Supports for Natural RNA Synthesis



Oxalyl RNA Supports with Labile Base (Mild) Protection for RNA Synthesis

B	Protection	Catalog #
A	*N*-PAC	N-5141
C	*N*-PAC	N-5142
G	*N*-PAC	N-5143
U	N/A	N-5144
G	*N*-*i*Bu	N-5166

			Bulk CPG		pack of 4 cols.			pack of 10 cols.		
Catalog #	Product Name	Pore Size	100 mg	1 g	40 nmole	0.2 µmole	1.0 µmole	40 nmole	0.2 µmole	1.0 µmole
N-5141-05	3'-Oxalyl-2'-*O*-TBDMS-adenosine (*N*-PAC)-3'-lcaa CPG	500Å	$48	$336	$70	$88	$106	$130	$166	$202
N-5142-05	3'-Oxalyl-2'-*O*-TBDMS-cytidine (*N*-PAC)-3'-lcaa CPG	500Å	$48	$336	$70	$88	$106	$130	$166	$202
N-5143-05	3'-Oxalyl-2'-*O*-TBDMS-guanosine (*N*-PAC)-3'-lcaa CPG	500Å	$48	$336	$70	$88	$106	$130	$166	$202
N-5144-05	3'-Oxalyl-2'-*O*-TBDMS-uridine-3'-lcaa CPG	500Å	$48	$336	$70	$88	$106	$130	$166	$202

Ammonia Free Oligo Deprotection Solution should be used under the following Conditions:

PAC-Protected nucleoside phosphoramidites must be used for efficient base deprotection using ammonia free oligo deprotection solution.

1. Oxalyl CPGs are cleaved using ammonia free oligo deprotection solution.
2. The standard succinyl CPGs will not adequately deprotect when using ammonia free oligo deprotection solution.
3. The oligonucleotide bound to solid support CPG after oligonucleotide synthesis is ether washed, air dried, and is placed in a vial with a septum cap.
4. Ammonia free oligo deprotection solution is added using a syringe. This reaction is typically done at 37°C for 24 hours.

Step by step protocol is provided with the COA.

Ammonia Free Oligo Deprotection Solution

Catalog#	Pricing
RN-1435	$35.00 / 25 ml
	$55.00 / 50 ml
	$75.00 / 100 ml

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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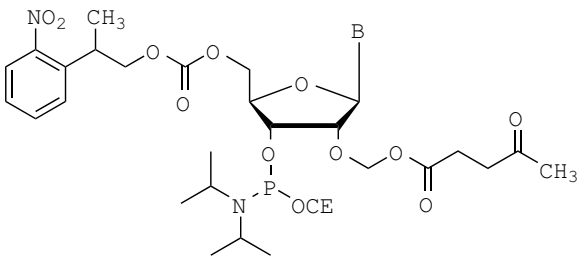


2′-Acetal Levulinyl Ester (ALE), 5′-O-NPPOC for Natural RNA Synthesis

B	Protection	Catalog#
A	*N*-PAC	ANP-3211
C	*N*-*i*Bu	ANP-3212
G	*N*-PAC	ANP-3213
U	N/A	ANP-3214

Catalog #	Product Name	100mg	250mg	500mg	1g
ANP-3211	2′-*O*-ALE-5′-*O*-NPPOC-Adenosine (*N*-PAC) 3′-CEP, *M.W. 936.90*	$178.00	$415.00	$664.00	$1,060.00
ANP-3212	2′-*O*-ALE-5′-*O*-NPPOC-Cytidine (*N*-*i*Bu) 3′-CEP, *M.W. 848.83*	$178.00	$415.00	$664.00	$1,060.00
ANP-3213	2′-*O*-ALE-5′-*O*-NPPOC-Guanosine (*N*-PAC) 3′-CEP, *M.W. 952.90*	$178.00	$415.00	$664.00	$1,060.00
ANP-3214	2′-*O*-ALE-5′-*O*-NPPOC-Uridine 3′-CEP, *M.W. 779.73*	$178.00	$415.00	$664.00	$1,060.00

* ALE:Acetal Levulinyl Ester
* NPPOC: 2-(2-Nitrophenyl) propyloxycarbonyl

2′-O-ALE-5′-O-NPPOC-Ribonucleoside Phosphoramides

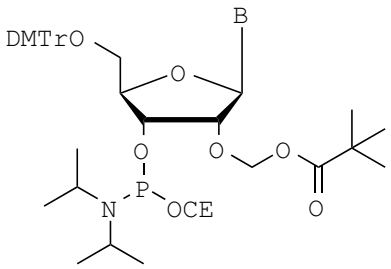
Novel 2′-O-ALE (Acetal-Levulinyl-Ester)-5′-O-NPPOC phosphoramidites are now available for R & D in exciting field of RNA microarray technology. RNA synthesis utilizing these monomers on a microarray (“chip”) has been successfully demonstrated (Lackey, J. G.; Mitra, D.; Somaza, M. M.; Cerrina, F.; Damha, M. J.; J. Am. Chem. Soc. 2009,131, 8496-8502).

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

Oligo Synthesis Products

Phosphoramidites and Supports for Natural RNA Synthesis



2′-O-Pivom-RNA Phosphoramidites for Natural RNA Synthesis

B	Protection	Catalog#
A	*N*-PAC	ANP-3216
C	*N*-Ac	ANP-3217
G	*N*-*i*pr-PAC	ANP-3218
U	N/A	ANP-3219

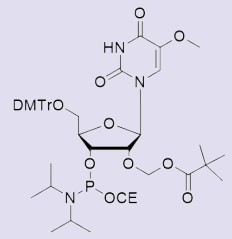
Catalog #	Product Name	250mg	500mg	1g	2g	5g	10g
ANP-3216	2′-*O*-Pivom-5′-*O*-DMTr-Adenosine (*N*-PAC)-3′-CEP, *M.W. 1018.10*	$65.00	$115.00	$205.00	$365.00	$820.00	$1,460.00
ANP-3217	2′-*O*-Pivom-5′-*O*-DMTr-Cytidine (*N*-Ac)-3′-CEP, *M.W. 901.98*	$65.00	$115.00	$205.00	$365.00	$820.00	$1,460.00
ANP-3218	2′-*O*-Pivom-5′-*O*-DMTr-Guanosine (*N*-*i*pr-PAC) 3′-CEP, *M.W. 1076.18*	$65.00	$115.00	$205.00	$365.00	$820.00	$1,460.00
ANP-3219	2′-*O*-Pivom-5′-*O*-DMTr-Uridine	$65.00	$115.00	$205.00	$365.00	$820.00	$1,460.00

* Pivom- Pivaloyloxymethyl

2′-O-Pivom-RNA Phosphoramidites

Single step mild base deprotection of RNA synthesized by 2′-O-Pivom (Pivaloyloxymethyl) technology is very attractive and become as efficient as DNA synthesis technology is now offering the 2′-O-Pivom amidites for R & D in RNA synthesis field (Lavergne, T.; Janim, M.; Dupoug, C.; Vasseuer, J. J.; Debart, F. "Chemical synthesis of RNA with base Labile 2′-O-(Pivaloyloxy methyl) protected Ribo nucleosides phosphoramidites" 2010, Curr Protoc Nucleic Acid Chem. Dec; Chapter 3:Unit3.19).

2′-O-PivOM-5-Methoxy-Uridine-3′-CEP



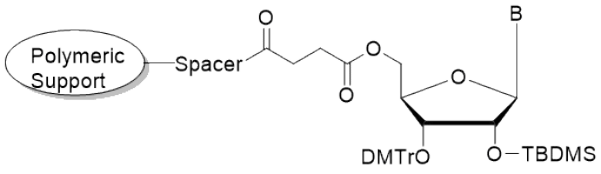
$C_{46}H_{59}N_4O_{12}P$
Mol. Wt.: 890.97

Catalog#

ANP-3781

Pricing

$360.00 / 100 mg
$810.00 / 250 mg
$1290.00 / 500 mg



High Loading 5' Succinyl Polymeric Supports for RNA Synthesis (loading greater than 150 µmol/g)

B	Protection	Catalog #
A	*N*-Bz	PMS-6321
C	*N*-Bz	PMS-6322
G	*N*-*i*Bu	PMS-6323
U	N/A	PMS-6324
C	*N*-Ac	PMS-6325

Catalog #	Product Name	Pore Size	Particle Size	1 g	2 g	5 g	10 g
PMS-6321-07	2′-*O*-TBDMS-Adenosine (*N*-Bz)-5′-succinyl Polymeric support	700-800Å	37-74 µm	$250	$390	$770	$1,220
PMS-6322-07	2′-*O*-TBDMS-Cytidine (*N*-Bz)-5′-succinyl Polymeric support	700-800Å	37-74 µm	$250	$390	$770	$1,220
PMS-6323-07	2′-*O*-TBDMS-Guanosine (*N*-*i*Bu) 5′-succinyl Polymeric support	700-800Å	37-74 µm	$250	$390	$770	$1,220
PMS-6324-07	2′-*O*-TBDMS-Uridine 5′-succinyl Polymeric support	700-800Å	37-74 µm	$250	$390	$770	$1,220
PMS-6325-07	2′-*O*-TBDMS-Cytidine (*N*-Ac) 5′-succinyl Polymeric support	700-800Å	37-74 µm	$250	$390	$770	$1,220

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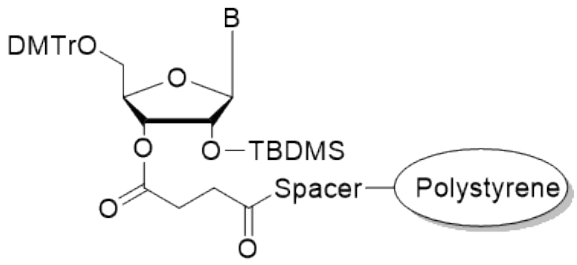
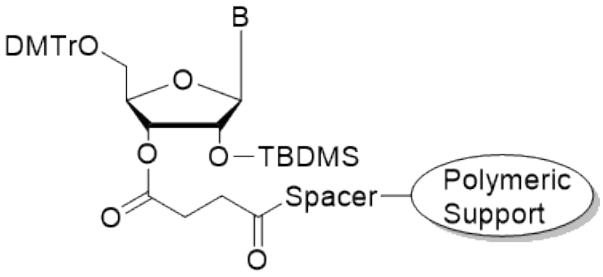


Succinyl Polystyrene Supports for RNA Synthesis

B	Protection	Catalog #
A	*N*-Bz	N-6211
C	*N*-Bz	N-6212
G	*N*-*i*Bu	N-6213
U	N/A	N-6214
C	*N*-Ac	N-6216

Catalog #	Product Name	Pore Size	Particle Size	Bulk Polystyrene Loading 30-40 µmol/g: 100 mg	1 g	pack of 4 cols.: 40 nmole	0.2 µmole	1.0 µmole	pack of 10 cols.: 40 nmole	0.2 µmole	1.0 µmole
N-6211-03	2'-*O*-TBDMS-Adenosine (*N*-Bz)-3'-succinyl Polystyrene	300Å	60-70 µm	$35	$245	$50	$65	$80	$100	$130	$160
N-6212-03	2'-*O*-TBDMS-Cytidine (*N*-Bz)-3'-succinyl Polystyrene	300Å	60-70 µm	$35	$245	$50	$65	$80	$100	$130	$160
N-6213-03	2'-*O*-TBDMS-Guanosine (*N*-*i*Bu) 3'-succinyl Polystyrene	300Å	60-70 µm	$35	$245	$50	$65	$80	$100	$130	$160
N-6214-03	2'-*O*-TBDMS-Uridine 3'-succinyl Polystyrene	300Å	60-70 µm	$35	$245	$50	$65	$80	$100	$130	$160
N-6216-03	2'-*O*-TBDMS-Cytidine (*N*-Ac) 3'-succinyl Polystyrene	300Å	60-70 µm	$35	$245	$50	$65	$80	$100	$130	$160

ChemGenes has developed unique Polystyrene Supportsand columns that have special appeal due to rigidity, swelling, and inertness towards moisture and water. Our supports have been checked for the synthesis of medium length oligos of varying sizes up to 40-mer.



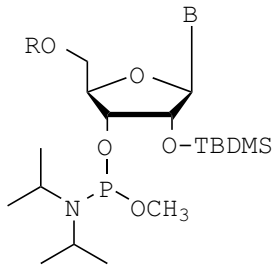
High Loading 3' Succinyl Polymeric Supports for RNA Synthesis (loading greater than 150 µmol/g)

B	Protection	Catalog #
A	*N*-Bz	PMS-7611
C	*N*-Bz	PMS-7612
G	*N*-*i*Bu	PMS-7613
U	N/A	PMS-7614
C	*N*-Ac	PMS-7615

Catalog #	Product Name	Pore Size	Particle Size	1 g	2 g	5 g	10 g
PMS-7611-07	2'-*O*-TBDMS-Adenosine (*N*-Bz)-3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$380	$760	$1,210
PMS-7612-07	2'-*O*-TBDMS-Cytidine (*N*-Bz)-3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$380	$760	$1,210
PMS-7613-07	2'-*O*-TBDMS-Guanosine (*N*-*i*Bu) 3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$380	$760	$1,210
PMS-7614-07	2'-*O*-TBDMS-Uridine 3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$380	$760	$1,210
PMS-7615-07	2'-*O*-TBDMS-Cytidine (*N*-Ac) 3'-succinyl Polymeric support	700-800Å	37-74 µm	$240	$380	$760	$1,210

Oligo Synthesis Products

Phosphoramidites and Supports for Natural RNA Synthesis



RNA Methyl Phosphoramidites with Standard Base Protection

R	B	Protection	Catalog#
DMTr	A	*N*-Bz	ANP-5691
DMTr	C	*N*-Bz	ANP-5692
DMTr	G	*N*-*i*Bu	ANP-5693
DMTr	U	N/A	ANP-5694
MMTr	A	*N*-Bz	ANP-5696
MMTr	G	*N*-*i*Bu	ANP-5697

Catalog#	Product name	250mg	500mg	1g	2g	5g	10g
ANP-5691	2'-*O*-TBDMS-adenosine (*N*-Bz)-3'-methyl-phosphoramidite, *M.W. 949.16*	$45.00	$680.00	$140.00	$250.00	$630.00	$1,130.00
ANP-5692	2'-*O*-TBDMS-cytidine (*N*-Bz)-3'-methyl-phosphoramidite, *M.W. 925.13*	$45.00	$680.00	$140.00	$250.00	$630.00	$1,130.00
ANP-5693	2'-*O*-TBDMS-guanosine (*N*-*i*Bu)-3'-methyl-phosphoramidite, *M.W. 901.11*	$45.00	$680.00	$140.00	$250.00	$630.00	$1,130.00
ANP-5694	2'-*O*-TBDMS-uridine-3'-P-*O*-methyl-phosphoramidite, *M.W. 822.01*	$45.00	$680.00	$140.00	$250.00	$630.00	$1,130.00
ANP-5696	5'-*O*-MMTr-2'-*O*-TBDMS-adenosine (*N*-Bz)-3'-methyl-phosphoramidite, *M.W. 919.13*	$45.00	$680.00	$140.00	$250.00	$630.00	$1,130.00
ANP-5697	5'-*O*-MMTr-2'-*O*-TBDMS-guanosine (*N*-*i*Bu)-3'-methyl-phosphoramidite, *M.W. 965.16*	$45.00	$680.00	$140.00	$250.00	$630.00	$1,130.00

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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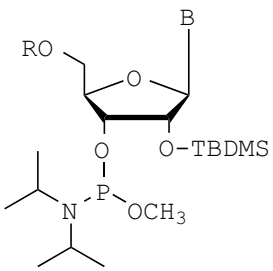


RNA Methyl Phosphoramidites with Labile (Mild) Base Protection

R	B	Protection	Catalog#
DMTr	A	*N*-PAC	ANP-3861
DMTr	C	*N*-PAC	ANP-3862
DMTr	G	*N*-PAC	ANP-3863
MMTr	A	*N*-PAC	ANP-3866
MMTr	G	*N*-PAC	ANP-3867

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-3861	2'-*O*-TBDMS-adenosine (*N*-PAC)-3'-methyl-phosphoramidite, *M.W. 979.18*	$90.00	$175.00	$335.00	$645.00	$1,550.00
ANP-3862	2'-*O*-TBDMS-cytidine (*N*-PAC)-3'-methyl-phosphoramidite, *M.W. 955.16*	$90.00	$175.00	$335.00	$645.00	$1,550.00
ANP-3863	2'-*O*-TBDMS-guanosine (*N*-PAC)-3'-methyl-phosphoramidite, *M.W. 995.18*	$90.00	$175.00	$335.00	$645.00	$1,550.00
ANP-3866	5'-*O*-MMTr-2'-*O*-TBDMS-adenosine (*N*-PAC)-3'-methyl-phosphoramidite, *M.W. 949.16*	$100.00	$190.00	$375.00	$735.00	$1,800.00
ANP-3867	5'-*O*-MMTr-2'-*O*-TBDMS-guanosine (*N*-PAC)-3'-methyl-phosphoramidite, *M.W. 965.16*	$100.00	$190.00	$375.00	$735.00	$1,800.00

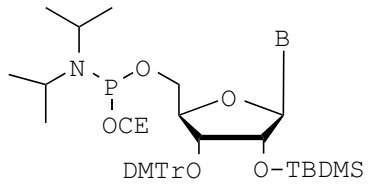
- For natural phosphodiester oligonucleotide, use thiophenol solution (catalog#: RN-1465 on pages 19-25) to thoroughly remove the P-methoxy group prior to ethanolic ammonia deprotection.
- To make P-methoxy phosphotriester oligonucleotides, use our ammonia free deprotection solution listed on page 101.

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

Oligo Synthesis Products

Phosphoramidites and Supports for Natural RNA Synthesis

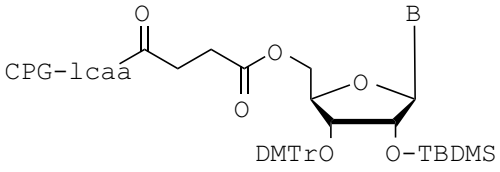


Reverse RNA Amidites for RNA Synthesis Reverse Direction (5′⟶3′)

B	Protection	Catalog#
A	*N*-Bz	ANP-3401
C	*N*-Bz	ANP-3402
C	*N*-Ac	ANP-3405
G	*N*-*i*Bu	ANP-3403
U	N/A	ANP-3404
G	*N*-*i*prPAC	ANP-3406

Catalog #	Product Name	250mg	500mg	1g	2g	5g	10g
ANP-3401	2′-*O*-TBDMS-Adenosine (*N*-Bz)-5′-CEP, *M.W. 988.19*	$41.00	$72.00	$105.00	$190.00	$405.00	$725.00
ANP-3402	2′-*O*-TBDMS-Cytidine (*N*-Bz) 5′-CEP, *M.W. 964.17*	$41.00	$72.00	$105.00	$190.00	$405.00	$725.00
ANP-3405	2′-*O*-TBDMS-Cytidine (*N*-Ac) 5′-CEP, *M.W. 902.10*	$41.00	$72.00	$105.00	$190.00	$405.00	$725.00
ANP-3403	2′-*O*-TBDMS-Guanosine (*N*-*i*Bu) 5′-CEP, *M.W. 970.18*	$41.00	$72.00	$105.00	$190.00	$405.00	$725.00
ANP-3404	2′-*O*-TBDMS-Uridine 5′-CEP, *M.W. 861.05*	$41.00	$72.00	$105.00	$190.00	$405.00	$725.00
ANP-3406	2′-*O*-TBDMS-Guanosine (*N*-iprPAC) 5′-CEP, *M.W. 1076.30*	$41.00	$72.00	$105.00	$190.00	$405.00	$725.00

Note: ANP-3406 has better solubility as compared to ANP-3403 in anhydrous acetonitrile.
Bulk quantities available : 10 g, 100 g, 500 g - Please enquire prices



Supports for Reverse RNA Synthesis (5′⟶3′)

B	Protection	Catalog #
A	*N*-Bz	N-6201
C	*N*-Bz	N-6202
C	*N*-Ac	N-6205
G	*N*-*i*Bu	N-6203
U	N/A	N-6204
G	N-*i*PrPAC	N-6209

				Bulk CPG		pack of 4 cols.			pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	1 g	40 nmole	0.2 umole	1.0 umole	40 nmole	0.2 umole	1.0 umole
N-6201-05 N-6201-10	2′-*O*-TBDMS-Adenosine (*N*-Bz)-5′-lcaa CPG	500Å 1000Å	$25	$240	$50	$60	$85	$100	$120	$170
N-6202-05 N-6202-10	2′-*O*-TBDMS-Cytidine (*N*-Bz)-5′-lcaa CPG	500Å 1000Å	$25	$240	$50	$60	$85	$100	$120	$170
N-6206-05 N-6206-10	2′-*O*-TBDMS-Cytidine (*N*-Ac) -5′-lcaa CPG	500Å 1000Å	$25	$240	$50	$60	$85	$100	$120	$170
N-6203-05 N-6203-10	2′-*O*-TBDMS-Guanosine (*N*-iBu)-5′-lcaa CPG	500Å 1000Å	$25	$240	$50	$60	$85	$100	$120	$170
N-6204-05 N-6204-10	2′-*O*-TBDMS-Uridine-5′-lcaa CPG	500Å 1000Å	$25	$240	$50	$60	$85	$100	$120	$170
N-6209-05 N-6209-10	2′-*O*-TBDMS-Guanosine-(*N*-iprPAC) 5′-lcaa CPG	500Å 1000Å	$25	$240	$50	$60	$85	$100	$120	$170

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Highlights of Reverse RNA Synthesis:[1-5]

High Purity Synthetic RNA Synthesis in Reverse Direction (5′→3′)

Leads to Smooth 3′-conjugation of functional macromolecules to Synthetic RNA. Synthesized oligo's are completely free of M+1 species.

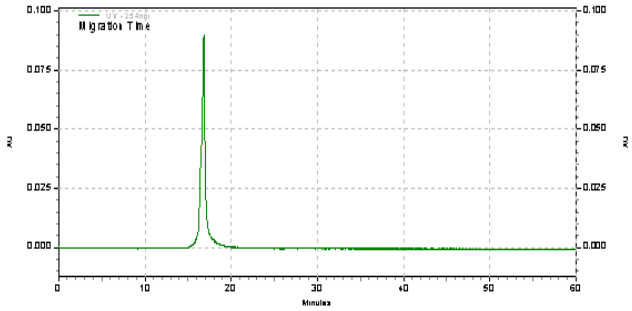

Figure 1. Capillary Gel Electrophoresis (CE) of 21-mer RNA with 3'-Cholesterol-TEG linker. Reverse direction (5'→3') synthesis and HPLC purification. 1 umole scale. Purity; 99.9%.

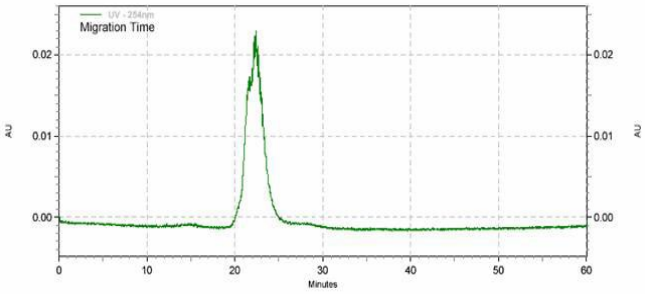

Figure 2a.Capillary Gel Electrophoresis (CE) of the HPLC purified 21-mer RNA with 3'-PEG (Poly ethyleneglycol; MW; 2000). Made by Reverse RNA synthesis method (5'→3'-direction). Expedite model 8909- 1 µmole scale. Purity; 100%

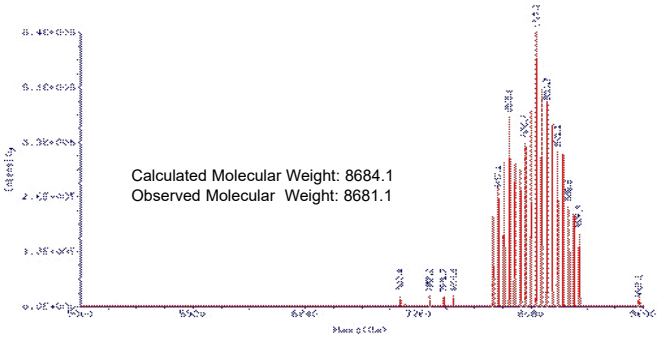

Figure. 2b. ESI /MS Spectral analysis of 21-mer RNA with 3'-PEG -2000 attachment.
The synthesis in (5'→3' direction). The PEG-2000 amidite (ChemGenes Cat# CLP-3119) as last step.

Note: There is a distribution of at least 14 PEG species of the RNA on both sides of the Calculated molecular weight with PEG-2000. Thus species from 8417.1 to 8945.3 are present with a molecular weight difference of a glycol unit (+/- 44).

Salient Features:

- Significant amount of (M-1) impurities are generated in the conventional method (3'→5'-direction).
- Insignificant amount of (M-1) impurities are generated in the reverse RNA synthesis (5'→3' direction).
- The purified RNA synthesized by reverse RNA synthesis are high purity.
- The features mentioned above is much more evident in the synthesis of 3'-end cholesterol attached RNA. It is easier to purify RNA with cholesterol at 3'-end synthesized by reverse RNA synthesis.
- M+1 impurities are essentially absent in the RNAs synthesized by reverse RNA synthesis method. It is postulated that in the molecule, ribonucleoside 3'-*O*-DMTr-2'-O-TBDMS-5'-phosphoramidites, the 3'-*O*-DMTr group is not cleaved by 5-ethylthiotetrazole during the coupling time of oligonucleotide chain extension.
- RNA containing macromolecules at the 3'-end which are generally inaccessible by conventional methods (3'→5') are easily synthesized by reverse RNA synthesis (5'→3' direction). These RNAs can be produced in high purity.
- 3'-PEG RNA (21-mer) was synthesized; after purification the oligonucleotide was essentially 100% pure.
- Shorter coupling time (~2 min) is used for Inverse RNA phosphoramidites coupling.

References:

1. Srivastava, S.C., Srivastava, N.P., RNA Synthesis in the Reverse Direction, **2011**, PCT Int. App., WO2011103468.
2. Srivastava, S.C., Srivastava, N.P., RNA Synthesis in the Reverse Direction, **2011**, PCT App., Pub. US20110137010.
3. Srivastava, S.C., Pandey, D., Srivastava, N., Bajpai, S.P., RNA Synthesis in the Reverse Direction, **2010**, WO2010027512.
4. Srivastava, S.C., Pandey, D., Srivastava, N., Bajpai, S.P., RNA Synthesis in the Reverse Direction, **2011**, *Current Protocols in Nucleic Acid Chemistry*; Unit3.20.

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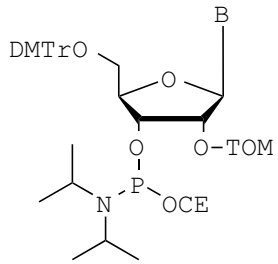
Oligo Synthesis Products

Phosphoramidites and Supports for Natural RNA Synthesis



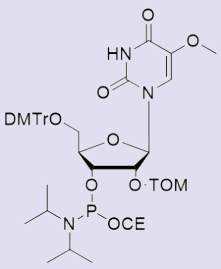
TOM Amidites for RNA Synthesis, Labile Base Protection

B	Protection	Catalog#	CAS No.
A	*N*-Ac	ANP-3201	253586-13-9
C	*N*-Ac	ANP-3202	253586-12-8
G	*N*-Ac	ANP-3203	253586-14-0
U	N/A	ANP-3205	220230-62-6

Catalog #	Product Name	250mg	500 mg	1g	5g	10g
ANP-3201	2'-*O*-TOM-Adenosine (*N*-Ac) 3'-CEP, *M.W. 998.23*	$55	$120	$245	$980	$1,630
ANP-3202	2'-*O*-TOM-Cytidine (*N*-Ac)- 3'-CEP, *M.W. 974.18*	$55	$120	$245	$980	$1,630
ANP-3203	2'-*O*-TOM-Guanosine (*N*-Ac)- 3'-CEP, *M.W. 1014.15*	$55	$120	$245	$980	$1,630
ANP-3205	2'-*O*-TOM-Uridine- 3'-CEP, *M.W. 932.75*	$55	$120	$245	$980	$1,630

TOM: Triisopropylsilyloxymethyl

2'-O-TOM-5-Methoxy-Uridine-3'-CEP

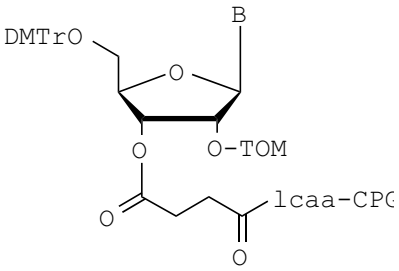


$C_{50}H_{71}N_4O_{11}PSi$
Mol.Wt.: 963.19

Catalog#
ANP-3799

Pricing
$315.00 / 100 mg
$700.00 / 250 mg
$1260.00 / 500 mg

Purity: 99% +



TOM RNA Supports with Labile Base Protection

B	Protection	Catalog #
A	*N*-Ac	N-32001
C	*N*-Ac	N-32002
G	*N*-Ac	N-32003
U	N/A	N-32005

			Bulk CPG		pack of 4 cols.			pack of 10 cols.		
Catalog #	Product Name	Pore Size	100 mg	1 g	40 nmole	0.2 umole	1.0 umole	40 nmole	0.2 umole	1.0 umole
N-3201-05 N-3201-10	2'-*O*-TOM-Adenosine (*N*-Ac)- 3'-lcaa-CPG	500Å 1000Å	$35	$245	$50	$65	$80	$100	$130	$160
N-3202-05 N-3202-10	2'-*O*-TOM-Cytidine (*N*-Ac)- 3'-lcaa-CPG	500Å 1000Å	$35	$245	$50	$65	$80	$100	$130	$160
N-3203-05 N-3203-10	2'-*O*-TOM-Guanosine (*N*-Ac)- 3'-lcaa-CPG	500Å 1000Å	$35	$245	$50	$65	$80	$100	$130	$160
N-3205-05 N-3205-10	2'-*O*-TOM-Uridine- 3'-lcaa CPG	500Å 1000Å	$25	$240	$50	$60	$85	$100	$120	$170

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Highlights of TOM-Amidites in RNA Synthesis

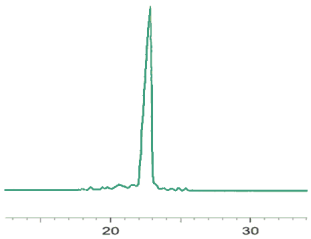
2′-O-Triisopropylsilyl-oxy methyl amidites, produced under GMP guidelines.

Highly suitable for large scale therapeutic grade RNA synthesis, long RNA sequences, aptamers and biologically significant RNA molicules.

ChemGenes has perfected technology to produce bulk quantities (100g to kilogram scale batches) of TOM amidites at good prices.

The following superior qualities makes TOM amidites desirable for therapeutic oligonucleotide production.

- The synthesis resembles DNA Synthesis like couplig efficiency.
- Coupling efficiency consistently greater than 98% per step.
- Highest coupling efficiency per step, due to lower steric hindrance. Fast coupling time (2-4 minutes for differnt scale of synthesis), and complete absence of 3'-impurities, either manufactured TOM amidites, 2' to 3'-migration during oligo synthesis or during work up, results in high purity oligonucleotiodes.
- Short deprotection time for *N*-protecting group with a time of 4-6 hours depending on chain length and with liberal amount of water. Labile Base protecting groups used are (*N*-Ac-A; *N*-Ac-C and *N*-Ac-G). Easy removal of TOM protecting group is achieved under mild condtions and in significantly excess amount of water without side effects.
- No formadehyde adduct formation occurs in the oligos made by using TOM amidite chemistry and after single Ion-Exchange purification, analyzed by ESI/MS spectral data. None of the Mass spectral data showed peak corresponding to hydroxymethyl group (CH_2-OH) either as single unit or multiple units, mass corresponding to 30 or its multiples.
- Study of the quality of oligonucleotides synthesized using TOM amidites showed that the RNA oligos synthesized using TOM amidites were found to result in far superior quality after single Ion-Exchange purification and analyzed by CE (capillary Gel) and ESI/MS.
- There is an overall time reduction using TOM amidite chemistry. All the steps, *viz.*, base deprotection, TOM deprotection and ease of purification. Besides high yield the process leads to high purity as well.

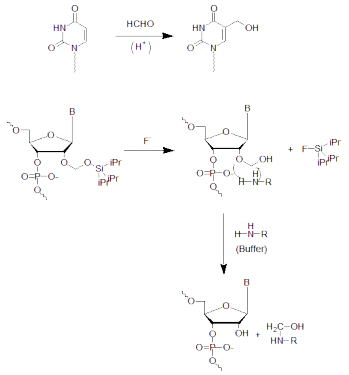


CE Analysis:Capillary gel (CE) Of HPLC Purified 12-mer RNA (12μmole Scale) Using 2′-O-TOM amidites

Studies to Confirm Absence of Formaldehyde Adduct formation: During the loss of silyl and generation of formaldehyde and C-5 formylation or *N*-formylation of nucleoside bases does not occur due to presence of aq. TRIS buffer, pH 7.4, which captures all the formaldehyde formed and prevents any base modification as analyzed by ESI/MS spectral data. None of the Mass spectral data showed any peak corresponding to hydroxymethyl group (CH_2-OH) either as single unit or multiple units, with mass corresponding to 30 or its multiples (Fig.1a and Fig.1b).
adduct is seen (see the ESI/MS data)

ESI/MS data is presented here to substantiate clean RNA synthesis. No peak corresponding to the formaldehyde adduct (molecular ion + 30 Dalton) has been detected.

It is likely that formaldehyde formed after the cleavage is captured by buffer, which is mildly basic, pH 7.4. Beacuse of nature of formaldehyde addition to pyrimidines (see Scheme below), pH 7.4 is recommended during desilylation step.



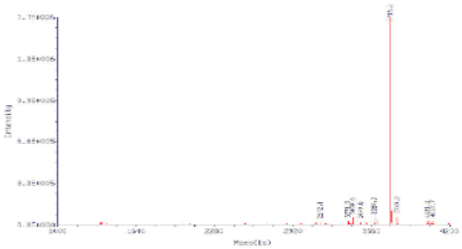


Fig. 1a: Shows correct and clean Mass. No M+30 or multiples of M+30 are seen.

Observed: MW: 3715.3
Target: MW: 3715.3

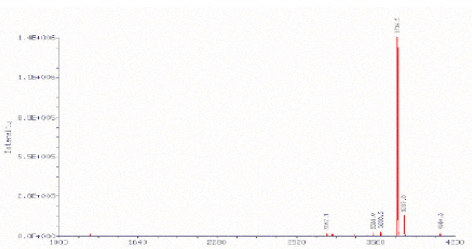


Fig. 1b: Shows correct and clean Mass. No M+30 or multiples of M+30 are seen.

Observed: MW: 3734.5
Target: MW: 3734.5

References :

1. TOM Amidites are intellectual property of Qiagen Inc., Germantown, MD and licensed to ChemGenes Corp. for sales in Therapeutics RNA market.
2. Pitsch, S.; Weiss, P. A.; Jenny, L.; Stutz, A.; Wu, X. *Helv. Chem. Acta.* **2001**, *84,* 3773-3795.
3. TOM protecting group chemistry is covered by US Patent No. 5,986,084. ChemGenes Corp. holds license agreement with Qiagen Inc. for worldwide supply for Therapeutics market.

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Phosphoramidites and Supports for Modified RNA Synthesis

Summary of Phosphoramidites and Supports for Synthesis of Modified RNA

ChemGenes produces a wide range of modified RNA phosphoramidites and supports.

Our key modifications are summarized below:

Unnatural 2',5'-Linkage amidites

N^3-Methyl & N^3-Thiobenzylethyl pyrimidine amidites
Includes N^3-Methyl-uridine, N^3-Methyl-ribothymidine & N^3-Thiobenzoylethyl-uridine Amidites & Supports.

Inosine, *ribo*-Thymidine, 5-Methyl Cytidine and 2, 2'-Anhydro Uridine Amidites & Supports

N^6-Substituted Purine Amitides & Supports
Includes N^6-Benzyl-adenosine and N^6-Isopentenyl-adenosine Amidites & Supports.

Puromycin (3'-deoxy *N, N'*-dimethyl-3'-[(*O*-methyl-L-tyrosyl)amino] adenosine) CPG

N^4-Ethyl-Cytidine, 4-Thio-U and Pyrimidine-2-one (Zebularine) Products

2'-Fluoro and 2'-Amino Amidites & Supports
Includes 2'-Fluoro-C, 2'-Fluoro-U, 2'-Amino-C, 2'-Amino-U

2'-Amino-adenosine, Purine-riboside, & 2-Amino-purine-riboside

5-Halo pyrimidines & 8-Halo purine amidites & Supports
Includes 5-Bromo-cytidine, 5-Bromo-uridine, 5-Iodo-cytidine, 5-Iodo-uridine , 5-Fluoro-uridine, and 8-Bromo-adenosine

7-Deaza Amidites & Supports
7-Deaza-7-Modified Amidites & Supports

Iso-C and iso-G Amidites & Supports

2',3'-*O*-Diacetyl-guanosine & Uridine

L-RNA Amidites & Supports

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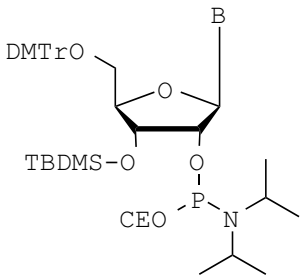

Unnatural 2′,5′ Linkage RNA Amidites with Standard Base Protection

B	Protection	Catalog#	CAS No.
A	*N*-Bz	ANP-5681	
C	*N*-Bz	ANP-5682	
G	*N*-*i*Bu	ANP-5683	
U	N/A	ANP-5684	129451-77-0
C	*N*-Ac	ANP-5686	
I	N/A	ANP-5687	

Catalog#	Product name	250mg	500mg	1g	2g	5g
ANP-5681	3′-*O*-TBDMS-Adenosine (*N*-Bz)-2′-CEP, *M.W. 988.19*	$80.00	$150.00	$290.00	$510.00	$1,140.00
ANP-5682	3′-*O*-TBDMS-Cytidine (*N*-Bz)-2′-CEP, *M.W. 964.17*	$80.00	$150.00	$290.00	$510.00	$1,140.00
ANP-5683	3′-*O*-TBDMS-Guanosine (*N*-*i*Bu)-2′-CEP, *M.W. 970.18*	$80.00	$150.00	$290.00	$510.00	$1,140.00
ANP-5684	3′-*O*-TBDMS-Uridine-2′-CEP, *M.W. 861.05*	$80.00	$150.00	$290.00	$510.00	$1,140.00
ANP-5686	3′-*O*-TBDMS-Cytidine (*N*-Ac)-2′-CEP, *M.W. 902.10*	$80.00	$150.00	$290.00	$510.00	$1,140.00
ANP-5687	3′-*O*-TBDMS-Inosine-2′-CEP, *M.W. 885.07*	$80.00	$150.00	$290.00	$510.00	$1,140.00

For Supports, see page# 56

*Currently we are offering 2′-O-TBDMS-Succinyl Icaa CPG Products instead of 3′-O-TBDMS-Succinyl Icaa CPG which we offered in the past.

Synthesis of Unnatural RNA 2′-5′-linked Oligos

ChemGenes offers a wide variety of 3′-*O*-TBDMS protected ribonucleoside phosphoramidites that allow the synthesis of 2′-5′-linked oligos. The low molecular weight oligomer 5′-*O*-triphosphoryl adenylyl-(2′-5′)-adenylyl-(2′-5′)-adenosine (pppA2′p5′A2′p5′A) activates the latent endo-ribonuclease RNase L, which subsequently cleaves the messenger and ribosomal RNAs (Charubala, R.; Uhlmann, E.; Himmelsbach, F.; Pfleiderer, W. *Helv. Chem. Acta* **1987**, *70*, 2028).

Such oligonucleotides are very useful to determine their exact biological role, to extend their biological half life, or to alter the biological activity of the core structure (A2′p5′A2′p5′A) (Jamoulle, J. C.; Imai, J.; Lesiak, K.; Torrence, P. F. *Biochemistry*, **1984**, *23*, 3063).

2′,5′-linked synthetic RNA sequences consisting of mixed bases and their duplexes are not substrates of the enzyme RNase H (Escherichia coli or HIV-1 reverse transcriptase). However, they can inhibit the RNaseH mediated cleavage of a natural DNA/RNA substrate (Wasner, M.; Arion, D.; Borkow, G.; Noronha, A.; Uddin, H. J.; Parniak, M. A.; Damha, M. J. *Biochemistry* **1998**, *37*, 7478-7486).

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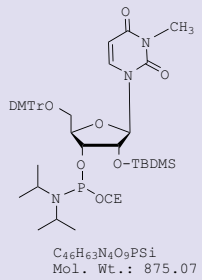
Oligo Synthesis Products

Phosphoramidites and Supports for Modified RNA Synthesis

N^3-Methyl-2′-*O*-TBDMS-Uridine-3′-CEP

(N^3-Methyl-2′-O-TBDMS-Uridine-3′-CEP)



$C_{46}H_{63}N_4O_9PSi$
Mol. Wt.: 875.07

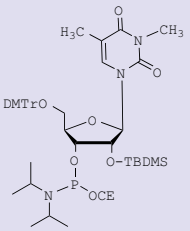
Catalog# ANP-7451

Pricing
$160.00 / 100 µmole
$410.00 / 250 mg
$740.00 / 500 mg

Purity: 98% +

N^3-Methyl-2′-*O*-TBDMS-RiboThymidine-3′-CEP

(N^3-Methyl-2′-O-TBDMS-ribo-thymidine-3′-CEP)



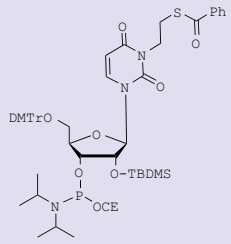
$C_{47}H_{65}N_4O_9PSi$
Mol. Wt.: 889.10

Catalog# ANP-7461

Pricing
$200.00 / 100 µmole
$500.00 / 250 mg
$900.00 / 500 mg

Purity: 98% +

N^3-Thiobenzoylethyl-2′-*O*-TBDMS-Uridine-3′-CEP



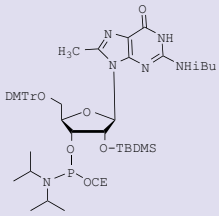
$C_{54}H_{69}N_4O_{10}PSSi$
Mol. Wt.: 1025.27

Catalog# ANP-7441

Pricing
$300.00 / 100 µmole
$620.00 / 250 mg
$1115.00 / 500 mg

Purity: 98% +

8-Methyl-2′-O-TBDMS-Guanosine-3′-CEP



$C_{51}H_{70}N_7O_9PSi$
Mol. Wt.: 984.20

Catalog# ANP-6274

Pricing
$350.00 / 100 µmole
$795.00 / 250 mg
$1430.00 / 500 mg

Purity: 99% +

3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9814-05 N-9814-10	N^3-Methyl-2′-*O*-TBDMS-uridine-3′-lcaa CPG	500Å 1000Å	$75	$475	$90	$120	$180	$240
N-9816-05 N-9816-10	N^3-Methyl-2′-*O*-TBDMS--thymidine-3′-lcaa CPG	500Å 1000Å	$75	$475	$90	$120	$180	$240
N-9828-05 N-9828-10	N^3-Thiobenzoylethyl-2′-*O*-TBDMS-Uridine-3′-lcaa CPG	500Å 1000Å	$110	$475	$120	$165	$220	$340
N-9909-05 N-9909-10	8-Methyl-2′-*O*-TBDMS-guanosine (*N*-iBu)-3′-lcaa CPG	500Å 1000Å	$110	$475	$120	$165	$220	$340

N^3-Methyl-uridine and N^3-Methyl-thymidine are the results of chemical carcinogens on DNA/RNA. In general, alkylation products are formed at the ring-nitrogen atoms and the exocyclic oxygen atoms of all four bases as well as at the oxygen atoms of the internucleotide phosphate bonds. Such adducts can initiate neoplastic transformations (Singer, B., Kusmierek, J. T., *Ann. Rev. Biochem.* **1982**, *52*, 522; Saffhill, R., Margison, G. P., O'Connor, P. J. *Biochim. Biophys. Acta* **1985**, *823*, 111).

The individual alkylation products are thought to possess different mutagenic and carcinogenic properties (*Nucl. Acids Res.* **1992**, *20*, 6471).

N^3-Methyl-uridine phosphoramidite and N^3-Methyl-thymidine phosphoramidite are currently available from ChemGenes for incorporation into RNA/DNA to further study the biochemical nature of these oligonucleotides. It is important to gain an understanding of these ring-nitrogen modified bases for eventual damage repairs.

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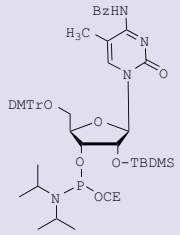
5-Methyl-2′-*O*-TBDMS-Cytidine-3′-CEP

(5′-O-DMTr-5-Methyl-2′-O-TBDMS-cytidine (N-Bz)-3′-CEP)



$C_{53}H_{68}N_5O_9PSi$
Mol. Wt.: 978.1

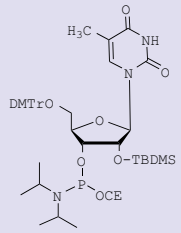
Catalog# ANP-5675

Pricing
$120.00 / 100 µmole
$290.00 / 250 mg
$520.00 / 500 mg

Purity: 98% +

2′-*O*-TBDMS-RiboThymidine-3′-CEP

(5′-O-DMTr-2′-O-TBDMS-thymidine-3′-CEP)



$C_{46}H_{63}N_4O_9PSi$
Mol. Wt.: 875.07

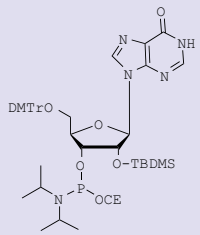
Catalog# ANP-7511

Pricing
$185.00 / 100 µmole
$480.00 / 250 mg
$864.00 / 500 mg

Purity: 98% +

2′-*O*-TBDMS-Inosine-3′-CEP

(5′-O-DMTr-2′-O-TBDMS-inosine-3′-CEP)



$C_{46}H_{61}N_6O_8PSi$
Mol. Wt.: 885.07

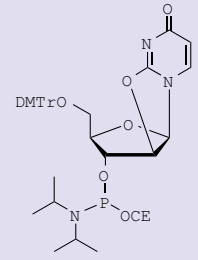
Catalog# ANP-5680

Pricing
$280.00 / 250 mg
$450.00 / 500 mg
$720.00 / 1 g

Purity: 98% +

2,2′-Anhydro-Uridine-3′-CEP

(5′-O-DMTr-2,2′-Anhydro-uridine-3′-CEP)



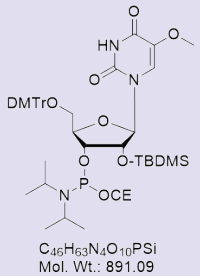
$C_{39}H_{45}N_4O_8P$
Mol. Wt.: 728.77

Catalog# ANP-4876

Pricing
$165.00 / 100 µmole
$510.00 / 250 mg
$920.00 / 500 mg

Purity: 98% +

2'-O-TBDMS-5-Methoxy Uridine-3′-CEP



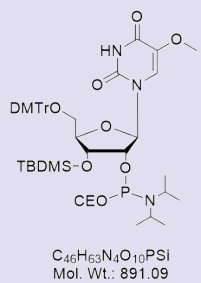
$C_{46}H_{63}N_4O_{10}PSi$
Mol. Wt.: 891.09

Catalog# ANP-3782

Pricing
$360.00 / 100 mg
$610.00 / 250 mg
$1290.00 / 500 mg

Purity: 98% +

3'-O-TBDMS-5-Methoxy Uridine-2′-CEP



$C_{46}H_{63}N_4O_{10}PSi$
Mol. Wt.: 891.09

Catalog# ANP-3783

Pricing
$330.00 / 100 mg
$710.00 / 250 mg
$1290.00 / 500 mg

Purity: 98% +

3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9822-05 N-9822-10	5-Methyl-2′-*O*-TBDMS-cytidine (*N*-Bz)-3′-lcaa CPG	500Å 1000Å	$60	$475	$75	$110	$150	$210
N-8477-05 N-8477-10	2′-*O*-TBDMS-ribothymidine-3′-lcaa CPG	500Å 1000Å	$110	$545	$75	$90	$150	$180
N-8370-05 N-8370-10	2′-*O*-TBDMS-inosine-3′-lcaa CPG	500Å 1000Å	$75	$425	$50	$65	$100	$130
N-9810-05 N-9810-10	2,2′-Anhydro-uridine-3′-lcaa CPG	500Å 1000Å	$60	$485	$60	$75	$120	$150

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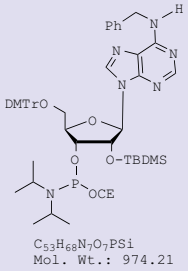
N^6-Benzyl-2′-*O*-TBDMS-adenosine-3′-CEP
(N^6-Benzyl-2′-O-TBDMS-adenosine-3′-CEP)



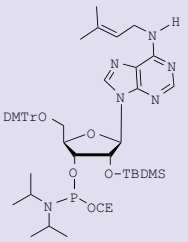
$C_{53}H_{68}N_7O_7PSi$
Mol. Wt.: 974.21

Catalog# ANP-8614

Pricing
$365.00 / 100 µmole
$790.00 / 250 mg
$1260.00 / 500 mg

Purity: 98% +

N^6-Isopentenyl-2′-*O*-TBDMS-adenosine-3′-CEP
((N^6-isopentenyl-2′-O-TBDMS-adenosine-3′-CEP)



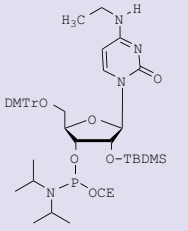
$C_{51}H_{70}N_7O_7PSi$
Mol. Wt.: 952.20

Catalog# ANP-8615

Pricing
$365.00 / 100 µmole
$790.00 / 250 mg
$1260.00 / 500 mg

Purity: 98% +

N^4-Ethyl-2′-*O*-TBDMS-cytidine-3′-CEP



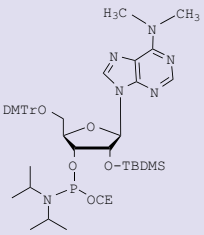
$C_{47}H_{66}N_5O_8PSi$
Mol. Wt.: 888.12

Catalog# ANP-4165

Pricing
$265.00 / 100 µmole
$594.00 / 250 mg
$952.00 / 500 mg

Purity: 98% +

N^6,N^6-Dimethyl-2′-*O*-TBDMS-adenosine-3′-CEP



$C_{48}H_{66}N_7O_7PSi$
Mol. Wt.: 912.14

Catalog# ANP-8626

Pricing
$365.00 / 100 µmole
$840.00 / 250 mg
$1340.00 / 500 mg

Purity: 98% +

3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9824-05 N-9824-10	N^4-Ethyl-2′-*O*-TBDMS-cytidine-3′-lcaa CPG	500Å 1000Å	$ 60	$525	$85	$125	$170	$250
N-9050-05 N-9050-10	N^6-Benzyl-2′-*O*-TBDMS-adenosine-3′-lcaa CPG	500Å 1000Å	$120	$800	$105	$170	$210	$340
N-9060-05 N-9060-10	N^6-Isopentyl-2′-*O*-TBDMS-adenosine-3′-lcaa CPG	500Å 1000Å	$125	$810	$110	$175	$220	$350

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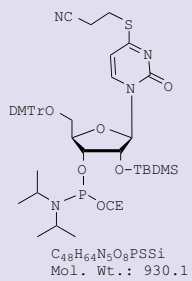
4-Thiocyanoethyl-2′-*O*-TBDMS-Uridine-3′-CEP



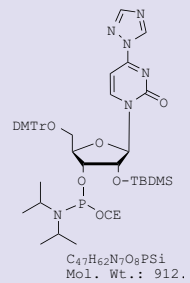
$C_{48}H_{64}N_5O_8PSSi$
Mol. Wt.: 930.1

Catalog# ANP-8101

Pricing
$350.00 / 100 µmole
$840.00 / 250 mg
$1510.00 / 500 mg

Purity: 98% +

4(1,2,4-Triazolyl)-2′-*O*-TBDMS-Uridine-3′-CEP



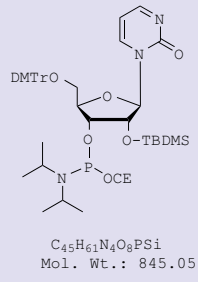
$C_{47}H_{62}N_7O_8PSi$
Mol. Wt.: 912.

Catalog# ANP-9167

Pricing
$350.00 / 100 µmole
$810.00 / 250 mg
$1380.00 / 500 mg

Purity: 98% +

2′-*O*-TBDMS-Pyrimidin-2-one-3′-CEP; Zebularine CEP



$C_{45}H_{61}N_4O_8PSi$
Mol. Wt.: 845.05

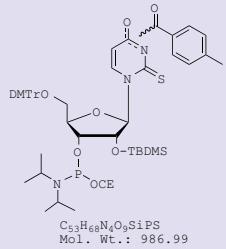
Catalog# ANP-8611

Pricing
$240.00 / 100 µmole
$630.00 / 250 mg
$1130.00 / 500 mg

Purity: 98% +

CAS No. 155831-90-6

2-Thio-2′-*O*-TBDMS-Uridine (N3/O4-toluoyl)-3′-CEP



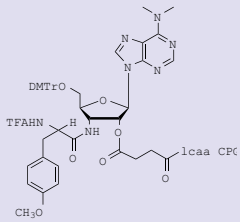
$C_{53}H_{68}N_4O_9SiPS$
Mol. Wt.: 986.99

Catalog# ANP-9216

Pricing
$320.00 / 100 µmole
$725.00 / 250 mg
$1300.00 / 500 mg

Purity: 98% +

Puromycin 2′-succinyl lcaa CPG



N-1971-05/10

Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9020-05 N-9020-10	2′-*O*-TBDMS-Pyridine-2-One 3′-lcaa CPG (Zebularine CPG)	500Å 1000Å	$105	$685	$95	$145	$190	$290
N-4617-05	2′-*O* -TBDMS-Pseudouridine - 3′-lcaa CPG	500Å	$60	$525	$85	$125	$170	$250
N-1971-05 N-1971-10	3′-*O*-Methyl-Tyrosine-Puromycin-2′-lcaa CPG	500Å 1000Å	$108	$896	$108	$190	$216	$380

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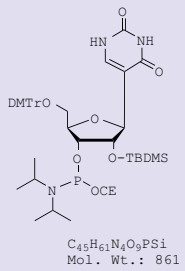
5'-DMT-2'-*O*-TBDMS-Pseudo-Uridine-3'-CEP



$C_{45}H_{61}N_4O_9PSi$
Mol. Wt.: 861

Catalog#

ANP-8612

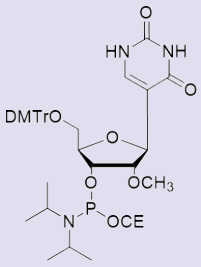
Pricing

$345.00 / 100 mg
$995.00 / 250 mg
$1790.00 / 500 mg

Purity: 98% +

CAS No. 163496-23-9

5'-DMT-2'-*O*-Methoxy -Pseudo Uridine-3'-CEP



$C_{40}H_{49}N_4O_9P$
Mol. Wt.: 760.82

Catalog#

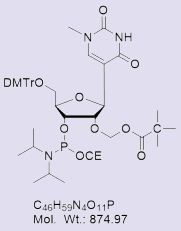
ANP-3614

Pricing

$300.00 / 100 mg
$700.00 / 250 mg
$1290.00 / 500 mg

Purity: 98% +

5'-DMT-2'-*O*-PivOM-N1-Methyl Pseudo-Uridine-3'-CEP



$C_{46}H_{59}N_4O_{11}P$
Mol. Wt.: 874.97

Catalog#

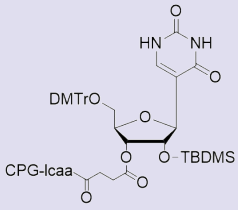
ANP-3619

Pricing

$370.00 / 100 mg
$830.00 / 250 mg
$1490.00 / 500 mg

Purity: 98% +

2'-*O*-TBDMS-Pseudouridine 3'- lcaa CPG



N-4617-05

Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-4617-05	2'-*O* -TBDMS-Pseudouridine - 3'-lcaa CPG	500Å	$60	$525	$85	$125	$170	$250

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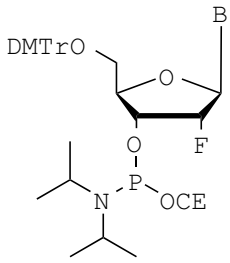
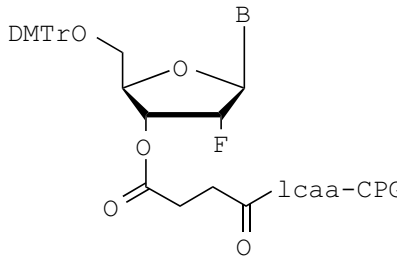
Phosphoramidites and Supports for Modified RNA Synthesis



2′-Fluoro-2′-deoxy Amidites with Base Protection

B	Protection	Catalog#	CAS No.
A	*N*-Bz	ANP-9151	136834-22-5
A	*N*-DMF	ANP-9157	
C	*N*-Ac	ANP-9152	159414-99-0
G	*N*-*i*Bu	ANP-9153	
G	*N*-DMF	ANP-9159	
U	N/A	ANP-9154	

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-9151	2′-Fluoro-2′-deoxyadenosine (*N*-Bz)-3′-CEP, *M.W. 875.92*	$115.00	$205.00	$320.00	$526.00	$1,055.00
ANP-9157	2′-Fluoro-2′-deoxyadenosine (*N*-DMF)-3′-CEP, *M.W. 826.9*	$125.00	$225.00	$360.00	$576.00	$1,260.00
ANP-9152	2′-Fluoro-2′-deoxycytidine (*N*-Ac) 3′-CEP, *M.W. 789.83*	$105.00	$190.00	$305.00	$490.00	$980.00
ANP-9153	2′-Fluoro-2′-deoxyguanosine (*N*-*i*Bu) 3′-CEP, *M.W. 857.91*	$115.00	$205.00	$320.00	$526.00	$1,055.00
ANP-9159	2′-Fluoro-2′-deoxyguanosine (*N*-DMF) 3′-CEP, *M.W. 842.89*	$125.00	$225.00	$360.00	$576.00	$1,260.00
ANP-9154	2′-Fluoro-2′-deoxyuridine 3′-CEP, *M.W. 748.78*	$105.00	$190.00	$305.00	$490.00	$980.00



2′-Fluoro-2′-deoxy Nucleosides Supports with base Protection

B	Protection	Catalog #
A	*N*-Bz	N-1058
A	*N*-DMF	N-1067
C	*N*-Ac	N-1057
G	*N*-*i*Bu	N-1055
G	*N*-DMF	N-1069
U	N/A	N-1056

Succinyl lcaa Supports & Columns

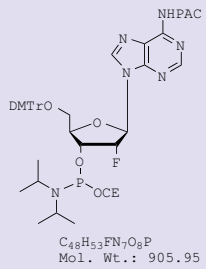
Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	pack of 4 cols. 0.2 umole	pack of 4 cols. 1.0 umole	pack of 10 cols. 0.2 umole	pack of 10 cols. 1.0 umole
N-1058-05 N-1058-10	2′-Fluoro-2′-deoxyadenosine (*N*-Bz) 3′-lcaa CPG	500Å 1000Å	$110	$145	$165	$295	$365
N-1067-05 N-1067-10	2′-Fluoro-2′-deoxyadenosine (*N*-DMF) 3′-lcaa CPG	500Å 1000Å	$110	$145	$165	$295	$365
N-1057-05 N-1057-10	2′-Fluoro-2′-deoxycytidine (*N*-Ac) 3′-lcaa CPG	500Å 1000Å	$85	$105	$125	$210	$250
N-1055-05 N-1055-10	2′-Fluoro-2′-deoxyguanosine (*N*-*i*Bu) 3′-lcaa CPG	500Å 1000Å	$110	$145	$165	$295	$365
N-1069-05 N-1069-10	2′-Fluoro-2′-deoxyguanosine (*N*-DMF) 3′-lcaa CPG	500Å 1000Å	$110	$145	$165	$295	$365
N-1056-05 N-1056-10	2′-Fluoro-2′-deoxyuridine 3′-lcaa CPG	500Å 1000Å	$85	$105	$125	$210	$250

2′-Fluoro nucleoside phosphoramidites:

A number of 2′-deoxy-2′-fluoro nucleosides have been found to display significant biological activity as nucleosides and as triphosphates, and are used as versatile probes for DNA and RNA polymerases (see review article; Viani, F., Stereochemical Challenges and Biomedical Targets; Soloshonola, V.A. Ed. Chapter 13, pp 419-449, John Wiley & Sons Ltd. **1999**; Wright G.E., Brown N.C. *Ther. Pharmacol.* **1990**, *47*, 447). The incorporation of the deoxyfluoronucleosides into oligonucleotides imparts very interesting biological properties to fluorinated oligomers (Reif, B., Wittmann, V., Schwalbe, H., Griesinger, C., Jahn-Hofmann, K., Engels, J.W. *Helv. Chim. Acta* **1997**, *80*, 1952).

2′-Fluoro-2′-deoxy Amidites with labile Base Protection

2′-Fluoro-2′-deoxyadenosine (N-PAC)-3′-CEP



$C_{48}H_{53}FN_7O_8P$
Mol. Wt.: 905.95

Catalog#

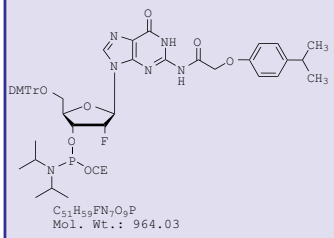
ANP-9131

Pricing

$60.00 / 100 µmole
$130.00 / 250 mg
$210.00 / 500 mg
$336.00 / 1 g

Purity: 98% +

2′-Fluoro-2′-deoxyguanosine (N-iPrPAC)-3′-CEP



$C_{51}H_{59}FN_7O_9P$
Mol. Wt.: 964.03

Catalog#

ANP-9134

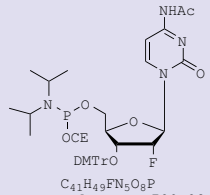
Pricing

$60.00 / 100 µmole
$130.00 / 250 mg
$210.00 / 500 mg
$336.00 / 1 g

Purity: 98% +

2′-Fluoro-2′-deoxy Amidites for Reverse Direction Synthesis

2′-Fluoro-2′-deoxycytidine (N-Ac)-5′-CEP



$C_{41}H_{49}FN_5O_8P$
Mol. Wt.: 789.83

Catalog#

ANP-8192

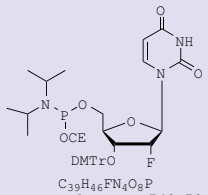
Pricing

$60.00 / 100 µmole
$130.00 / 250 mg
$210.00 / 500 mg
$336.00 / 1 g

CAS No. 159414-99-0

Purity: 98% +

2′-Fluoro-2′-deoxyuridine-5′-CEP



$C_{39}H_{46}FN_4O_8P$
Mol. Wt.: 748.78

Catalog#

ANP-8194

Pricing

$60.00 / 100 µmole
$130.00 / 250 mg
$210.00 / 500 mg
$336.00 / 1 g

CAS No. 146954-75-8

Purity: 98% +

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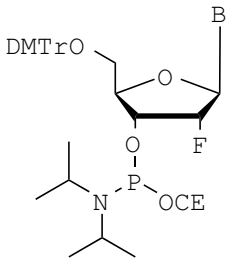
Phosphoramidites and Supports for Modified RNA Synthesis

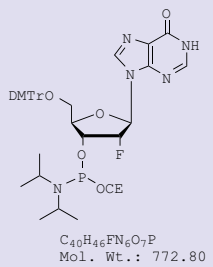


2′-Deoxy-2′-Fluoro-5-Methyl Amidites with Base Protection

B	Protection	Catalog#
5-Me C	*N*-Ac	ANP-9231
5-Me C	*N*-Bz	ANP-9232
5-Me U	N/A	ANP-9233

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-9231	2'-Fluoro-5-methyl-2'-deoxy-cytidine (*N*-Ac)-3'-CEP, *M.W. 803.86*	$120.00	$215.00	$385.00	$690.00	$1,240.00
ANP-9232	2'-Fluoro-5-methyl-2'-deoxy-cytidine (*N*-Bz)-3'-CEP, *M.W. 865.92*	$120.00	$215.00	$385.00	$690.00	$1,240.00
ANP-9233	2'-Fluoro-5-methyl-2'-deoxy uridine-3'-CEP, *M.W. 762.80*	$120.00	$215.00	$385.00	$690.00	$1,240.00

2′-Fluoro-2′-deoxyinosine-3′-CEP



$C_{40}H_{46}FN_6O_7P$
Mol. Wt.: 772.80

Catalog#

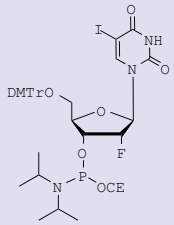
ANP-9234

Pricing

$255.00 / 100 µmole
$655.00 / 250 mg
$1025.00 / 500 mg

Purity: 98% +

2′-Fluoro-5-Iodo-2′-deoxyuridine-3′-CEP



$C_{39}H_{45}FIN_4O_8P$
Mol. Wt.: 874.6

Catalog#

ANP-9235

Pricing

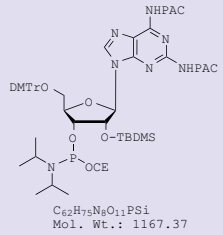
$255.00 / 100 µmole
$655.00 / 250 mg
$1025.00 / 500 mg

Purity: 98% +

Oligo Synthesis Products

Phosphoramidites and Supports for Modified RNA Synthesis

2′-*O*-TBDMS-2,6-Diamino-purine(N^2, N^6-dipac)-3′-CEP
(2-Amino-2′-*O*-TBDMS-adenosine-3′-CEP)

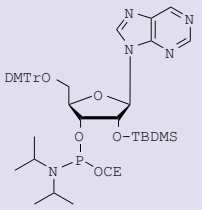


Catalog# ANP-8613

Pricing
$325.00 / 100 µmole
$625.00 / 250 mg
$1125.00 / 500 mg

Purity: 98% +

2′-*O*-TBDMS-purine-riboside-3′-CEP; Nebularine CEP
(2′-*O*-TBDMS-purine-Riboside-3′-CEP)

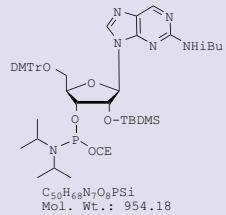


Catalog# ANP-8616

Pricing
$245.00 / 100 µmole
$630.00 / 250 mg
$1130.00 / 500 mg

Purity: 98% +

2-Amino-2′-*O*-TBDMS-purine (N-iBu)-riboside-3′-CEP
(2′-*O*-TBDMS-2-Amino-purine (N-iBu)-riboside-3′-CEP)

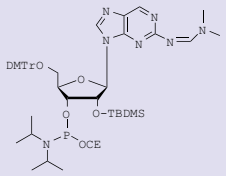


Catalog# ANP-8617

Pricing
$ 295.00 / 100 µmole
$ 690.00 / 250 µmole
$1210.00 / 500 mg

Purity: 98% +

2-Amino-2′-*O*-TBDMS-purine (N-DMF)-riboside-3′-CEP
(2′-*O*-TBDMS-2-Amino-purine (N-DMF)-riboside-3′-CEP)



Catalog# ANP-8619

Pricing
$370.00 / 100 µmole
$880.00 / 250 mg
$1510.00 / 500 mg

Purity: 98% +

3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9040-05 N-9040-10	2-Amino-2'-*O*-TBDMS-Adenosine-3'-lcaa CPG	500Å 1000Å	$120	$615	$95	$165	$190	$330
N-9070-05 N-9070-10	2-Amino-2'-*O*-TBDMS-purine-riboside-3'-lcaa CPG	500Å 1000Å	$120	$610	$95	$165	$190	$330
N-9080-05 N-9080-10	2'-*O*-TBDMS-Purine-riboside-3'-lcaa CPG	500Å 1000Å	$110	$610	$95	$165	$190	$330

Please Indicate Synthesizer when Ordering

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AB30	AB39	EX	MR	PX	AK

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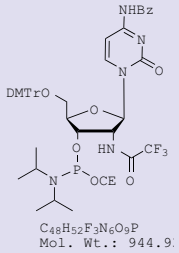
2′-Amino (TFA)-cytidine-3′-CEP

(2′-Amino (TFA)-cytidine (N-Bz)-3′-CEP)



Catalog# ANP-5322

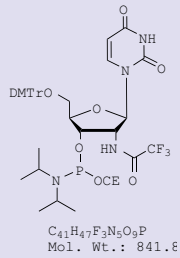
Pricing

$245.00 / 100 µmole
$510.00 / 250 mg
$840.00 / 500 mg

Purity: 98% +

2′-Amino (TFA)-uridine-3′-CEP

(2′-Amino (TFA)-uridine-3′-CEP)



Catalog# ANP-9403

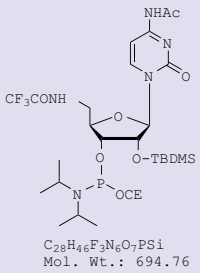
Pricing

$245.00 / 100 µmole
$575.00 / 250 mg
$920.00 / 500 mg

Purity: 98% +

5′-Amino (TFA)-2′-*O*-TBDMS-cytidine-3′-CEP

(5′-Amino (TFA)-2′-*O*-TBDMS-Cytidine (N-Ac)-3′-CEP)



Catalog# ANP-9405

Pricing

$280.00 / 100 µmole
$790.00 / 250 mg
$1260.00 / 500 mg

Purity: 98% +

Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	1 g	pack of 4 cols. 0.2 µmole	1.0 µmole	pack of 10 cols. 0.2 µmole	1.0 µmole
N-9010-05 N-9010-10	2′-Amino (TFA)-uridine-3′-lcaa CPG	500Å 1000Å	$110	$610	$90	$155	$180	$310
N-9015-05	2′-Amino (TFA)-cytidine-	500Å	$110	$610	$90	$155	$180	$310

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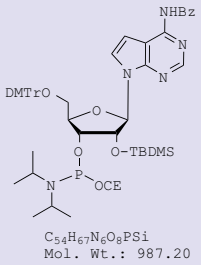
7-Deaza-2′-*O*-TBDMS-adenosine(N-Bz)-3′-CEP; Tubercidin CEP; (7-Deaza-2′-*O*-TBDMS-adenosine (N-Bz)-3′-CEP)



$C_{54}H_{67}N_6O_8PSi$
Mol. Wt.: 987.20

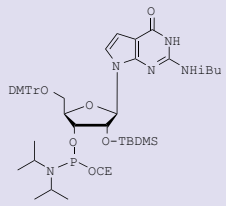
Catalog# ANP-7101

Pricing
$440.00 / 100 µmole
$1045.00 / 250 mg
$1880.00 / 500 mg

Purity: 98% +

CAS No. 144994-95-6

7-Deaza-2′-*O*-TBDMS-guanosine (N-iBu)-3′-CEP
(7-Deaza-2′-*O*-TBDMS-guanosine (N-iBu)-3′-CEP)



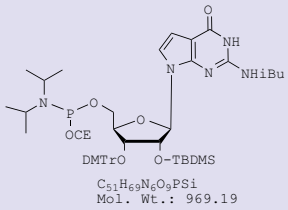
$C_{51}H_{69}N_6O_9PSi$
Mol. Wt.: 969.19

Catalog# ANP-7301

Pricing
$440.00 / 100 µmole
$1045.00 / 250 mg
$1880.00 / 500 mg

Purity: 98% +

7-Deaza-2′-*O*-TBDMS-guanosine (N-iBu)-5′-CEP
(3′-DMT 7-Deaza-2′-*O*-TBDMS-guanosine (N-iBu)-5′-CEP)



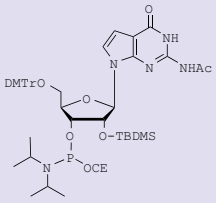
$C_{51}H_{69}N_6O_9PSi$
Mol. Wt.: 969.19

Catalog# ANP-7102

Pricing
$480.00 / 100 µmole
$1150.00 / 250 mg
$2060.00 / 500 mg

Purity: 98% +

7-Deaza-2′-*O*-TBDMS-guanosine (N-Ac)-3′-CEP
(7-Deaza-2′-*O*-TBDMS-guanosine (N-Ac)-3′-CEP)



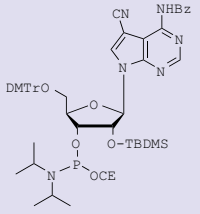
$C_{52}H_{69}N_5O_9PSi$
Mol. Wt.: 941.12

Catalog# ANP-7302

Pricing
$440.00 / 100 µmole
$1045.00 / 250 mg
$1880.00 / 500 mg

Purity: 98% +

7-Deaza-7-cyano-2′-*O*-TBDMS-adenosine (N-Bz)-3′-CEP
(7-Deaza 7-cyano -2′-O-TBDMS-adenosine (N-Bz)-3′-CEP)



$C_{55}H_{66}N_7O_8PSi$
Mol. Wt.: 1012.21

Catalog# ANP-7306

Pricing
$480.00 / 100 µmole
$1150.00 / 250 mg
$2060.00 / 500 mg

Purity: 98% +

3′-Succinyl Icaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	1 g	pack of 4 cols. 0.2 µmole	1.0 µmole	pack of 10 cols. 0.2 µmole	1.0 µmole
N-9897-05	7-Deaza-2′-*O*-TBDMS-adenosine (*N*-Bz)	500Å	$95	$685	$110	$190	$220	$380
N-9897-10	3′-Icaa CPG (Tubercidine CPG)	1000Å						
N-9895-05	7-Deaza-2′-*O*-TBDMS-	500Å	$95	$685	$110	$190	$220	$380
N-9895-10	guanosine (*N*-*i*Bu)-3′-Icaa CPG	1000Å						

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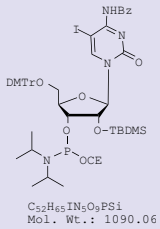
Oligo Synthesis Products

Phosphoramidites and Supports for Modified RNA Synthesis

5-Iodo-2′-*O*-TBDMS-cytidine (N-Bz)-3′-CEP

(5-Iodo-2′-*O*-TBDMS-cytidine (N-Bz)-3′-CEP)



$C_{52}H_{65}IN_5O_9PSi$
Mol. Wt.: 1090.06

Catalog#

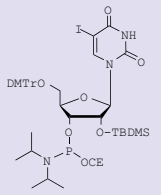
ANP-7212

Pricing

$185.00 / 100 µmole
$400.00 / 250 mg
$720.00 / 500 mg

Purity: 98% +

5-Iodo-2′-*O*-TBDMS-uridine-3′-CEP



$C_{45}H_{60}IN_4O_9PSi$
Mol. Wt.: 986.94

Catalog#

ANP-7412

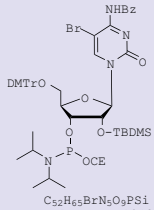
Pricing

$185.00 / 100 µmole
$400.00 / 250 mg
$720.00 / 500 mg

Purity: 98% +

5-Bromo-2′-*O*-TBDMS-cytidine (N-Bz)-3′-CEP

(5-Bromo-2′-*O*-TBDMS-cytidine (N-Bz)-3′-CEP)



$C_{52}H_{65}BrN_5O_9PSi$
Mol. Wt.: 1043.

Catalog#

ANP-5648

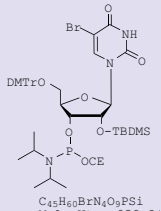
Pricing

$180.00 / 100 µmole
$415.00 / 250 mg
$750.00 / 500 mg

Purity: 98% +

5-Bromo-2′-*O*-TBDMS-uridine-3′-CEP

(5-Bromo-2′-*O*-TBDMS-uridine-3′-CEP)



$C_{45}H_{60}BrN_4O_9PSi$
Mol. Wt.: 939.9

Catalog#

ANP-7411

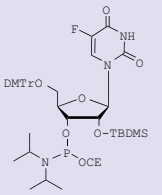
Pricing

$180.00 / 100 µmole
$415.00 / 250 mg
$750.00 / 500 mg

Purity: 98% +

5-Fluoro-2′-*O*-TBDMS-uridine-3′-CEP

(5-Fluoro-2′-*O*-TBDMS-uridine-3′-CEP)



$C_{45}H_{60}FN_4O_9PSi$
Mol. Wt.: 879.04

Catalog#

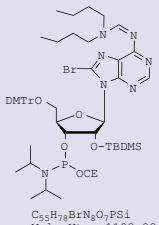
ANP-6154

Pricing

$255.00 / 100 µmole
$650.00 / 250 mg
$1180.00 / 500 mg

Purity: 98% +

8-Bromo-2′-O-TBDMS-adenosine (N-DBF)-3′-CEP



Catalog# ANP-7111

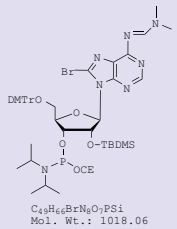
Pricing

$120.00 / 100 µmole
$250.00 / 250 mg
$450.00 / 500 mg

Purity: 99% +

CAS No. 197712-21-3

8-Bromo-2′-O-TBDMS-adenosine (N-DMF)-3′-CEP



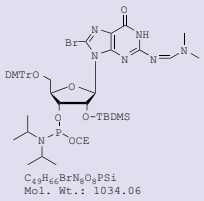
Catalog# ANP-7112

Pricing

$110.00 / 100 µmole
$240.00 / 250 mg
$425.00 / 500 mg

Purity: 99% +

8-Bromo-2′-O-TBDMS-guanosine (N-DMF)-3′-CEP



Catalog# ANP-7113

Pricing

$120.00 / 100 µmole
$250.00 / 250 mg
$450.00 / 500 mg

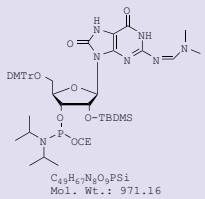
Purity: 99% +

3′-Succinyl Icaa Supports Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9809-05	5-Iodo-2′-*O*-TBDMS-uridine-	500Å	$125	$550	$105	$120	$210	$240
N-9809-10	3′-Icaa CPG	1000Å						
N-9818-05	5-Bromo-2′-*O*-TBDMS-uridine-	500Å	$125	$550	$105	$120	$210	$240
N-9818-10	3′-Icaa CPG	1000Å						
N-9844-05	5-Bromo-2′-*O*-TBDMS-	500Å	$140	$580	$115	$130	$230	$260
N-9844-10	cytidine (*N*-Bz)-3′-Icaa CPG	1000Å						
N-9812-05	8-Bromo-2′-*O*-TBDMS-adenosine	500Å	$150	$800	$130	$175	$260	$350
N-9812-10	(*N*-DBF)-3′-Icaa CPG	1000Å						
N-9832-05	5-Fluoro-2′-*O*-TBDMS-	500Å	$125	$580	$105	$120	$210	$240
N-9832-10	uridine-3′-Icaa CPG	1000Å						
N-9893-05	5-Iodo-2′-*O*-TBDMS-	500Å	$150	$800	$130	$175	$260	$350
N-9893-10	cytidine (*N*-Bz)-3′-Icaa CPG	1000Å						

8-Oxo-2′-*O*-TBDMS-guanosine-3′-CEP

(8-Oxo-riboguanosine (*N*-DMF)-3′-CEP



Catalog# ANP-9420

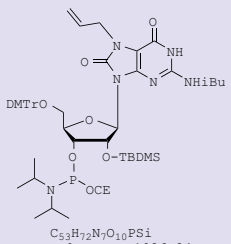
Pricing

$285.00 / 100 µmole
$675.00 / 250 mg
$1325.00 / 500 mg

Purity: 99% +

8-Oxo-7-allyl-7,8-dihydro-2′-*O*-TBDMS-Guanosine-3′-CEP

(8-Oxo-7-allyl-7,8-dihydro-riboguanosine (*N*-iBu)-3′-CEP



Catalog# ANP-9422

Pricing

$325.00 / 100 µmole
$768.00 / 250 mg
$1520.00 / 500 mg

Purity: 99% +

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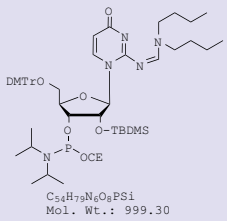
2′-*O*-TBDMS-isocytidine (N-DBF)-3′-CEP

(Isocytidine (N-DBF)-3′-CEP)



Catalog# ANP-7715

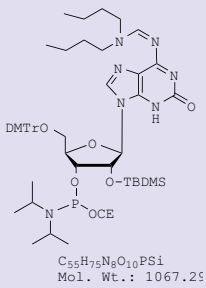
Pricing

$370.00 / 100 µmole
$790.00 / 250 mg
$1420.00 / 500 mg

Purity: 98% +

2′-*O*-TBDMS-isoguanosine (N-DBF)-3′-CEP

(Isoguanosine (N-DBF)-3′-CEP)



Catalog# ANP-5988

Pricing

$370.00 / 100 µmole
$790.00 / 250 mg
$1420.00 / 500 mg

Purity: 98% +

iso-C & iso-G 3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9712-05	Iso-2′-*O*-TBDMS-	500Å	$155	$810	$120	$145	$240	$290
N-9712-10	Cytidine (*N*-DBF)-3′-lcaa CPG	1000Å						
N-9827-05	Iso-2′-*O*-TBDMS-	500Å	$155	$810	$120	$150	$240	$300
N-9827-10	guanosine (*N*-DBF)-3′-lcaa CPG	1000Å						

Iso-Cytidine and Iso-Guanosine Phosphoramidite

Iso-Cytidine and Iso-Guanosine are variants of natural Cytidine and Guanosine RNA bases. One of the key advantages of these monomers is their capability of binding with each other with three hydrogen bonds as shown in the figure below. Additionally these monomers do not recognize naturally occurring Cytidine and Guanosine bases. Thus they are used for specific sequence based genetic engineering[1,2].

1. Switzer, C. Y.; Moroney, S. E.; Benner, S. A. *Biochemistry* **1993**, *32*, 10489-10496 & references cited in this article.
2. Chen, X.; Kierzek, R.; Turner, D. H. *J. Am. Chem. Soc.* **2001**, *123*, 1267-1774.

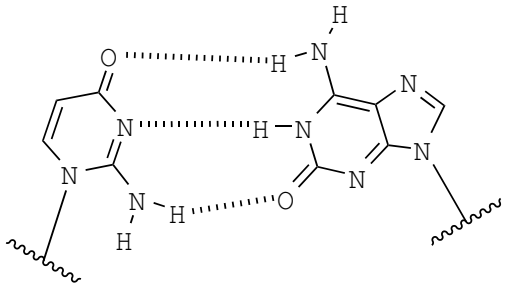
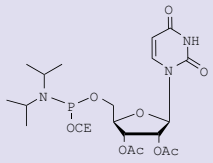


Figure: Representing Iso-C and Iso-G base pairing

2′,3′-O-Diacetyl-Uridine-5′-CEP



$C_{22}H_{33}N_4O_9P$
Mol. Wt.: 528.49

Catalog#

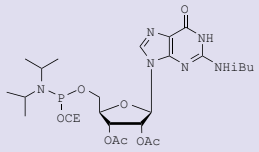
ANP-6155

Pricing

$80.00 / 100 µmole
$320.00 / 250 mg
$575.00 / 500 mg

Purity: 98% +

2′,3′-O-Diacetyl-Guanosine (N-iBu)-5′-CEP



$C_{27}H_{42}N_7O_8P$
Mol. Wt.: 623.64

Catalog#

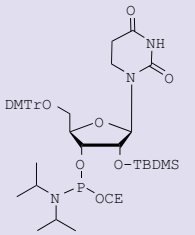
ANP-6156

Pricing

$90.00 / 100 µmole
$316.00 / 250 mg
$570.00 / 500 mg

Purity: 98% +

5,6-Dihydro-2′-*O*-TBDMS-Uridine-3′-CEP



$C_{45}H_{61}N_4O_9PSi$
Mol. Wt.: 861.(

Catalog#

ANP-6066

Pricing

$220.00 / 100 µmole
$565.00 / 250 mg
$1015.00 / 500 mg

Purity: 98% +

Terminal Diol Generating Phosphoramidites

2′,3′-*O*-Diacetyl-5′-phosphoramidites are available from ChemGenes for the introduction of 2′,3′-ribose units at the 5′-end of oligonucleotides. Following ammonia deprotection, the 2′,3′-diacetate generates a free ribose 2′,3′-diol moiety in the oligonucleotide.
Periodate cleavage of these diols generates dialdehydes (Krynetskaya, N. F.; Zayakina, G. V.; Oretskaya, T. S.; Volkov, E. M.; Shabarova, Z. A. *Nucleosides Nucleotides Nucleicacids* **1986**, *5*, 33). These dialdehydes have been stabilized by amines, especially by terminal amino groups of lysine residue of proteins or polypeptides (Khym, J. X. *Biochemistry* **1963**, *2*, 344). Such oligonucleotide-protein conjugates have been utilized in immuno-assay and diagnostic applications.

Dihydrouridine Phosphoramidite

Dihydrouridine, along with a large number of other modified nucleosides are present abundantly in tRNA, mRNA, shRNA, rRNA and other RNAs[1]. The catabolic degradation of uridine or the uracil moiety leads to dihydrouridine and enzyme dihydropyrimidine dehydrogenase is involved[2]. The oligonucleotides containing this base seem to be crucial in understanding the regulation of enzymes involved in the pathway.

1. Limback, P. A.; Crain, P. F.; McCloskey, J. A. *Nucl. Acids Res.* **1994**, *22*, 2183-2196.
2. Gojkovic, Z.; Rislund, L.; Andersen, B.; Sandrini, M. P. B.; Cook, P. F.; Schnackerz, K. D.; Piskur, J. *Nucl. Acids Res.* **2003**, *31*, 1683-1692.

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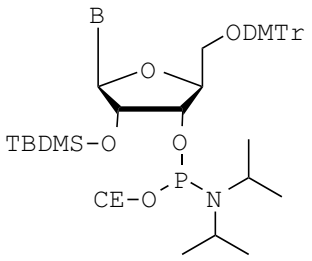
Oligo Synthesis Products

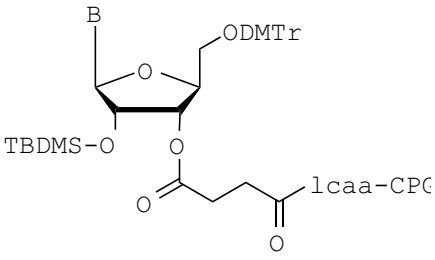
Phosphoramidites and Supports for Modified RNA Synthesis



ß-L-RNA Phosphoramidites

B	Protection	Catalog#
A	*N*-Bz	ANP-4841
C	*N*-Bz	ANP-4842
G	*N*-*i*Bu	ANP-4843
T	N/A	ANP-4844
U	N/A	ANP-4845
C	*N*-Ac	ANP-4846

Catalog#	Product name	250mg	500mg	1g	2g	5g
ANP-4841	ß-L-2'-*O*-TBDMS-Adenosine (*N*-Bz)-3'-CEP, *M.W. 988.19*	$200.00	$360.00	$640.00	$1,152.00	$2,592.00
ANP-4842	ß-L-2'-*O*-TBDMS-Cytidine (*N*-Bz)-3'-CEP, *M.W. 964.17*	$200.00	$360.00	$640.00	$1,152.00	$2,592.00
ANP-4843	ß-L-2'-*O*-TBDMS-Guanosine (*N*-*i*Bu)-3'-CEP, *M.W. 970.18*	$200.00	$360.00	$640.00	$1,152.00	$2,592.00
ANP-4844	ß-L-2'-*O*-TBDMS-riboThymidine-3'-CEP, *M.W. 875.07*	$200.00	$360.00	$640.00	$1,152.00	$2,592.00
ANP-4845	ß-L-2'-*O*-TBDMS-Uridine 3'-CEP, *M.W. 861.05*	$200.00	$360.00	$640.00	$1,152.00	$2,592.00
ANP-4846	ß-L-2'-*O*-TBDMS-Cytidine (*N*-Ac) 3'-CEP, *M.W. 902.10*	$200.00	$360.00	$640.00	$1,152.00	$2,592.00

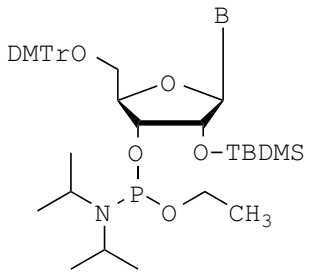


ß-L-RNA lcaa Supports

B	Protection	Catalog #
A	*N*-Bz	N-4691
C	*N*-Bz	N-4692
G	*N*-*i*Bu	N-4693
U	N/A	N-4694
T	N/A	N-4695
C	*N*-Ac	N-4696

			Bulk CPG				pack of 4 cols.		pack of 10 cols.
Catalog #	Product Name	Pore Size	100 mg	500 mg	1 g	0.2 µmole	1.0 µmole	0.2 µmole	1.0 µmole
N-4691-05 N-4691-10	ß-L-2'-*O*-TBDMS-Adenosine (*N*-Bz) 3'-lcaa CPG	500Å 1000Å	$135	$425	$850	$110	$125	$220	$250
N-4692-05 N-4692-10	ß-L-2'-*O*-TBDMS-Cytidine (*N*-Bz)-3'-lcaa CPG	500Å 1000Å	$135	$425	$850	$110	$125	$220	$250
N-4693-05 N-4693-10	ß-L-2'-*O*-TBDMS-Guanosine (*N*-iBu)-3'-lcaa CPG	500Å 1000Å	$135	$425	$850	$110	$125	$220	$250
N-4694-05 N-4694-10	ß-L-2'-*O*-TBDMS-Uridine -3'-lcaa CPG	500Å 1000Å	$135	$425	$850	$110	$125	$220	$250
N-4695-05 N-4695-10	ß-L-2'-*O*-TBDMS-RiboThymidine-3'-lcaa CPG	500Å 1000Å	$135	$425	$850	$110	$125	$220	$250
N-4696-05 N-4696-10	ß-L-2'-*O*-TBDMS-Cytidine (*N*-Ac)-3'-lcaa CPG	500Å 1000Å	$135	$425	$850	$110	$125	$220	$250

*Currently we are offering 2'-O-TBDMS-3'-lcaa CPG Products instead of 3'-O-TBDMS-2'-lcaa CPG



RNA Ethyl Phosphoramidites with Labile (Mild) Base Protection

B	Protection	Catalog#
A	*N*-PAC	ANP-4131
C	*N*-PAC	ANP-4132
G	*N*-PAC	ANP-4133
U	N/A	ANP-4134

Catalog#	Product name	250mg	500mg	1g	2g	5g
ANP-4131	2'-*O*-TBDMS-Adenosine (*N*-PAC) 3'-Ethyl Phosphoramidite, *M.W. 993.21*	$180.00	$325.00	$590.00	$1,060.00	$2,375.00
ANP-4132	2'-*O*-TBDMS-Cytidine (*N*-PAC) 3'-Ethyl Phosphoramidite, *M.W. 969.18*	$180.00	$325.00	$590.00	$1,060.00	$2,375.00
ANP-4133	2'-*O*-TBDMS-Guanosine (*N*-PAC) 3'-Ethyl Phosphoramidite, *M.W. 1009.21*	$180.00	$325.00	$590.00	$1,060.00	$2,375.00
ANP-4134	2'-*O*-TBDMS-Uridine 3'-Ethyl Phosphoramidite, *M.W. 836.04*	$180.00	$325.00	$590.00	$1,060.00	$2,375.00

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RNA Purification

Purification of synthetic RNA

RNA purification is significantly more difficult than DNA purification due to possible chain cleavage and isomerization of the internucleotide phosphate linkage. Several methodologies for deprotection and purification have been developed.

Small Quantity Purification

The first step following the synthesis of oligonucleotides involves a base treatment to remove the *N*-protecting and cyanoethyl groups. For base deprotection, both 28% aqueous ammonia containing ethanol (1:3) or anhydrous saturated ethanolic ammonia solutions have been used. The latter was found to be superior in preventing the loss of any silyl groups (Scaringe, S. A.; Francklyn, C.; Usman, N. *Nucl. Acids Res.* **1990**, 18, 5433). It has been reported that a certain amount of silyl groups will be lost when using the former ammonia solution (Stawinski, J.; Stromberg, R.; Thelin, M.; Westman, E. *Nucl. Acids Res*. **1988**, *16*, 9285).

The second step in the deprotection process involves removal of silyl protecting groups (TBDMS).This has been accomplished by 1.0 M solution of tetrabutylammoniumfluoride (TBAF) in THF. The reaction involves 50 equivalents of TBAF per TBDMS group during 24 hours. Even though initially deemed adequate, this method is slow and still leaves some TBDMS groups on the oligonucleotide. Much better results have been obtained with triethylamine-tris-hydrofluoride (TEA.3HF). In the synthesis of 76-mer tRNA the reaction with neat TEA.3HF for 14 hours resulted in complete removal of all TBDMS groups (Gasparutto, D.; Livache, T.; Bazin, H.; Duplaa, A.-M.; Guy M.; Khorlin, A.; Molko, D.; Roget, A.; Toule, R. *Nucl. Acids Res.* **1992**, 20,5159). The faster rate of silyl removal with TEA.3HF has been demonstrated by others (Sproat, B.; Colonna, F.; Mullah, B.; Tsou, D.; Andrus, A.; Hampel, A.; Vinayak, R. *Nucleosides & Nucleotides*, **1995**, *14*, 255).

Example of Oligonucleotide Purification using 2′-O-TBDMS-N-(A^{bz}; G^{ibu}; C^{Ac} & U) protected RNA monomers:

A summary of procedures is outlined below. Detailed protocols are available, with the products supplied to customers.

Caution: Only de-ionized RNase, pyrogen, nucleases and bacteria free water and filtered through a membrane with a filter unit capable of high molecular weight cut off should be used (preferably Millipore unit) for manipulations involving subsequent steps. Similarly all buffers to be used require this quality of water.

Deprotection Procedures:

Methyl Amine Deprotection: Cleavage from the solid support and deprotection of bases with methyl amine (MA; 40% methylamine in water; 1.0ml), followed by Triethylamine.3HF deprotection of silyl protecting group and subsequent precipitation with n-butanol, cooling at -70 C, followed by centrifugation at 8000 RPM, removal of supernatant is carried out. The solid later dissolved in 0.1M TEAA buffer (pH; 7.5), filtered through 0.45 micron filter and HPLC purification is carried out.

AMA Deprotection: Support cleavage and base deprotection with ammonium hydroxide : methylamine (AMA; 1:1; 1.5 ml), at different time intervals depending on sequence length results in based deprotected oligo. Subsequently the fully deprotected oligonucleotide is quenched with 50mM TEAB followed by cooling at -70 C and precipitation with n-butanol. The precipitated oligo dissolved in 0.1 M TEAA buffer (pH; 7.5) and filtered through 0.45 micron filter and HPLC purification is carried out. The oligo is them lyophilized as triethylamine salt to dry powder.

Puripak Cartridge (ChemGenes Cat # CSS-5232) Purification: The oligo (from 1.0 uM synthesis) dissolved in 0.1 M TEAB (pH; 7.5), charged on to appropriate size cartridge, eluted by applying a gentle pressure successively with 0.1M, 0.5 M and 1.0 M buffer, collecting 3-4 fractions in each buffer; each fraction being 5 ml. Small volume from the fractions to be dried 3 times with 50:50 mixture of ethanol:water (*v/v*) on rotary evaporator to remove buffer salt and analyzed by UV, CE to determine purest fractions. The desired fractions then coevaporation with 50:50 (*v/v*) ethanol:water. Generally RNA is present in 0.5 M buffer fraction (shorter length oligos) or in 1.0 M buffer (longer sequences such as 20-mer and above). The thin film of RNA is taken in 0.1 M TEAA and precipitated with 1.0 M solution of sodium perchlorate in acetone. The precipated oligonucleotide is centrifuged.

HPLC Purification: After deprotection and precipitation of crude oligo or oligo obtained after cartridge purification (depending on purity) is subsequently purified by HPLC. Brief conditions of purification of synthetic RNA's are as follows:

Anion–exchange -DNAPac PA-100 (4X250 nm Dionex Column) .

Mobile Phase: Eluants; 2 mM Tris.HCl (pH 7.4), 10 mm NaClO4, 6 M urea; & 2 mM Tris. HCl (pH 7.4), 0.55 M $NaClO_4$, 6 M urea; (Purification of Long chain RNA's; Pitch, S. *et.al.*, *Helv. Chim. Acta*, **2001**, *84*, 3773).

Source 15TM Q resin columns** (Ion- Exchange) Purification: Manufacturer-GE Eluants: 0.5 M Tris:Acetonitrile: water (10:10:80, *v/v/v*) (Buffer A) & 1.5 M NaCl in Buffer A (Buffer B). **Source Q is a Trade mark of GE Health Care.

Mono Q HR 10/10 column (GE Health Care): with $NaClO_4$ gradient in Tris buffer (pH 6.8); Eluants: 0.1 M KH_2PO_4, pH 6.4, 0.05 M NaCl & Eluant B: 0.1 M KH_2PO_4, pH 6.4, 0.9 M NaCl as well as Eluants: 0.01 M $NaClO_4$, 20 mM Tris HCl, pH 6.8 & 0.6 M $NaClO_4$, 20 mM Tris-HCl, pH , 6.8, containing 10% acetonitrile (Mikhailov, S. N.; Rozensski, J.; Efimtseva, E. V.; Busson, R.; Aerschot, A. V.; Herdewijn, P. *Nucl. Acids Res.* **2002**, *30*,1124-1131); RNA's containing *N*-1 methyl adenosine base are separated well.

Desalting: Fractions obtained after HPLC are desalted by; (a) loading on C18 Sep Pak cartridge (Waters/Millipore), (Micura *et. al. Nucl. Acids Res.* **2000**), (b) ChemGenes Cartridges (CSS-5232), (c) NAP25 columns. After desalting the desired fractions are converted into sodium salt with sodium perchlorate.

RNA Purification Kit

(for Synthetic RNA via 2'-*O*-TBDMS Protection)

Besides offering highest purity RNA monomers, we also offer RNA deprotection & purification kits. With ChemGenes purification kits and products you can now synthesize and obtain a high quality of pure synthetic RNA. ChemGenes RNA purification kits include all the solutions and buffers required to obtain a high quality of synthetic RNA.

Catalog #	Quantity	Prices
CSS-5232-02	1 kit	$140.00 / 0.2 µm
CSS-5232-10	1 kit	$192.00 / 1.0 µm

The RNA Purification kit consist of the Following:

- CSS-3268 (10 ml)
- CSS-5272 (pack of 10)
- CSS-6634 (50 ml)
- CSS-5232 (25 ml)

Anhydrous Ammonia in Ethanol Solution

(20% ammonia by wieght in absolute ethanol)

NH_3. F.W.: 17

C_2H_6O. F.W.: 46.07

Catalog #	Quantity	Prices
CSS-3268	10 ml	$35.00

Ideal for selective deprotection of the base protecting groups and the cyanoethyl groups and preventing chain cleavage isomerization of 3'-5' phosphordiester bond in the final RNA.
(ref: Taifeng Wu, Kelvin K. Ogilive, Richard T. Pon, *Nucl. Acids Res.,* **1989**, 17, 3501.)

RNA Purification Cartridges

Catalog #	Quantity	Prices
CSS-5272-02	pack of 10	$60.00 / 0.2 µm
CSS-5272-10	pack of 10	$125.00 / 1.0 µm

The RNA purification cartridges are designed for the purification of short to medium length RNA oligonucleotides. The seperation of different length oligos is based on charges on the ion-exchenge media in the cartridges. They achieve excellent purification of the oligonucleotide.

Tetra Butyl Ammonium Fluoride (TBAF)

(1M Solution in Tetrahydrofuran)

$C_{16}H_{38}FN$

F.W.: 261.47

Catalog #	Quantity	Prices
CSS-4356	25 ml	$30.00

Used to remove silyl-protecting groups after the oligonucleotide synthesis.
Moisture Content adjusted for optimum silyl group removal.

Fluoride Ion Removal Solution

Catalog #	Quantity	Prices
CSS-6634	50 ml	$50.00

This is used to remove all the fluoride and organic bye products after tetra butyl ammonium fluoride step in RNA deprotection.

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Amidites and Supports for 2′-O-Alkyl/Antisense Oligonucleotides

Antisense (*i.e.* sequences complimentary to the "sense" strand, or usually messenger RNA) and otherwise interfering (e.g. "decoy") oligonucleotides, oligoribonucleotides (ONs), and modified ONs have gained overhelming popularity for interference in various steps leading from DNA transcription to mRNA translation. Such regulatory interference has been harnessed for therapeutic effects against many diseases and viral infections. Production of viral proteins are inhibited by oligonucleotides that are complimentary to portions of mRNA for that protein (*i.e.*antisense). Other regulatory mechanisms of viruses, such as HIV, have been targeted for interference with the use of complimentary (*i.e.* antisense), or decoy (*i.e.* sense) ONs. Oligonucleotides for therapy have several advantages. These include the extremely high specificity and the ease of design based on Watson-Crick base pairing. The high association constants imply a strong duplex formation and thus effectiveness at low concentrations.

They Hybridize with Natural Targets leading to Diagnostic & Therapeutic Applications

Unmodified ONS	2′-OMe Modified Synthetic ONs
Poor Uptake	Lipophilic, Ampiphilic
•Molecule too big	
• Highly charged	
Nuclease Resistant	Degradation by nucleases
Greater Specificty, Reacts Rapidly	Less Specificity
Higher T_m	Lower T_m

Combination of phosphorothioate phosphodiester regenerates RNaseH activity.

Synthetic Antisense oligo (2'-*O*-me Modified) are designed to;
Permeate through cell membrame
Bind to target RNA
Inactivate the target RNA

Biological Properties of 2′-*O*-Methyl RNA Molecules

- 2'-*O*-Methyl oligonucleotides have been used as chimeric oligomers with DNA-oligomers for site directed cleavage of RNA with RNaseH[1,2].
- 2'-*O*-Methyl oligonucleotides are more stable against several nucleases as compared to the deoxy and ribo type of oligomers. Therefore, the 2'-*O*-Methyl oligonucleotides are less susceptible to several nucleases[3].
- The use of 2'-*O*-Methyl and mixed phosphorothioates results in an inhibitory effect against HIV induced cytopathic effects and expressions of the virus specific antigens in cultures MT-4 cells. The anti-viral activity seems to be strongly concerned with the resistance to one or the other kind of deoxynucleases[4].
- 2'-*O*-Methyl oligoribonucleotides form stable hetero-duplexes with the complimentary RNA. The hybrid formed has a high, or a higher T_m than the corresponding DNA sequence[1].
- 2'-*O*-Methyl ribonucleotides have been used as valuable antisense probes for studying pre-mRNA splicing and the structures of splicosomes[5,6].
- The 2'-*O*-Methylethers of common ribonucleosdes have been found as minor components of RNA[7,8].
- A number of biotechnology oriented companies in the U.S. are currently involved in the development of DNA-based diagnostic and therapeutic products, using 2'-*O*-Methyl oligonucleotide sequences[9], such as GEM^{R}132 being developed for HCMV treatment[10].
- Antisense ONS have inhibited several gene functions in mammalian cell lines such as myc, bcl-2 (relevant to lymphomas), and erb-B2 (relevant to breast cancer).

References

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10. Michael, J. G. *XII International Roundtable, Nucleosides, Nucleotides & Their Biological Applications*, **1996**, La Jolla, CA, Sep 15-19, Abstract 0850.

ChemGenes offers a number of special modified phosphoramidites: new modifications of Antisense producing oligos.

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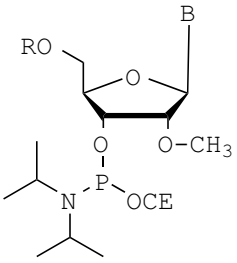
2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides



2′-O-Methyl RNA Amidites With Standard Base Protection

R	B	Protection	Catalog#	CAS No.
DMTr	A	*N*-Bz	ANP-5751	110782-31-5
DMTr	C	*N*-Bz	ANP-5752	110764-78-8
DMTr	G	*N*-*i*Bu	ANP-5753	150780-67-9
DMTr	U	N/A	ANP-5754	110764-79-9
DMTr	C	*N*-Ac	ANP-6756	199593-09-4
MMTr	A	*N*-Bz	ANP-5756	
MMTr	G	*N*-*i*Bu	ANP-5757	

Catalog#	Product name	250mg	500mg	1g	2g	5g	10g
ANP-5751	2′-*O*-Methyl-adenosine (*N*-Bz)-3′-CEP, *M.W. 887.96*	$45.00	$81.00	$146.00	$263.00	$657.00	$1,183.00
ANP-5752	2′-*O*-Methyl-cytidine (*N*-Bz)-3′-CEP, *M.W. 863.93*	$45.00	$81.00	$146.00	$263.00	$657.00	$1,183.00
ANP-5753	2′-*O*-Methyl-guanosine (*N*-*i*Bu)-3′-CEP, *M.W. 869.94*	$45.00	$81.00	$146.00	$263.00	$657.00	$1,183.00
ANP-5754	2′-*O*-Methyl-uridine-3′-CEP, *M.W. 760.81*	$45.00	$81.00	$146.00	$263.00	$657.00	$1,183.00
ANP-6756	2′-*O*-Methyl-cytidine (*N*-Ac)-3′-CEP, *M.W. 801.86*	$45.00	$81.00	$146.00	$263.00	$657.00	$1,183.00
ANP-5756	5′-*O*-MMTr-2′-*O*-Methyl-adenosine (*N*-Bz)-3′-CEP, *M.W. 857.93*	$45.00	$81.00	$146.00	$263.00	$657.00	$1,183.00
ANP-5757	5′-*O*-MMTr-2′-*O*-Methyl-guanosine (*N*-*i*Bu)-3′-CEP, *M.W. 839.92*	$45.00	$81.00	$146.00	$263.00	$657.00	$1,183.00

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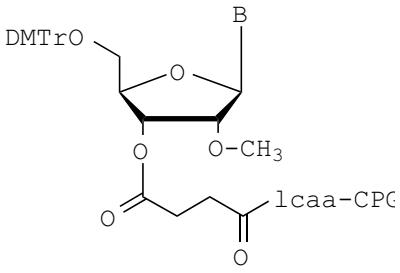

2′-O-Methyl RNA Supports With Standard Base Protection

B	Protection	Catalog#
A	*N*-Bz	N-7910
C	*N*-Bz	N-7911
G	*N*-*i*Bu	N-7912
U	N/A	N-7904
C	*N*-Ac	N-7905
G	*N*-DMF	N-7914

			Bulk CPG			pack of 4 cols.			each		pack of 10 cols.		
Catalog #	Product Name	Pore Size	100 mg	250 mg	1 g	40 nmole	0.2 µmole	1.0 µmole	10 µmole	15 µmole	40 nmole	0.2 µmole	1.0 µmole
N-7910-05	2′-*O*-Methyl-adenosine	500Å											
N-7910-10	(*N*-Bz)-3′-lcaa CPG	1000Å	$38	$80	$285	$50	$60	$75	$150	$225	$100	$120	$150
N-7911-05	2′-*O*-Methyl-cytidine	500Å											
N-7911-10	(*N*-Bz)-3′-lcaa CPG	1000Å	$38	$80	$285	$50	$60	$75	$150	$225	$100	$120	$150
N-7912-05	2′-*O*-Methyl-guanosine	500Å											
N-7912-10	(*N*-*i*Bu)-3′-lcaa CPG	1000Å	$38	$80	$285	$50	$60	$75	$150	$225	$100	$120	$150
N-7904-05	2′-*O*-Methyl-uridine-	500Å											
N-7904-10	3′-lcaa CPG	1000Å	$38	$80	$285	$50	$60	$75	$150	$225	$100	$120	$150
N-7905-05	2′-*O*-Methyl-cytidine	500Å											
N-7905-10	(*N*-Ac)-3′-lcaa CPG	1000Å	$38	$80	$285	$50	$60	$75	$150	$225	$100	$120	$150
N-7914-05	2′-*O*-Methyl-guanosine	500Å											
N-7914-10	(*N*-DMF)-3′-lcaa CPG	1000Å	$38	$80	$285	$50	$60	$75	$150	$225	$100	$120	$150

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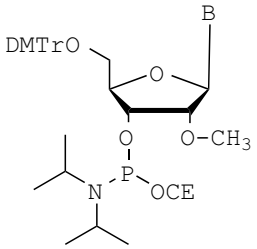
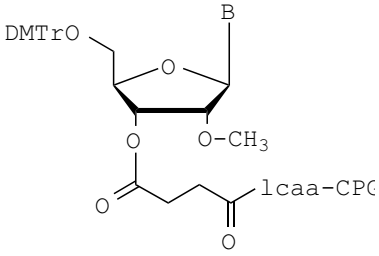
2′-O-Methyl RNA Amidites With Labile (Mild) Base Protection



B	Protection	Catalog#	CAS No.
A	*N*-PAC	ANP-6751	128219-82-9
C	*N*-PAC	ANP-6752	
G	*N*-PAC	ANP-6753	138906-79-3
G	*N*-DMF	ANP-6759	128219-77-2
U	N/A	ANP-5754	110764-79-9
G	*N*-*i*PrPAC	ANP-5761	

Catalog#	Product name	250mg	500mg	1g	2g	5g	10g
ANP-6751	2′-*O*-Methyl-adenosine (*N*-PAC)-3′-CEP, *M.W. 917.98*	$56.00	$101.00	$182.00	$328.00	$73.00	$1,329.00
ANP-6752	2′-*O*-Methyl-cytidine (*N*-PAC)-3′-CEP, *M.W. 893.96*	$56.00	$101.00	$182.00	$328.00	$738.00	$1,329.00
ANP-6753	2′-*O*-Methyl-guanosine (*N*-PAC)-3′-CEP, *M.W. 933.98*	$56.00	$101.00	$182.00	$328.00	$738.00	$1,329.00
ANP-6759	2′-*O*-Methyl-guanosine (*N*-DMF)-3′-CEP, *M.W. 854.93*	$56.00	$101.00	$182.00	$328.00	$738.00	$1,329.00
ANP-5754	2′-*O*-Methyl-uridine-3′-CEP, *M.W. 760.81*	$45.00	$81.00	$146.00	$263.00	$657.00	$1,183.00
ANP-5761	2′-*O*-Methyl-guanosine (*N*-*i*PrPAC)-3′-CEP, *M.W. 976.06*	$56.00	$101.00	$182.00	$328.00	$738.00	$1,329.00



Solid Supports for 2′-O-Methyl RNA with Labile (Mild) Base Protection

B	Protection	Catalog#
A	*N*-PAC	N-P7901
C	*N*-PAC	N-P7902
G	*N*-PAC	N-P7903

			Bulk CPG		pack of 4 cols.			pack of 10 cols.		
Catalog #	Product Name	Pore Size	100 mg	1 g	40 nmole	0.2 µmole	1.0 µmole	40 nmole	0.2 µmole	1.0 µmole
N-P7901-05	2′-*O*-Methyl-adenosine	500Å								
N-P7901-10	(*N*-PAC)-3′-lcaa CPG	1000Å	$86	$290	$50	$60	$75	$100	$120	$150
N-P7902-05	2′-*O*-Methyl-cytidine	500Å								
N-P7902-10	(*N*-PAC)-3′-lcaa CPG	1000Å	$86	$290	$50	$60	$75	$100	$120	$150
N-P7903-05	2′-*O*-Methyl-guanosine	500Å								
N-P7903-10	(*N*-PAC)-3′-lcaa CPG	1000Å	$86	$290	$50	$60	$75	$100	$120	$150

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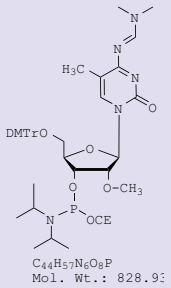
2′-*O*-Methyl-5-methyl-cytidine (N-DMF)-3′-CEP

(5-Methyl-cytidine-2′-*O*-Methyl (N-DMF)-3′-CEP)



$C_{44}H_{57}N_6O_8P$
Mol. Wt.: 828.9

Catalog#

ANP-6554

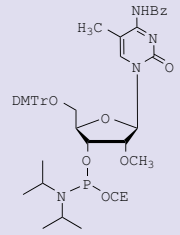
Pricing

$260.00 / 100 µmole
$900.00 / 250 mg
$1220.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-5-methyl-cytidine (N-Bz)-3′-CEP

(5-Methyl-cytidine (N-Bz)-2′-*O*-Methyl-3′-CEP)



$C_{48}H_{56}N_5O_9P$
Mol. Wt.: 877

Catalog#

ANP-6556

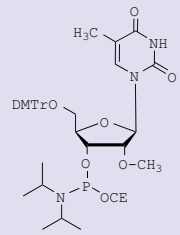
Pricing

$225.00 / 100 µmole
$575.00 / 250 mg
$2588.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-5-methyl-uridine-3′-CEP

(2′-*O*-Methyl-ribothymidine-3′-CEP)



$C_{41}H_{51}N_4O_9P$
Mol. Wt.: 774.84

Catalog#

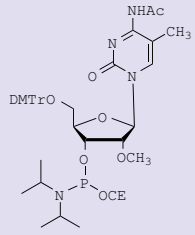
ANP-5600

Pricing

$140.00 / 100 µmole
$400.00 / 250 mg
$720.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-5-methyl-cytidine (N-Ac)-3′-CEP



$C_{43}H_{54}N_5O_9P$
Mol. Wt.: 815.8

Catalog#

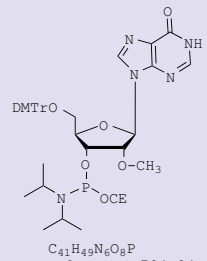
ANP-6555

Pricing

$225.00 / 100 µmole
$615.00 / 250 mg
$1105.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-inosine-3′-CEP



$C_{41}H_{49}N_6O_8P$
Mol. Wt.: 784.84

Catalog#

ANP-5758

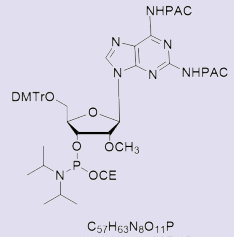
Pricing

$135.00 / 100 µmole
$385.00 / 250 mg
$693.00 / 500 mg

Purity: 98% +

CAS No. 128219-85-2

2′-*O*-Methyl-2,6-diamino (N^2, N^6-diPAC)-purine-riboside-3′-CEP



$C_{57}H_{63}N_8O_{11}P$
Mol. Wt. : 1067.15

Catalog#

ANP-8519

Pricing

$350.00 / 100 µmole
$715.00 / 250 mg
$1287.00 / 500 mg

Purity: 98% +

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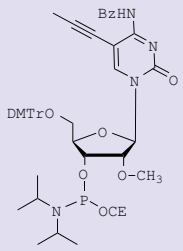
2′-*O*-Methyl-5-propynyl-cytidine (N-Bz)-3′-CEP

(5-Propynyl-2′-*O*-Methyl-cytidine (N-Bz)-3′-CEP)



$C_{50}H_{56}N_5O_9P$
Mol. Wt.: 901.98

Catalog#

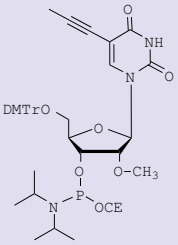
ANP-1874

Pricing

$330.00 / 100 µmole
$815.00 / 250 mg
$1465.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-5-propynyl-uridine-3′-CEP



$C_{43}H_{51}N_4O_9P$
Mol. Wt.: 798.

Catalog#

ANP-1347

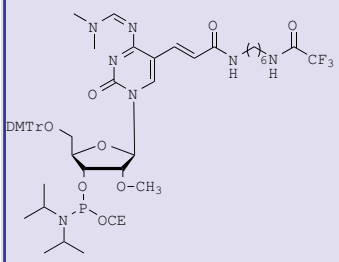
Pricing

$320.00 / 100 µmole
$900.00 / 250 mg
$1620.00 / 500 mg

Purity: 98% +

Amino Modifier-2′-*O*-methyl-cytidine (N-DMF) CEP

(Amino Modifier-2′-*O*-Methyl-cytidine (N-DMF)-C-6-3′-CEP)



$C_{48}H_{58}F_3N_8O_{10}P$
Mol. Wt.: 994.99

Catalog#

ANP-2583

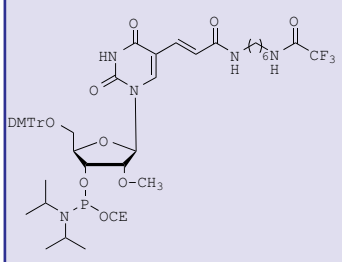
Pricing

$370.00 / 100 µmole
$769.00 / 250 mg
$1384.00 / 500 mg

Purity: 98% +

Amino Modifier-2′-*O*-methyl uridine CEP

(Amino Modifier 2′-*O*-Methyl-uridine C-6-3′-CEP)



$C_{45}H_{52}F_3N_6O_{11}P$
Mol. Wt.: 940.90

Catalog#

ANP-2581

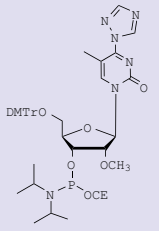
Pricing

$325.00 / 100 µmole
$769.00 / 250 mg
$1384.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-4-triazolyl-5-methyl uridine-3′-CEP

(4-Triazolyl-5′-DMTr-2′-*O*-Methyl-5-methyl uridine-3′-CEP)



$C_{43}H_{52}N_7O_8P$
Mol. Wt.:825.

Catalog#

ANP-5604

Pricing

$300.00 / 100 µmole
$810.00 / 250 mg
$1457.00 / 500 mg

Purity: 98% +

2′-O-Methyl-5-propynyl-cytidine (pdC) & 2′-O-Methyl-5-propynyl-uridine (pdU)

The substitution of dC and dT in antisense phosphorothioate oligonucleotides with C-5 propynyl analogues pdC and pdU respectively, showed effective inhibition of gene expression. Both 2'-deoxy and 2'-OMe nucleotides incorporated into oligonucleotides have higher duplex stability compared to natural bases.[1]

1. Wagner, R. W.; Matteucci, M. D.; Lewis, J. G.; Gutierrez, A. G.; Moulds, C.; Froeller, B. C. *Science*, **1993**, *260*, 1510.

Amino modifier cytidine & amino modifier uridine

Amino modifier cytidine and amino modifier uridine can be used for internal oligonucleotide labeling with reporter molecules. In that case the reporter molecule has minimal interference with base pairing during hybridization process.

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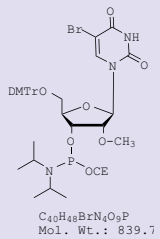
2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides

2′-*O*-Methyl-5-bromo-uridine-3′-CEP

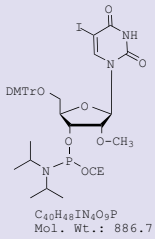


Catalog# ANP-576

Pricing
$220.00 / 100 µmole
$595.00 / 250 mg
$1071.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-5-iodo-uridine-3′-CEP

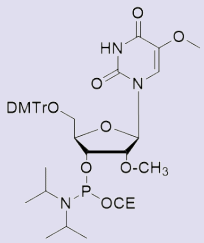


Catalog# ANP-5759

Pricing
$220.00 / 100 µmole
$650.00 / 250 mg
$1100.00 / 500 mg

Purity: 98% +

2'-O-Methyl-5-Methoxy Uridine-3′-CEP

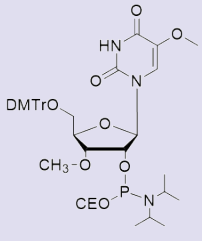


Catalog# ANP-3785

Pricing
$360.00 / 100 mg
$610.00 / 250 mg
$1290.00 / 500 mg

Purity: 98% +

3'-O-Methyl-5-Methoxy Uridine-2′-CEP

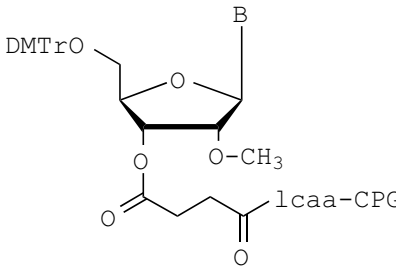


Catalog# ANP-3784

Pricing
$380.00 / 100 mg
$830.00 / 250 mg
$1310.00 / 500 mg

Purity: 98% +

Modified 2′-O-Methyl 3′-Succinyl lcaa Supports & Columns



B	Protection	Catalog#
5-Me C	*N*-DMF	N-1613
5-Me C	*N*-Bz	N-1613Bz
I	N/A	N-9013
5-Br U	N/A	N-9011
5-Iodo U	N/A	N-9012
T	N/A	N-5601

Modified 2′-O-Methyl 3′-Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 250 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-1613-05 N-1613-10	2′-*O*-Methyl-5-methyl-cytidine (*N*-DMF)-3′-lcaa CPG	500Å 1000Å	$230	$900	$125	$200	$250	$400
N-1613Bz-05 N-1613Bz-10	2′-*O*-Methyl-5-methyl-cytidine (*N*-Bz)-3′-lcaa CPG	500Å 1000Å	$230	$900	$125	$200	$250	$400
N-9013-05 N-9013-10	2′-*O*-Methyl-inosine-3′-lcaa CPG	500Å 1000Å	$230	$900	$125	$200	$250	$400
N-9011-05 N-9011-10	2′-*O*-Methyl-5-bromo-uridine-3′-lcaa CPG	500Å 1000Å	$230	$900	$125	$200	$250	$400
N-9012-05 N-9012-10	2′-*O*-Methyl-5-iodo-uridine-3′-lcaa CPG	500Å 1000Å	$230	$900	$125	$200	$250	$400
N-5601-05 N-5601-10	2′-*O*-Methyl-ribothymidine-3′-lcaa CPG	500Å 1000Å	$190	$750	$100	$175	$200	$350

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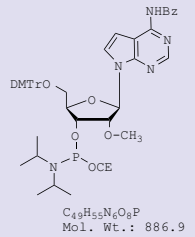
2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides

2′-*O*-Methyl-7-deaza-adenosine-3′-CEP

(7-Deaza-2′-*O*-Methyl-adenosine (N-Bz)-3′-CEP)



Catalog# ANP-5951

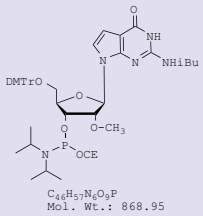
Pricing

$264.00 / 50 µmole
$476.00 / 100 µmole
$1200.00 / 250 mg
$2160.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-7-deaza-guanosine-3′-CEP

(7-Deaza-2′-*O*-Methyl-guanosine (N-iBu)-3′-CEP)



Catalog# ANP-5953

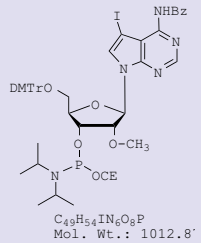
Pricing

$279.00 / 50 µmole
$495.00 / 100 µmole
$1280.00 / 250 mg
$2300.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-7-iodo-7-deaza-adenosine-3′-CEP

(7-Iodo-7-deaza-2′-*O*-Methyl-adenosine (N-Bz)-3′-CEP)



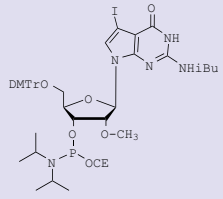
Catalog# ANP-9171

Pricing

$320.00 / 50 µmole
$576.00 / 100 µmole
$1290.00 / 250 mg
$2320.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-7-iodo-7-deaza-guanosine-3′-CEP



Catalog# ANP9173

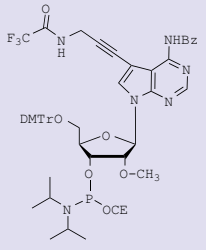
Pricing

$320.00 / 50 µmole
$576.00 / 100 µmole
$1290.00 / 250 mg
$2320.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-7-deaza-7-propargyl-adenosine-3′-CEP

(7-Deaza-7-propargylamino (TFA)-2′-*O*-Methyl-adenosine (N-Bz)-3′-CEP)



Catalog# ANP-9176

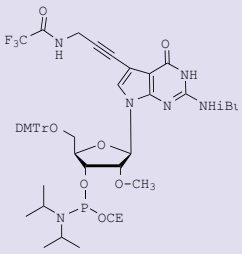
Pricing

$380.00 / 50 µmole
$684.00 / 100 µmole
$1480.00 / 250 mg
$2665.00 / 500 mg

Purity: 98% +

2′-*O*-Methyl-7-deaza-7-propargyl-guanosine-3′-CEP

(7-Deaza-7-propargylamino (TFA)-2′-*O*-Methyl-guanosine (N-iBu)-3′-CEP)



Catalog# ANP-9178

Pricing

$380.00 / 50 µmole
$684.00 / 100 µmole
$1480.00 / 250 mg
$2665.00 / 500 mg

Purity: 98% +

Amino modifier cytidine CEP and amino modifier uridine CEP

Amino modifier cytidine and amino modifier uridine can be used for internal oligonucleotide labeling with reporter molecules. In that case the reporter molecule has minimal interference with base pairing during hybridization process.

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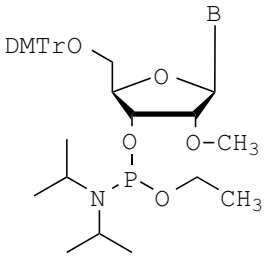
Oligo Synthesis Products

Amidites and Supports for 2′-O-Alkyl/Antisense Oligonucleotides



2′-*O*-Methyl RNA Ethyl Phosphoramidite with Standard Base Protection

B	Protection	Catalog #
A	*N*-Bz	ANP-7221
C	*N*-Bz	ANP-7222
G	*N*-*i*Bu	ANP-7223
T	N/A	ANP-7224
U	N/A	ANP-7225

Catalog #	Product Name	250mg	500mg	1g	2g	5g	10g
ANP-7221	2′-*O*-Methyl-adenosine (*N*-Bz)-3′-ethyl phosphoramidite, *M.W. 862.95*	$65.00	$117.00	$210.00	$378.00	$851.00	$1,530.00
ANP-7222	2′-*O*-Methyl-cytidine (*N*-Bz)-3′-ethyl phosphoramidite, *M.W. 838.90*	$65.00	$117.00	$210.00	$378.00	$851.00	$1,530.00
ANP-7223	2′-*O*-Methyl-guanosine (*N*-*i*Bu)-3′-ethyl phosphoramidite, *M.W. 844.92*	$65.00	$117.00	$210.00	$378.00	$851.00	$1,530.00
ANP-7224	2′-*O*-Methyl-ribothymidine-3′-ethyl phosphoramidite, *M.W. 749.83*	$65.00	$117.00	$210.00	$378.00	$851.00	$1,530.00
ANP-7225	2′-*O*-Methyl-uridine-3′-ethyl phosphoramidite, *M.W. 735.80*	$65.00	$117.00	$210.00	$378.00	$851.00	$1,530.00

Applications:

For the synthesis of DNA/RNA with neutral charge instead of a negatively charged phosphate back bone, *P*-Ethoxys not only provide neutral charge but impart lipophilic character to the synthetic DNA. It is a useful product for the development of delivery of DNA molecules into cells. With the already established usefulness of 2′-*O*-Methyl RNA, additional backbone modification to the phosphate neutral charge would provide valuable products in the field of antisense therapeutics.

The above products are covered under ChemGenes patent title: Oligonucleotide phosphate esters US#6,015,886.

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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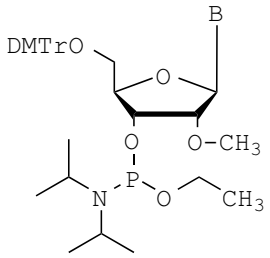
Oligo Synthesis Products

2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides



2′-*O*-Methyl RNA Ethyl Phosphoramidite with Labile Base Protection

B	Protection	Catalog #
A	*N*-PAC	ANP-7227
C	*N*-PAC	ANP-7228
G	*N*-PAC	ANP-7226

Catalog #	Product Name	250mg	500mg	1g	2g	5g	10g
ANP-7227	2′-*O*-Methyl-adenosine (*N*-PAC) 3′-Ethyl phosphoramidite, *M.W. 892.97*	$78.00	$128.00	$230.00	$415.00	$935.00	$1,683.00
ANP-7228	2′-*O*-Methyl-cytidine (*N*-PAC)- 3′-Ethyl phosphoramidite, *M.W. 868.95*	$78.00	$128.00	$230.00	$415.00	$935.00	$1,683.00
ANP-7226	2′-*O*-Methyl-guanosine (*N*-PAC)- 3′-Ethyl phosphoramidite, *M.W. 908.97*	$78.00	$128.00	$230.00	$415.00	$935.00	$1,683.00

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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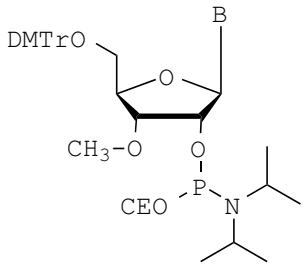
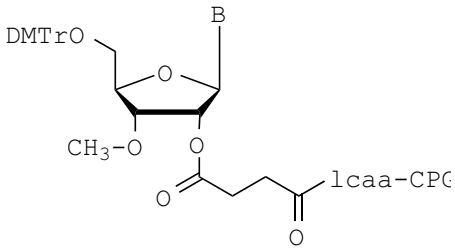


3′-O-Methyl Amidites with Standard Base Protection

B	Protection	Catalog#	CAS No.
A	*N*-Bz	ANP-2901	179479-02-8
C	*N*-Bz	ANP-2902	179479-03-9
G	*N*-*i*Bu	ANP-2903	
U	N/A	ANP-2904	179479-05-1
I	N/A	ANP-2905	
C	*N*-Ac	ANP-2906	
T	N/A	ANP-2907	

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-2901	3′-*O*-Methyl-adenosine (*N*-Bz)-2′-CEP, *M.W. 887.96*	$165.00	$294.00	$530.00	$954.00	$2,145.00
ANP-2902	3′-*O*-Methyl-cytidine (*N*-Bz)-2′-CEP, *M.W. 863.93*	$165.00	$294.00	$530.00	$954.00	$2,145.00
ANP-2903	3′-*O*-Methyl-guanosine (*N*-*i*Bu)-2′-CEP, *M.W. 869.94*	$165.00	$294.00	$530.00	$954.00	$2,145.00
ANP-2904	3′-*O*-Methyl-uridine-2′-CEP, *M.W. 760.81*	$165.00	$294.00	$530.00	$954.00	$2,145.00
ANP-2905	3′-*O*-Methyl-inosine-2′-CEP, *M.W. 784.84*	$165.00	$294.00	$530.00	$954.00	$2,145.00
ANP-2906	3′-*O*-Methyl-cytidine (*N*-Ac)-2′-CEP, *M.W. 801.86*	$165.00	$294.00	$530.00	$954.00	$2,145.00
ANP-2907	3′-*O*-Methyl-ribothymidine-2′-CEP, *M.W. 774.84*	$165.00	$294.00	$530.00	$954.00	$2,145.00



3′-O-Methyl Supports with Standard Base Protection

B	Protection	Catalog #
A	*N*-Bz	N-8810
C	*N*-Bz	N-8811
G	*N*-*i*Bu	N-8812
U	N/A	N-8813
I	N/A	N-8814

Catalog #	Product Name	Pore Size	Bulk CPG 250 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-8810-05 N-8810-10	3′-*O*-Methyl-adenosine (*N*-Bz)-2′-lcaa CPG	500Å 1000Å	$125	$480	$ 95	$120	$190	$240
N-8811-05 N-8811-10	3′-*O*-Methyl-cytidine (*N*-Bz)-2′-lcaa CPG	500Å 1000Å	$125	$480	$ 95	$120	$190	$240
N-8812-05 N-8812-10	3′-*O*-Methyl-guanosine (*N*-*i*Bu)-2′-lcaa CPG	500Å 1000Å	$125	$480	$ 95	$120	$190	$240
N-8813-05 N-8813-10	3′-*O*-Methyl-uridine-2′-lcaa CPG	500Å 1000Å	$125	$480	$ 95	$120	$190	$240
N-8814-05 N-8814-10	3′-*O*-Methyl-inosine-2′-lcaa CPG	500Å 1000Å	$250	$900	$135	$245	$270	$490

The above products are covered under ChemGenes patent title: *N*-protected-2′-O-methyl-and *N*-protected-3′-O-methyl-ribonucleosides and their phosphoramidite derivatives US#5,525,719.

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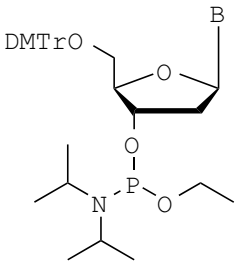
Oligo Synthesis Products

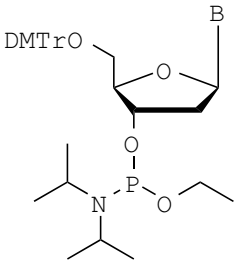
2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides



DNA Ethyl Phosphoramidites with Standard Base Protection

B	Protection	Catalog#
A	*N*-Bz	ANP-6541
C	*N*-Bz	ANP-6542
G	*N*-*i*Bu	ANP-6543
T	N/A	ANP-6544

Catalog #	Product Name	250 mg	500mg	1g	2g	5g
ANP-6541	2′-deoxyadenosine (*N*-Bz) 3′-Ethyl-phosphoramidite *M.W. 832.92*	$24	$45	$80	$144	$324
ANP-6542	2′-deoxycytidine (*N*-Bz) 3′-Ethyl-phosphoramidite *M.W. 808.90*	$24	$45	$80	$144	$324
ANP-6543	2′-deoxyguanosine (*N*-*i*Bu) 3′-Ethyl-phosphoramidite *M.W. 814.91*	$24	$45	$80	$144	$324
ANP-6544	Thymidine 3′-Ethyl-phosphoramidite, *M.W. 719.80*	$24	$45	$80	$144	$324



DNA Ethyl Phosphoramidites with Labile (mild) Base Protection

B	Protection	Catalog #
A	*N*-PAC	ANP-5541
C	*N*-PAC	ANP-5542
G	*N*-PAC	ANP-5543
T	N/A	ANP-6544

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-5541	2′-deoxyadenosine (*N*-PAC) 3′-Ethyl-phosphoramidite *M.W. 862.95*	$27.00	$48.00	$90.00	$160.00	$360.00
ANP-5542	2′-deoxycytidine (*N*-PAC) 3′-Ethyl-phosphoramidite *M.W. 838.92*	$27.00	$48.00	$90.00	$160.00	$360.00
ANP-5543	2′-deoxyguanosine (*N*-PAC) 3′-Ethyl-phosphoramidite *M.W. 935.05*	$27.00	$48.00	$90.00	$160.00	$360.00
ANP-6544	Thymidine 3′-Ethyl-phosphoramidite, *M.W. 719.80*	$24.00	$45.00	$80.00	$144.00	$324.00

Applications:

For the synthesis of DNA/RNA with neutral charge instead of a negatively charged phosphate backbone, ethyl phosphoramidites not only provide neutral charge but impart lipophilic character to the synthetic DNA. It is a useful product for the development of delivery of DNA molecules into cells. For clean removal of the base protecting groups using ammonia free deprotection solution, see the page 101.

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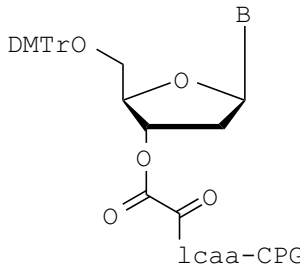
Oligo Synthesis Products

Amidites and Supports for 2′-O-Alkyl/Antisense Oligonucleotides



Oxalyl Supports with Labile (mild) Base Protection for DNA Synthesis

B	Protection	Catalog #
A	*N*-PAC	N-5131
C	*N*-PAC	N-5132
G	*N*-PAC	N-5133
T	N/A	N-5134

			Bulk CPG		pack of 4 cols.			pack of 10 cols.		
Catalog #	Product Name	Pore Size	100 mg	1 g	40 µmole	0.2 µmole	1.0 µmole	40 µmole	0.2 µmole	1.0 µmole
N-5131-05	3′-Oxalyl-2′-deoxy-adenosine (*N*-PAC)-3′-lcaa CPG	500Å	$18	$144	$32	$39	$58	$64	$78	$116
N-5132-05	3′-Oxalyl-2′-deoxy-cytidine (*N*-PAC)-3′-lcaa CPG	500Å	$18	$144	$32	$39	$58	$64	$78	$116
N-5133-05	3′-Oxalyl-2′-deoxy-guanosine (*N*-PAC)-3′-lcaa CPG	500Å	$18	$144	$32	$39	$58	$64	$78	$116
N-5134-05	3′-Oxalyl-thymidine-3′-lcaa CPG	500Å	$18	$144	$32	$39	$58	$64	$78	$116

Ammonia Free Oligo Deprotection Solution can be used with the following CPGs:

1. PAC-protected nucleoside phosphoramidites must be used for efficient base deprotection using ammonia free oligo deprotection solution.
2. Oxalyl CPGs can be cleaved from the solid support using ammonia free oligo deprotection solution. The standard succinyl CPGs will not get adequately deprotected when using ammonia free oligo deprotection solution. The synthesized oligo attached on the CPG is washed with diethyl ether, followed by air drying is placed in a vial. Ammonia free oligo deprotection solution is added and the vial is kept seal during the cleavage and deprotection.

Ammonia Free Oligo Deprotection Solution

Catalog#	Pricing
RN-1435	$35.00 / 25 ml
	$55.00 / 50 ml
	$75.00 / 100 ml

For oxalyl RNA supports please refer to page # 59

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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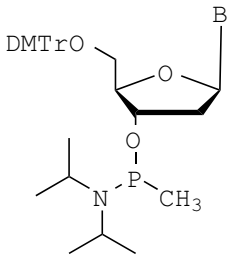
Oligo Synthesis Products

2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides



DNA Methyl Phosphonamidites with Standard Base Protection

B	Protection	Catalog#	CAS No.
A	*N*-Bz	ANP-7551	114079-05-9
C	*N*-*i*Bu	ANP-7556	
G	*N*-*i*Bu	ANP-7553	115131-08-3
T	N/A	ANP-7554	114079-04-8
U	N/A	ANP-7557	
I	N/A	ANP-7558	

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-7551	2′-Deoxyadenosine (*N*-Bz) 3′-[(Methyl)-(*N*,*N*-diisopropyl)] phosphonamidite *M.W. 802.90*	$50.00	$90.00	$162.00	$292.00	$655.00
ANP-7556	2′-Deoxycytidine (*N*-*i*Bu) 3′-[(Methyl)-(*N*,*N*-diisopropyl)] phosphonamidite *M.W. 744.86*	$50.00	$90.00	$162.00	$292.00	$655.00
ANP-7553	2′-Deoxyguanosine (*N*-*i*Bu) 3′-[(Methyl)-(*N*,*N*-diisopropyl)] phosphonamidite *M.W. 784.88*	$50.00	$90.00	$162.00	$292.00	$655.00
ANP-7554	Thymidine 3′-[(Methyl)-(*N*,*N*-diisopropyl)] phosphonamidite *M.W. 689.78*	$50.00	$90.00	$162.00	$292.00	$655.00
ANP-7557	2′-Deoxyuridine 3′-[(Methyl)-(*N*,*N*-diisopropyl)]phosphonamidite *M.W. 675.75*	$50.00	$90.00	$162.00	$292.00	$655.00
ANP-7558	2′-Deoxyinosine 3′-[(Methyl)-(*N*,*N*-diisopropyl)]phosphonamidite *M.W. 699.78*	$50.00	$90.00	$162.00	$292.00	$655.00

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
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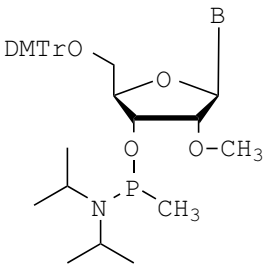
2'-O-Alkyl Modified Amidites & Support /Antisense Oligonucleotides



2'-O-Methyl RNA Methyl Phosphonamidites with Standard Base Protection

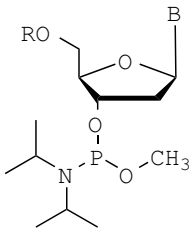
B	Protection	Catalog#	CAS No.
A	*N*-Bz	ANP-8551	110782-30-4
C	*N*-*i*Bu	ANP-8552	
G	*N*-*i*Bu	ANP-8553	
U	N/A	ANP-8554	110764-77-7
C	*N*-Ac	ANP-8556	

Catalog #	Product Name	250 mg	500mg	1g	2g	5g
ANP-8551	2'-*O*-Methyl-adenosine (*N*-Bz) 3'-[(Methyl)-(*N*,*N*-diisopropyl)]-phosphonamidite *M.W. 832.92*	$165.00	$297.00	$535.00	$963.00	$2,165.00
ANP-8552	2'-*O*-Methyl-cytidine (*N*-*i*Bu) 3'-[(Methyl)-(*N*,*N*-diisopropyl)]-phosphonamidite *M.W. 774.88*	$165.00	$297.00	$535.00	$963.00	$2,165.00
ANP-8553	2'-*O*-Methyl-guanosine (*N*-*i*Bu) 3'-[(Methyl)-(*N*,*N*-diisopropyl)]-phosphonamidite *M.W. 814.91*	$165.00	$297.00	$535.00	$963.00	$2,165.00
ANP-8554	2'-*O*-Methyl-uridine 3'-[(Methyl)-(*N*,*N*-diisopropyl)]-phosphonamidite *M.W. 705.78*	$165.00	$297.00	$535.00	$963.00	$2,165.00
ANP-8556	2'-*O*-Methyl-cytidine (*N*-Ac) 3'-[(Methyl)-(*N*,*N*-diisopropyl)]-phosphonamidite *M.W. 746.83*	$165.00	$297.00	$535.00	$963.00	$2,165.00

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides



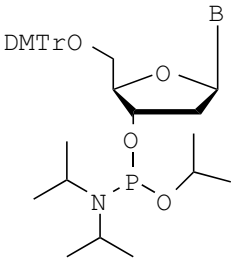
DNA Methyl Phosphoramidites with Labile (mild) Base Protection **

R	B	Protection	Catalog#	CAS No.
DMTr	A	*N*-PAC	ANP-5531	
DMTr	C	*N*-PAC	ANP-5532	
DMTr	G	*N*-*t*BPAC	ANP-5533	
DMTr	T	N/A	ANP-3764	84416-85-3
MMTr	A	*N*-PAC	ANP-5536	
MMTr	G	*N*-*t*BPAC	ANP-5537	

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-5531	2′-Deoxy-Adenosine (*N*-PAC) 3′-methyl phosphoramidite, *M.W.848.92*	$30.00	$54.00	$97.00	$175.00	$395.00
ANP-5532	2′-Deoxy-Cytidine (*N*-PAC) 3′-methyl phosphoramidite, *M.W. 824.90*	$30.00	$54.00	$97.00	$175.00	$395.00
ANP-5533	2′-Deoxy-Guanosine (*N*-*t*BPAC) 3′-methyl phosphoramidite, *M.W. 921.03*	$30.00	$54.00	$97.00	$175.00	$395.00
ANP-3764	Thymidine 3′-methyl phosphoramidite, *M.W. 705.78*	$20.00	$36.00	$75.00	$145.00	$263.00
ANP-5536	5′-MMTr-2′-Deoxy-adenosine (*N*-PAC) 3′-methyl phosphoramidite, *M.W. 818.90*	$30.00	$54.00	$97.00	$175.00	$395.00
ANP-5537	5′-MMTr-2′-Deoxy-Guanosine (*N*-*t*BPAC) 3′-pethyl phosphoramidite, *M.W. 891.00*	$30.00	$54.00	$97.00	$175.00	$395.00

**With proper care, using base labile protecting groups and Ammonia free deprotection solution, it is possible to synthesize *P*-Methoxy tri-ester oligonucleotides.

For Ammonia Free Oligo Deprotection Solution (Catalog # RN-1435) that can be used with methyl phosphoramidites with labile PAC protecting groups, refer to page 101.
For a discription of the advantages of using 5′-MMTr nucleoside phosphoramidites, please see page # 3.



DNA Isopropyl Phosphoramidites with standard Base Protection***

B	Protection	Catalog #	CAS No.
A	*N*-Bz	ANP-6901	
C	*N*-Bz	ANP-6902	
G	*N*-*i*Bu	ANP-6903	
T	N/A	ANP-6904	153922-18-0

Catalog #	Product Name	250mg	500mg	1g	2g	5g
ANP-6901	2′-Deoxy-Adenosine (*N*-Bz)- 3′-isopropyl-phosphoramidite, *M.W. 846.95*	$45.00	$80.00	$144.00	$260.00	$585.00
ANP-6902	2′-Deoxy-Cytidine (*N*-Bz)- 3′-isopropyl-phosphoramidite, *M.W. 822.92*	$45.00	$80.00	$144.00	$260.00	$585.00
ANP-6903	2′-Deoxy-Guanosine (*N*-*i*Bu)- 3′-isopropyl-phosphoramidite, *M.W. 828.93*	$45.00	$80.00	$144.00	$260.00	$585.00
ANP-6904	Thymidine- 3′-isopropyl-phosphoramidite, *M.W. 733.83*	$45.00	$80.00	$144.00	$260.00	$585.00

*** With proper care, using base labile protecting groups and Ammonia free deprotection solution, it is possible to synthesize *P*-Isopropoxy tri-ester oligonucleotides conveniently.

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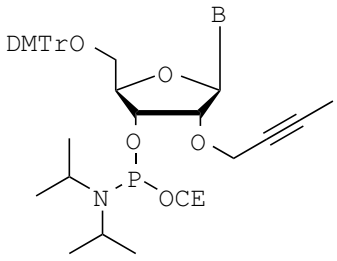
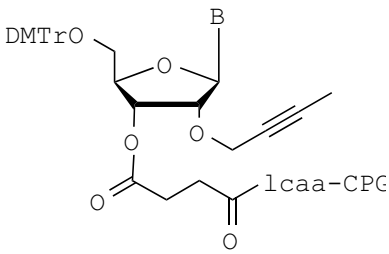


2′-O-(2-Butynyl) RNA Amidites with Standard Base Protection

B	Protection	Catalog#
A	*N*-Bz	ANP-7621
C	*N*-Bz	ANP-7622
G	*N*-*i*Bu	ANP-7623
U	N/A	ANP-7625

Catalog #	Product Name	100µmole	250mg	500mg	1g
ANP-7621	2'-*O*-(2-Butynyl)-Adenosine (*N*-Bz) 3'-CEP, *M.W. 926.01*	$185.00	$450.00	$810.00	$1,450.00
ANP-7622	2'-*O*-(2-Butynyl)-Cytidine (*N*-Bz) 3'-CEP, *M.W. 901.98*	$185.00	$450.00	$810.00	$1,450.00
ANP-7623	2'-*O*-(2-Butynyl)-Guanosine (*N*-*i*Bu) 3'-CEP, *M.W. 907.99*	$185.00	$450.00	$810.00	$1,450.00
ANP-7625	2'-*O*-(2-Butynyl)-Uridine 3'-CEP, *M.W. 798.86*	$185.00	$450.00	$810.00	$1,450.00



2′-O-(2-Butynyl) RNA Supports with Standard Base Protection

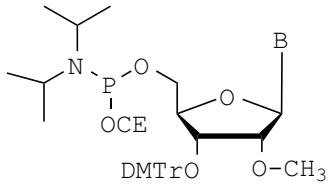
B	Protection	Catalog #
A	*N*-Bz	N-9611
C	*N*-Bz	N-9612
G	*N*-*i*Bu	N-9613
U	N/A	N-9614

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9611-05 N-9611-10	2'-*O*-(2-Butynyl)-Adenosine (*N*-Bz)-3'-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-9612-05 N-9612-10	2'-*O*-(2-Butynyl)-Cytidine (*N*-Bz)-3'-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-9613-05 N-9613-10	2'-*O*-(2-Butynyl)-Guanosine (*N*-*i*Bu)-3'-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-9614-05 N-9614-10	2'-*O*-(2-Butynyl)-Uridine-3'-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190

Oligo Synthesis Products

2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides

2′-O-Methyl RNA Synthesis in Reverse Direction



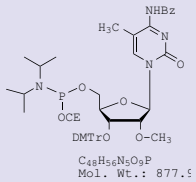
2′-O-Methyl-5′-Phosphoramidites with Standard Base Protection

B	Protection	Catalog#
A	*N*-Bz	ANP-1012
C	*N*-Bz	ANP-1013
G	*N*-*i*Bu	ANP-1014
U	N/A	ANP-1015
C	*N*-Ac	ANP-1019

Catalog #	Product Name	100µmole	250mg	500mg	1g	2g
ANP-1012	2′-*O*-Methyl-adenosine (*N*-Bz)-5′-CEP, *M.W. 887.96*	$100.00	$265.00	$477.00	$859.00	$1,545.00
ANP-1013	2′-*O*-Methyl-cytidine (*N*-Bz)-5′-CEP, *M.W. 863.93*	$100.00	$265.00	$477.00	$859.00	$1,545.00
ANP-1014	2′-*O*-Methyl-guanosine (*N*-*i*Bu)-5′-CEP, *M.W. 869.94*	$100.00	$265.00	$477.00	$859.00	$1,545.00
ANP-1015	2′-*O*-Methyl-uridine-5′-CEP, *M.W. 760.85*	$100.00	$265.00	$477.00	$859.00	$1,545.00
ANP-1019	2′-*O*-Methyl-cytidine (*N*-Ac)-5′-CEP, *M.W. 801.88*	$100.00	$265.00	$477.00	$859.00	$1,545.00

2′-*O*-Methyl-5-methyl-cytidine (N-Bz)-5′-CEP

3′-O-DMT-2′-*O*-Methyl-5-Methyl-cytidine-(N-Bz)-5′-CEP

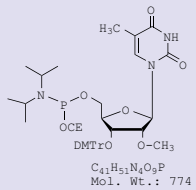


Catalog# ANP-1016

Pricing
$126.00 / 100 µmole
$320.00 / 250 mg
$580.00 / 500 mg
$1040.00 / 1 g

Purity: 98% +

2′-O-Methyl-5-methyl-uridine-5′-CEP



Catalog# ANP-1017

Pricing
$126.00 / 100 µmole
$375.00 / 250 mg
$675.00 / 500 mg
$1215.00 / 1 g

Purity: 98% +

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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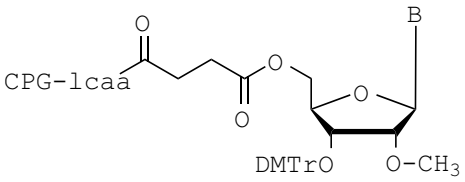
Oligo Synthesis Products

2'-O-Alkyl Modified Amidites & Support /Antisense Oligonucleotides

2′-O-Methyl RNA Synthesis in Reverse Direction



2′-O-Methyl-5′-Supports with Standard Base protection

B	Protection	Catalog #
A	*N*-Bz	N-9912
C	*N*-Bz	N-9913
G	*N*-*i*Bu	N-9914
U	N/A	N-9915
C	*N*-Ac	N-9919
5-Me-C	*N*-Bz	N-9916
5-Me-U	N/A	N-9917

			Bulk CPG	pack of 4 cols.		pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	0.2 µmole	1.0 µmole	0.2 µmole	1.0 µmole
N-9912-05 N-9912-10	2'-*O*-Methyl-adenosine (*N*-Bz)-5'-lcaa CPG	500Å 1000Å	$60	$65	$80	$130	$160
N-9913-05 N-9913-10	2'-*O*-Methyl-cytidine (*N*-Bz)-5'-lcaa CPG	500Å 1000Å	$60	$65	$80	$130	$160
N-9914-05 N-9914-10	2'-*O*-Methyl-guanosine (*N*-iBu)-5'-lcaa CPG	500Å 1000Å	$60	$65	$80	$130	$160
N-9915-05 N-9915-10	2'-*O*-Methyl-uridine-5'-lcaa CPG	500Å 1000Å	$60	$65	$80	$130	$160
N-9919-05 N-9919-10	2'-*O*-Methyl-cytidine (*N*-Ac)-5'-lcaa CPG	500Å 1000Å	$75	$75	$90	$150	$190
N-9916-05 N-9916-10	2'-*O*-Methyl-5-Methyl-cytidine (*N*-Bz)-5'-lcaa CPG	500Å 1000Å	$75	$75	$90	$150	$190
N-9917-05 N-9917-10	2'-*O*-Methyl-5-Methyl-uridine-5'-lcaa CPG	500Å 1000Å	$75	$95	$90	$150	$190

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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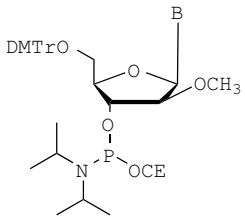
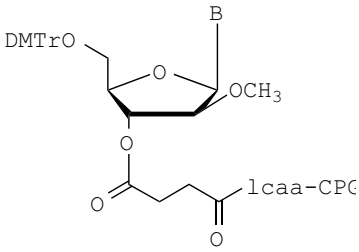


2′-O-Methyl Arabino Amidites with Standard Base protection

B	Protection	Catalog#
A	*N*-Bz	ANP-1716
C	*N*-Bz	ANP-1717
C	*N*-Ac	ANP-1718
G	*N*-*i*Bu	ANP-1719
U	N/A	ANP-1721

Catalog #	Product Name	50µmole	100µmole	250mg	500mg	1g
ANP-1716	2′-*O*-methyl-Arabino Adenosine (*N*-Bz) 3′-CEP, *M.W. 887.96*	$70.00	$126.00	$355.00	$675.00	$1,215.00
ANP-1717	2′-*O*-methyl-Arabino Cytidine (*N*-Bz) 3′-CEP, *M.W. 863.93*	$70.00	$126.00	$355.00	$675.00	$1,215.00
ANP-1718	2′-*O*-methyl-Arabino Cytidine (*N*-Ac) 3′-CEP, *M.W. 801.86*	$70.00	$126.00	$355.00	$675.00	$1,215.00
ANP-1719	2′-*O*-methyl-Arabino Guanosine (*N*-*i*Bu) 3′-CEP, *M.W. 869.94*	$70.00	$126.00	$355.00	$675.00	$1,215.00
ANP-1721	2′-*O*-methyl-Arabino Uridine 3′-CEP, *M.W. 760.81*	$70.00	$126.00	$355.00	$675.00	$1,215.00



Solid Supports for 2′-O-Methyl Arabino with Standard Base protection

B	Protection	Catalog #
A	*N*-Bz	N-7423
C	*N*-Bz	N-7424
C	*N*-Ac	N-7425
G	*N*-*i*Bu	N-7426
U	N/A	N-7427

			Bulk CPG		pack of 4 cols.		pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	1 g	0.2 µmole	1.0 µmole	0.2 µmole	1.0 µmole
N-7423-05 N-7423-10	2′-*O*-methyl-Arabino Adenosine (*N*-Bz)-3′-lcaa CPG	500Å 1000Å	$70	$630	$100	$200	$200	$400
N-7424-05 N-7424-10	2′-*O*-methyl-Arabino Cytidine (*N*-Bz)-3′-lcaa CPG	500Å 1000Å	$70	$630	$100	$200	$200	$400
N-7425-05 N-7425-10	2′-*O*-methyl-Arabino Cytidine (*N*-Ac)-3′-lcaa CPG	500Å 1000Å	$70	$630	$100	$200	$200	$400
N-7426-05 N-7426-10	2′-*O*-methyl-Arabino Guanosine (*N*-iBu)-3′-lcaa CPG	500Å 1000Å	$70	$630	$100	$200	$200	$400
N-7427-05 N-7427-10	2′-*O*-methyl-Arabino Uridine-3′-lcaa CPG	500Å 1000Å	$70	$630	$100	$200	$200	$400

2′-O-Methyl-arabino-amidites are covered by ChemGenes patent, U.S. Patent#. US20120149888

ChemGenes is offering the novel modifications for the Synthesis of 2′-O-Methyl-arabino Nucleosides, Phosphoramidites and Oligonucleotides for Biological Application in Therapeutics, Diagnostics, G-tetrad Forming Oligonucleotides and Aptamers etc.

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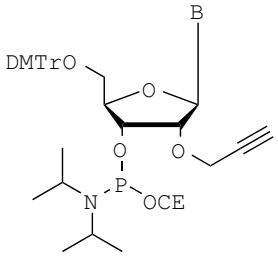
2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides

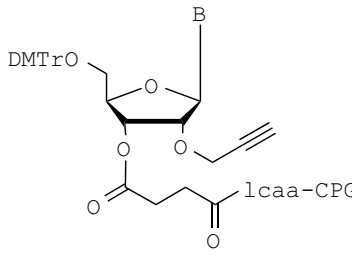
CombiClick™ Chemistry Products



2′-O-Propargyl Amidites with Standard Base Protection

B	Protection	Catalog#
A	*N*-Bz	ANP-7751
C	*N*-Bz	ANP-7752
G	*N*-*i*Bu	ANP-7753
U	N/A	ANP-7754
C	*N*-Ac	ANP-7756
I	N/A	ANP-6191

Catalog #	Product Name	100µmole	250mg	500 mg	1g
ANP-7751	2′-*O*-Propargyl-adenosine (*N*-Bz)-3′-CEP, *M.W. 911.98*	$185.00	$490.00	$880.00	$1,584.00
ANP-7752	2′-*O*-Propargyl-cytidine (*N*-Bz)-3′-CEP, *M.W. 887.96*	$185.00	$490.00	$880.00	$1,584.00
ANP-7753	2′-*O*-Propargyl-guanosine (*N*-*i*Bu)-3′-CEP, *M.W. 893.96*	$185.00	$490.00	$880.00	$1,584.00
ANP-7754	2′-*O*-Propargyl-uridine-3′-CEP, *M.W. 784.83*	$185.00	$490.00	$880.00	$1,584.00
ANP-7756	2′-*O*-Propargyl-cytidine (*N*-Ac)-3′-CEP, *M.W. 825.89*	$185.00	$490.00	$880.00	$1,584.00
ANP-6191	2′-*O*-Propargyl-inosine-3′-CEP, *M.W. 810.89*	$185.00	$490.00	$880.00	$1,584.00



2′-O-Propargyl Supports with Standard Base Protection

B	Protection	Catalog #
A	*N*-Bz	N-8910
C	*N*-Bz	N-8920
G	*N*-*i*Bu	N-8930
U	N/A	N-8940
C	*N*-Ac	N-8960
I	N/A	N-8970

			Bulk CPG	pack of 4 cols.		pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	0.2 µmole	1.0 µmole	0.2 µmole	1.0 µmole
N-8910-05 N-8910-10	2′-*O*-Propargyl-adenosine (*N*-Bz)-3′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-8920-05 N-8920-10	2′-*O*-Propargyl-cytidine (*N*-Bz)-3′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-8930-05 N-8930-10	2′-*O*-Propargyl-guanosine (*N*-iBu)-3′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-8940-05 N-8940-10	2′-*O*-Propargyl-uridine-3′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-8960-05 N-8960-10	2′-*O*-Propargyl-cytidine (*N*-Ac)-3′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-8970-05 N-8970-10	2′-*O*-Propargyl-inosine-3′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190

The Propargyl Amidites Products are covered under ChemGenes patent, U.S. Patent#. 5,744,595

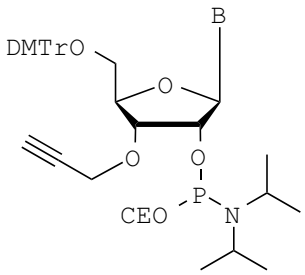
CombiClick™ is the term coined by ChemGenes for Solid Support Based Combinatorial "Click Chemistry" for Efficient Oligonucleotide Conjugation: This is a versatile method for Oligonucleotide Labeling; N. Srivastava and S. Srivastava, A. Laikhter. J Biomol Tech. 2010 September; 21 (3 Suppl) S44.

We have developed a method for efficient attachment of a variety of dyes to the oligonucleotide backbone in nearly quantitative yields (95-98%). This approach allows the synthesis of multiply labeled oligonucleotides in combinatorial fashion during oligonucleotide synthesis on solid support.

Oligo Synthesis Products

2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides

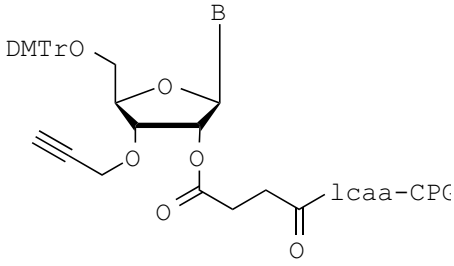
Combiclick™ Chemistry Products



3′-*O*-Propargyl Amidites with Standard Base Protection

B	Protection	Catalog#
A	*N*-Bz	ANP-9751
C	*N*-Bz	ANP-9752
G	*N*-*i*Bu	ANP-9753
U	N/A	ANP-9754
C	*N*-Ac	ANP-9759

Catalog #	Product Name	100µmole	250mg	500 mg	1g	2g
ANP-9751	3′-*O*-Propargyl-adenosine (*N*-Bz)-2′-CEP, *M.W. 911.98*	$185.00	$490.00	$880.00	$1,584.00	$2,850.00
ANP-9752	3′-*O*-Propargyl-cytidine (*N*-Bz)-2′-CEP, *M.W. 887.96*	$185.00	$490.00	$880.00	$1,584.00	$2,850.00
ANP-9753	3′-*O*-Propargyl-guanosine (*N*-iBu)-2′-CEP, *M.W. 893.96*	$185.00	$490.00	$880.00	$1,584.00	$2,850.00
ANP-9754	3′-*O*-Propargyl-uridine-2′-CEP, *M.W. 784.83*	$185.00	$490.00	$880.00	$1,584.00	$2,850.00
ANP-9759	3′-*O*-Propargyl-cytidine (*N*-Ac)-2′-CEP, *M.W. 825.89*	$185.00	$490.00	$880.00	$1,584.00	$2,850.00



3′-*O*-Propargyl Supports with Standard Base Protection

B	Protection	Catalog #
A	*N*-Bz	N-9881
C	*N*-Bz	N-9882
G	*N*-*i*Bu	N-9883
U	N/A	N-9884
C	*N*-Ac	N-9889

Catalog #	Product Name	Pore Size	Bulk CPG cols. 100 mg	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 0.2 µmole	pack of 10 1.0 µmole
N-9881-05 N-9881-10	3′-*O*-Propargyl-adenosine (*N*-Bz)-2′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-9882-05 N-9882-10	3′-*O*-Propargyl-cytidine (*N*-Bz)-2′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-9883-05 N-9883-10	3′-*O*-Propargyl-guanosine (*N*-iBu)-2′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-9884-05 N-9884-10	3′-*O*-Propargyl-uridine-2′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190
N-9889-05 N-9889-10	3′-*O*-Propargyl-cytidine (*N*-Ac)-2′-lcaa CPG	500Å 1000Å	$65	$80	$95	$160	$190

The above Products are covered under ChemGenes patent, U.S. Patent No. 5,744,595

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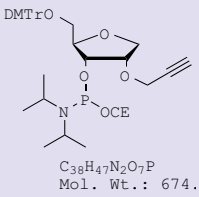
2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides

Combiclick™ Chemistry Products

2-O-Propargyl-abasic-phosphoramidite
(2-O-Propargyl-1,1-dihydro-D-ribose-3-CEP)



$C_{38}H_{47}N_2O_7P$
Mol. Wt.: 674.

Catalog#

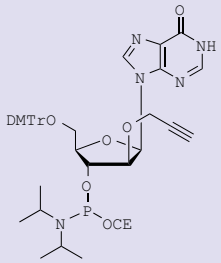
ANP-9782

Pricing

$85.00 / 50 µmole
$150.00 / 100 µmole
$495.00 / 250 mg
$890.00 / 500 mg

Purity: 98% +

2′-O-Propargyl-Arabino inosine-3′-CEP



$C_{43}H_{49}N_6O_8P$
Mol. Wt.: 808.86

Catalog#

ANP-9851

Pricing

$180.00 / 50 µmole
$320.00 / 100 µmole
$890.00 / 250 mg
$1600.00 / 500 mg

Purity: 98% +

2′-O-Propargyl Abasic Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9784-05	2′-O-Propargyl-abasic-ribose	500Å	$110	$970	$110	$180	$220	$360
N-9784-10	3′-Icaa CPG	1000Å						

Please Indicate Synthesizer when Ordering

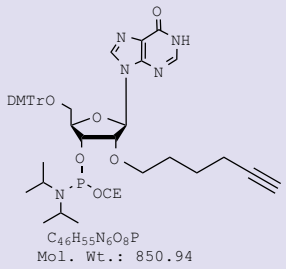
ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

www.chemgenes.com
Email: info@chemgenes.com

2′-O-Alkyl Modified amidites & Support / Antisense Oligonucleotides

Combiclick™ Chemistry Products contd..

2′-*O*-Hexynyl-inosine-3′-CEP



Catalog#

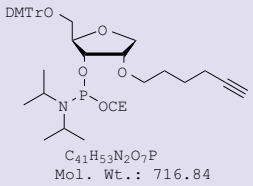
ANP-9852

Pricing

$120.00 / 50 µmole
$215.00 / 100 µmole
$560.00 / 250 mg
$1020.00 / 500 mg

Purity: 98% +

2-*O*-Hexynyl-Abasic-Phosphoramidite
(2-*O*-Hexynyl-1,1-dihydro-D-ribose-3-CEP)



Catalog#

ANP-9781

Pricing

$85.00 / 50 µmole
$150.00 / 100 µmole
$465.00 / 250 mg
$835.00 / 500 mg

Purity: 98% +

CombiClick™ Chemistry Products

Several azido modified reporter molecules such as Fluorescein, Lissamine, Cy3, Cy5, Ferrocene, and New quencher dye Instant Quencher (IQ2™), that is develped by ChemGenes, have been synthesized and tested in CombiClick™ attachment chemistry. This approach allows the synthesis of multiply labeled oligonucleotides in combinatorial fashion during oligonucleotide synthesis on solid support. In the case of multiply labeled oligonucleotides, each step of CombiClick™ attachment can be performed independently after incorporation of the corresponding propargyl base.

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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Chromophores & Ligands

ChemGenes offers a variety of chromphores and ligands for developing modified synthetic oligonucleotides conjugated with reporter molecules which can be employed in hybridization-based assays. Such oligonucleotides have broad applications in both basic molecular biology research and in clinical diagnostics and screening, because they have high specificity to a target nucleic acid sequence.

Ligands for attachment Chemistries

A wide variety of ligands are available from ChemGenes. The most common modification used for selective oligonucleotide attachment is the alkyl amino group. We offer from C-3 to C-12 spacer amino modifiers. This modification can be introduced into an oligonucleotide by using the corresponding phosphoramidite building block with the protected alkyl amine, which enabled for the reaction with activated esters after removal of the protecting group.[1,2]

Amongst various other chemistries available in literature by different approaches such as introduction of the desired alkyl amino function by aminolysis of the ester bond by diamino alkanes.[3,4] The reaction of alkyl amino modified oligonucleotides and activated esters affords the amide bond between an oligonucleotide and molecule of interest. Similarly hydrazides have been used in selective reaction with active esters. That type of nucleophilic modifications attached to the oligonucleotides and some of their applications have been recently reported in the literature.[5,6] It also has been shown that hydrazide forms a stable Schiff base in the reaction with aldehydes and for some applications does not require reduction into stable alkyl hydrazide by cyanoborohydride.[7]

Sulfhydryl modification reagents and supports are offered by us. This is a very efficient functionality utilized in the Michael-addition and nucleophilic substitution reactions with different electrophiles. It was successfully employed in chemoselective bio-molecule conjugations.[8,9] That modification can be introduced by several thioate and disulfide containing phosphoramidites and solid supports sold by us.

References

1. Connolly, B. A. *Nucl. Acids Res.* **1987**, *15*, 3131-3139.
2. Coull, J. M.; Weith, H. L.; Bischoff, R. *Tet. Lett.* **1986**, *27,* 3991-3994.
3. Hovinen, J.; Gusaev, A.; Azhaev, A.; Lönnberg, H. *J. Chem. Soc. Perkin Trans. I,* **1994**, 2745-2749.
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5. Ghosh, S. S.; Kao, P. M.; Kwoh, D. Y. *Analytical Biochemistry* **1989**, *178,* 43-51.
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9. Farmer, G. J.; Castenada, M. *Biotechniques*, **1991**, *11*, 588.

Summary of Chromophore & Ligand Modified Phosphoramidites

The incorporation of the chromophores and lingands are summarized below:

Phosphate Introducing Reagents

Bis- Cyanoethyl-*N,N*-diisopropyl Amidite and Phosphate-ON (generates DMTr color) Reagents

Amino Linkers

Includes TFA-Amino-C4, TFA-Amino-C5, TFA-Amino-C6, MMTr-Amino-C6, dC N^4-Amino Linker, MMT-Amino-C12, TFA-Amino-C12, Amino-dT-C6, & Fmoc-Amino-DMTr-C3 Amidites and various supports, ssR-Me/ssH amino modifiers.

Spacers

Includes C2, C3, C4, C6, C9 and C12 spacers, Spacer 9, Spacer 12, Spacer 18, Polyethyleneglycol 2000, and Polyethyleneglycol 4500

5′-Thiol & 3′-Thiol Modifiers

Includes 5'-Thio Modifier Hexyl, 5'-Thiol C3 Disulfide , and 5' Thiol C6 Disulfide amidites and 3'-Thiol Modifier C6 support. Cyclic Disulfide Dithiolane phosphoramidite and Supports.

Biotin

Including Biotin BB, Biotin Phosphoramidites

Branching Amidites and Supports

Asymmetrical and Symmetrical Branching, Glyceryl CPG, & Butanol CPG

Carboxy Introduction and Cholesterol

Including Thymidine-succinyl-hexamide Amidite, Deoxyuridine-5-methylacrylate Amidite, Cholesterol TEG(generating DMT-orange color), TEG Cholesterol, & Cholesterol Supports.

Dabcyl and DNP-TEG

Including Dabcyl Amidites and Supports ,Thymidine-C5-dabcyl Amidite, and DNP-TEG Amidites

Etheno Amidites & Supports

HEX,TET,6-FAM , 5-FAM, Fluorescein-dT, and Tetrachloro, Hexachloro Fluorescein Cyclohexyl Amidites & Supports

Includes N4 6-TAMRA Amidites and Support & 5-TAMRA Amidite

Psoralen Amidites & Supports

Includes Psoralen Amidites, Psoralen-C2, Psoralen-C4, Psoralen-C6, Psoralen-hexaethyloxyglycol, and Psoralen CPG

TAMRA Amidites & Supports and Cocktail for TAMRA

Includes N^4-6-TAMRA Amidites and Supports & 5-TAMRA Amidite

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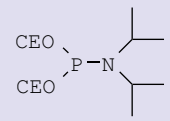
Phosphoramidites and Supports for Introducing Chromophores & Ligands

Chemical Phosphorylation & Supports

5′-Phosphorylation Reagent
(Bis-Cyanoethyl-*N,N*-diisopropyl Phosphoramidite)



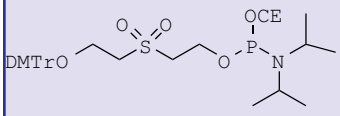
$C_{12}H_{22}N_3O_2P$
Mol. Wt.: 27

Catalog# CLP-1454

Pricing
$40.00 / 100 µmole
$300.00 / 250 mg
$480.00 / 500 mg
$760.00 / 1 g

Purity: 98% +

5′-Phosphorylation Reagent (generates DMT color)
(5-Phosphate-ON Reagent)



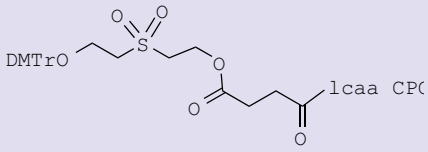
$C_{34}H_{45}N_2O_7PS$
Mol. Wt.: 656.77

Catalog# CLP-1544

Pricing
$45.00 / 100 µmole
$150.00 / 250 mg
$270.00 / 500 mg
$485.00 / 1 g

Purity: 98% +

3′- Phosphate-ON CPG



N-9977-05/10/20

Phosphate-ON Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9977-05	3'-Phosphate-ON	500Å	$62	$425	$52	$92	$104	$184
N-9977-10	lcaa CPG	1000Å						
N-9977-20		2000Å						

Oligonucleotides can be phosphorylated enzymatically at the 5'-terminus by polynucleotide kinase. This reaction is reversible and is difficult to control. For applications such as gene assembly, where complete phosphorylation is important, it is advisable to introduce the phosphate chemically.

ChemGenes offers two reagents for 5'-phosphorylation of an oligonucleotide:

- The bis-cyanoethyl-*N,N'*-diisopropyl phosphoramidite (catalog #: CLP-1454) quantitatively phosphorylates the 5'-hydroxyl group via phosphoramidite methodology on an automatic DNA/RNA synthesizer.
- An alternative is the 5'-Phosphate-ON Reagent (catalog #: CLP-1544) which generates a "DMT orange color" after introduction of phosphate at the last nucleotide in the oligonucleotide chain.

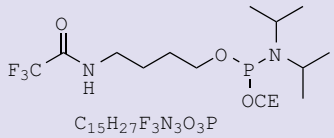
Description:

Bis-Cyanoethyl-*N,N'*-diisopropyl CEP is used for the introduction of 5'- terminal phosphate on a synthetic DNA/RNA via phosphoramidite chemistry on an automatic DNA Synthesizer to produce probes and primers carrying 5'-phosphate. This is an ideal reagent for the production of phosphorylated DNA or RNA oligomers in large quantity, as compared to enzymatic phosphorylation at this position, which has limitations with respect to the quantities. This becomes a significant factor when large quantities of phosphorylated oligomers are required for recombinant DNA applications. The bis-cyanoethyl phosphoramidite reagent has the disadvantage of not generating any color, however due to its lower price it is the reagent of choice for the production of phophorylated DNA or RNA oligomers in large quantities

5-Phosphate-ON-reagent is an alternative to Bis-cyanoethyl phosphorylating reagent, outlined above. This reagent generates DMTr orange color after introduction of phosphate at the last nucleoside in the oligonucleotide chain.

Amino Modifiers & Supports

5′-Amino (TFA)-Modifier-C4 spacer CEP



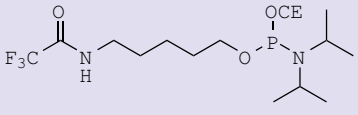
$C_{15}H_{27}F_3N_3O_3P$
Mol. Wt.: 385.36

Catalog# CLP-1453

Pricing
$48.00 / 100 µmole
$170.00 / 250 mg
$300.00 / 500 mg
$540.00 / 1 g

Purity: 98% +

5′-Amino (TFA)-Modifier-C5 spacer CEP



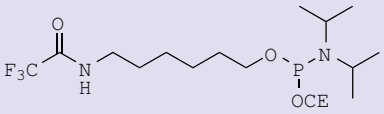
$C_{16}H_{29}F_3N_3O_3P$
Mol. Wt.: 399.39

Catalog# CLP-1357

Pricing
$30.00 / 100 µmole
$90.00 / 250 mg
$160.00 / 500 mg
$285.00 / 1 g

Purity: 98% +

5′-Amino (TFA)-modofier-C6 spacer CEP



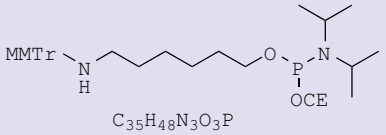
$C_{17}H_{31}F_3N_3O_3P$
Mol. Wt.: 413.42

Catalog# CLP-1553

Pricing
$28.00 / 100 µmole
$84.00 / 250 mg
$150.00 / 500 mg
$270.00 / 1 g

Purity: 98% +

5′-Amino (MMTr)-modifier-C6 spacer CEP



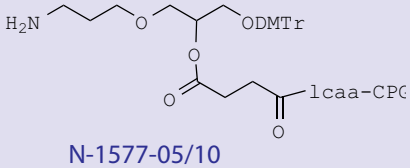
$C_{35}H_{48}N_3O_3P$
Mol. Wt.: 589.75

Catalog# CLP-1563

Pricing
$56.00 / 100 µmole
$190.00 / 250 mg
$340.00 / 500 mg
$610.00 / 1 g

Purity: 98% +
CAS No. 114616-27-2

Amino-(Spacer-7) lcaa Supports & Columns



N-1577-05/10

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-1577-05	Amino-(Spacer-7)	500Å	$62	$425	$52	$92	$104	$184
N-1577-10	lcaa CPG	1000Å						

MMTr-Amino & TFA-Amino C-12 CEP, Fmoc amino C6 & spacer 7 CEP: Please see Page 118.

2′-O-Methyl amino modifier: Please see Page 94 (ANP-2583 / ANP2581).

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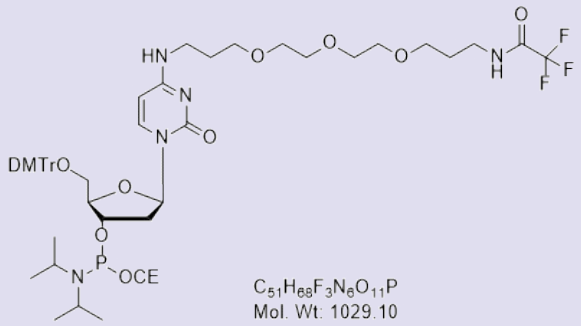
Phosphoramidites and Supports for Introducing Chromophores & Ligands

Amino Modifiers & Supports

Amino-modifier-13-atom-Spacer-dC CEP;
(Deoxy Cytidine N^4 Amino Linker Phosphoramidite)



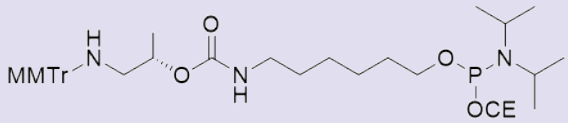
$C_{51}H_{68}F_3N_6O_{11}P$
Mol. Wt: 1029.10

Catalog# CLP-1329

Pricing
$150.00 / 100 µmole
$325.00 / 250 mg
$585.00 / 500 mg
$1050.00 / 1 g

Purity: 98% +

ssR-Me Amino Modifier



$C_{39}H_{55}N_4O_5P$
Mol.Wt: 690.87

Catalog# CLP-1131

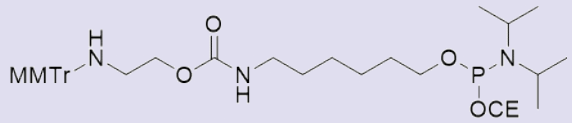
Pricing
$84.00 / 100 µmole
$270.00 / 250 mg
$485.00 / 500 mg
$870.00 / 1 g

Purity: 98% +

For synthesis of amino linker oligo nucleotideproves in which the amino group possess enhanced reactivity towards various amine reactive dyes for conjugation.

US7491857B2; Y. Komatsu; N. Kojima; K. Sato; Ken Nonaka; Y. Fujiwana

ssH Amino Modifier



$C_{38}H_{53}N_4O_5P$
Mol. Wt: 676.84

Catalog# CLP-1132

Pricing
$84.00 / 100 µmole
$275.00 / 250 mg
$495.00 / 500 mg
$890.00 / 1 g

Purity: 98% +

5′-Terminal Amino Introducing Reagents

The standard DNA synthesis protocols are followed to quantitatively generate the primary aliphatic amino group. This primary aliphatic amino group is useful for the subsequent introduction of various functional entities such as following:

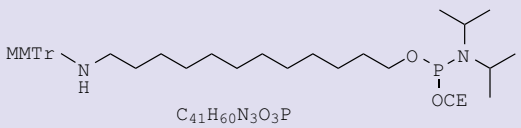
- Biotin
- Fluorescent molecules
- Alkaline phosphatase enzyme, amino acids, hydrophobic moities etc.

The primary aliphatic amino group reacts very smoothly with a wide variety of labeling reagents; thus it is the chemical modification of choice for this application. Thus covalently linked chromophores can be readily introduced in a synthetic DNA or RNA of interest. (Nelson, P. S.; Gold, R. S.; Leon, R. *Nucl. Acids Res*. **1989**, *17*, 7179).

The 5'-Terminal amino Introducing Reagent such as C4 Spacer (TFA-amino C4, Catalog# CLP-1453), C5 Spacer (Catalog# CLP-1357), C6 Spacer (Catalog# CLP-1553) allows only for a single primary amino function per molecule. The amino group is introduced while protected as trifluoroacetamido which is cleaved during ammonia deprotection of the oligo. The 5'-Terminal Amino Introducing Reagents allow for introduction of C4, C5 and C6 spacer respectively between the 5'-phosphate and the terminally introduced primary amino group.

Amino Modifiers & Supports

5'-Amino (MMTr)-Modifier-C12 spacer CEP



$C_{41}H_{60}N_3O_3P$
Mol. Wt.: 673.91

Catalog#

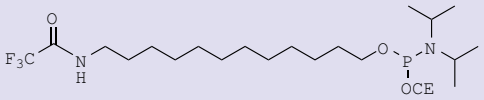
CLP-1585

Pricing

$90.00 / 100 µmole
$275.00 / 250 mg
$495.00 / 500 mg
$890.00 / 1 g

Purity: 98% +

5'-Amino (TFA)-Modifier-C12 spacer CEP



$C_{23}H_{43}F_3N_3O_3P$
Mol. Wt.: 497.57

Catalog#

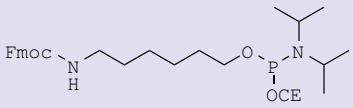
CLP-1575

Pricing

$90.00 / 100 µmole
$275.00 / 250 mg
$495.00 / 500 mg
$890.00 / 1 g

Purity: 98% +

5'-Amino (Fmoc)-Modifier-C6 spacer CEP



$C_{30}H_{42}N_3O_4P$
Mol. Wt.: 539.65

Catalog#

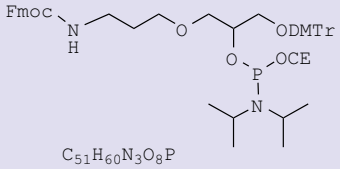
CLP-1586

Pricing

$90.00 / 100 µmole
$375.00 / 250 mg
$675.00 / 500 mg
$1210.00 / 1 g

Purity: 98% +

5'-Amino (Fmoc)-Modifier-spacer (7 atoms) CEP



$C_{51}H_{60}N_3O_8P$
Mol. Wt.: 874.01

Catalog#

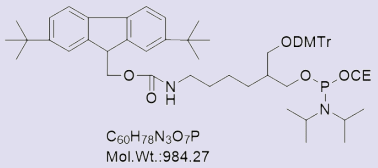
CLP-1662

Pricing

$90.00 / 100 µmole
$240.00 / 250 mg
$430.00 / 500 mg
$775.00 / 1 g

Purity: 98% +

2,7-di-tert-butyl-(Fmoc)-amino-butyrylglyceryl- Phosphoramidite



$C_{60}H_{78}N_3O_7P$
Mol.Wt.:984.27

Catalog#

CLP-1666

Pricing

$210.00 / 250 mg
$335.00 / 500 mg
$535.00 / 1 g

Purity: 98% +

MMTr-Amino C6 & C12 Modifiers

The 5'-Terminal Introducing Reagent with C6 Spacer (MMTr-amino-C6 spacer phosphoramidite, Calatog# CLP-1563) and the 5'-Terminal amino introducing Reagent with C12 Spacer (MMTr-amino-C6 phosphoramidite, Catalog# CLP-1585) are used to introduce a primary amino group at the 5'-terminal of an oligonucleotide. The MMTr on the amino function is cleaved with 3% trichloracetic acid (TCA), similar to DMTr removal in oligonucleotide synthesis. However, the MMTr-group removal is significantly slower (12 minutes contact with TCA).

A useful utilization of MMTr protected C6 and C12 phosphoramidites involves the selective cleavage of the MMTr group from the synthesized oligonucleotide to obtain the free terminal amino function while the oligo is still bound to the solid support. Various chomophores and biologyically significant molecules can be coupled to the terminal amino group of the support bound oligonucleotide. As it is a solid phase synthesis the excess reagent (chromophores) can easlily be washed off, thus leaving almost pure chomophore-oligonucleotide

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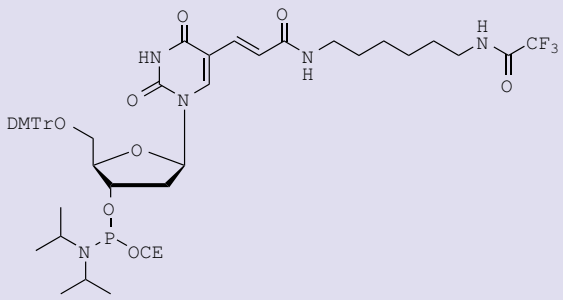
Phosphoramidites and Supports for Introducing Chromophores & Ligands

Amino Modifiers & Supports

Amino-modifier-C6-dT CEP

Amino Modifier Thymidine (total 10 atoms spacer) CEP



$C_{50}H_{62}F_3N_6O_{10}P$
Mol. Wt.: 995.03

Catalog#

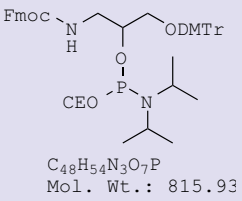
CLP-1501

Pricing

$175.00 / 100 µmole
$410.00 / 250 mg
$735.00 / 500 mg
$1320.00 / 1 g

Purity: 98% +

3′-Amino (Fmoc)-modifier-C3 CEP



$C_{48}H_{54}N_3O_7P$
Mol. Wt.: 815.93

Catalog#

CLP-1661

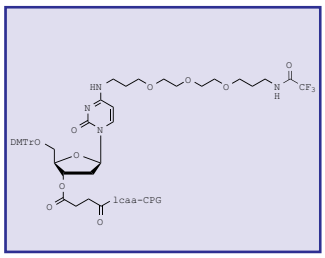
Pricing

$48.00 / 100 µmole
$130.00 / 250 mg
$200.00 / 500 mg
$320.00 / 1 g

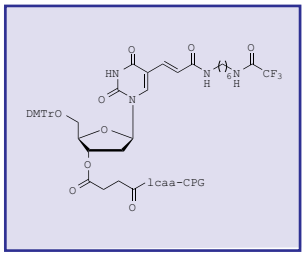
Amino Introducing Reagent with C3 Spacer (Fmoc-amino-DMTr C3 phosphoramidite) & Amino-dT

The amino introducing reagent with C3 Spacer (Fmoc-amino-DMT C3 phosphoramidite, Catalog# CLP-1661) has a DMT group in additon to the protected primary amino group. This DMT group facilitates monitoring the efficiency of the phosphoramidite coupling and also allows multiple additions of the amino function. The amino dT, with a total spacer arm of 10 atoms, is suitable for the internal labeling of oligonucleotides.

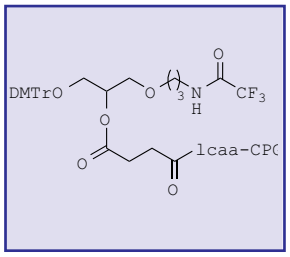
Supports & Columns for 3′-amino linker oligonucleotides



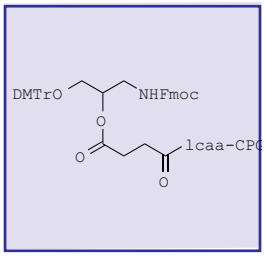
N-6052-05/10



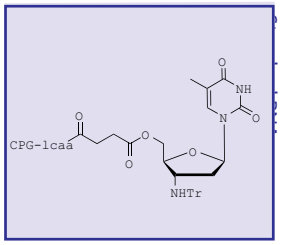
N-6054-05/10



N-1004-05/10



N-9750-05/10



N-8024-05/10

Supports & Columns for 3′-amino linker oligonucleotides

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 250 mg	pack of 4 cols. 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-1004-05 N-1004-10	3′-Amino (TFA)-modifier-Spacer 7-lcaa CPG	500Å 1000Å	$140	$180	$585	$120	$180	$240	$360
N-9750-05 N-9750-10	3′-Amino (Fmoc) modifier C3 lcaa CPG	500Å 1000Å	$140	$150	$550	$88	$112	$176	$224
N-6052-05 N-6052-10	Amino-modifier-Spacer-13-dC-lcaa CPG	500Å 1000Å	$140	$170	$570	$110	$170	$220	$340
N-6054-05 N-6054-10	Amino-modifier-C6-dT-lcaa CPG	500Å 1000Å	$140	$170	$570	$110	$170	$220	$340
N-8024-05 N-8024-10	3′-Amino (trityl)-modifier-dT CPG	500Å 1000Å	$140	$170	$570	$110	$170	$220	$340
N-1004-13	3′-Amino (TFA)-modifier-spacer 6-Polymeric Support	300Å 1000Å	$140	$170	$570	$110	$170	$220	$340

3′-Amino Modifier

The 3′-amino modifer TFA-C6 (Catalog# N-1004) has been found to be a very useful addition to 3′-amino linked DNA/RNA chimeras and micro RNA (Quintana, L. *et. al. Current Biology* **2002**, *12*, 735-739).

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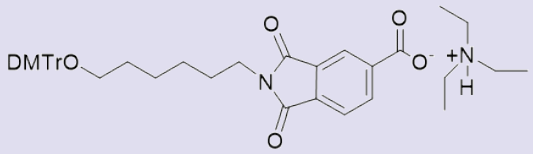
Amino Modifiers & Supports

Amino-Modifier-C6-Phthalamido-TEA Salt



$C_{42}H_{50}N_2O_7$
Mol. Wt. : 694.86

Catalog#

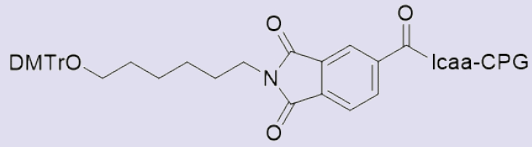
CLP-1328

Pricing

$115.00 / 100 µmole
$360.00 / 250 mg
$640.00 / 500 mg
$1150.00 / 1 g

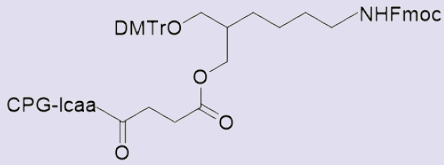
Purity: 98% +

3′-Amino-Phthalamido Modifier CPG



N-8217-05/10

3′-Amino (Fmoc)-Modifier (C6 spacer) CPG



N-1005-05/10

Supports & Columns for 3′-amino linker oligonucleotides

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 250 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-8217-05	3′-Amino-modifier-C6 phthalamido	500Å	$90	$180	$585	$120	$180	$240	$360
N-8217-10	lcaa CPG	1000Å							
N-1005-05	3′-Amino modifiers (Fmoc)	500Å	$90	$180	$585	$120	$180	$240	$360
N-1005-10	C7 lcaa CPG	1000Å							

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AB30	AB39	EX	MR	PX	AK

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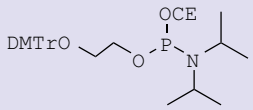
Oligo Synthesis Products

Phosphoramidites and Supports for Introducing Chromophores & Ligands

Spacer Modifiers & Supports

DMTr-O-Ethyleneglycol phosphoramidite
(C2 Spacer)



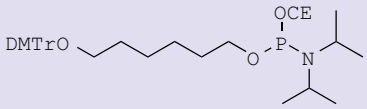
$C_{32}H_{41}N_2O_5P$
Mol. Wt.: 56‹

Catalog# CLP-2250

Pricing
$75.00 / 100 µmole
$150.00 / 250 mg
$250.00 / 500 mg
$400.00 / 1 g

Purity: 98% +

DMTr-O-Hexyl 6-Phosphoramidite
(C6 Spacer)



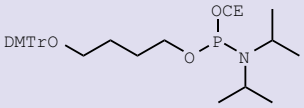
$C_{36}H_{49}N_2O_5P$
Mol. Wt.: 620.76

Catalog# CLP-1120

Pricing
$75.00 / 100 µmole
$150.00 / 250 mg
$250.00 / 500 mg
$400.00 / 1 g

Purity: 98% +

DMTr-O-Butyl 4-Phosphoramidite
(C4 Spacer)



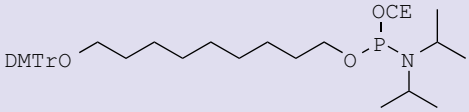
$C_{34}H_{45}N_2O_5P$
Mol. Wt.: 592.71

Catalog# CLP-9775

Pricing
$75.00 / 100 µmole
$150.00 / 250 mg
$250.00 / 500 mg
$400.00 / 1 g

Purity: 98% +

DMTr-O-Nonyl 9-Phosporamidite
(C9 Spacer)



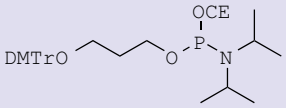
$C_{39}H_{55}N_2O_5P$
Mol. Wt.: 662.84

Catalog# CLP-9009

Pricing
$75.00 / 100 µmole
$150.00 / 250 mg
$250.00 / 500 mg
$400.00 / 1 g

Purity: 98% +

DMTr-O-Propyl 3-Phosphoramidite
(C3 Spacer)



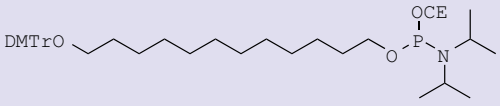
$C_{33}H_{43}N_2O_5P$
Mol. Wt.: 578.68

Catalog# CLP-9908

Pricing
$75.00 / 100 µmole
$150.00 / 250 mg
$250.00 / 500 mg
$400.00 / 1 g

Purity: 98% +

DMTr-O-Dodecyl 12-Phosphoramidite
(C12 Spacer)



$C_{42}H_{61}N_2O_5P$
Mol. Wt.: 704.92

Catalog# CLP-1114

Pricing
$75.00 / 100 µmole
$150.00 / 250 mg
$250.00 / 500 mg
$400.00 / 1 g

Purity: 98% +

Supports & Columns for Phthalamido

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 250 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-1089-05	1-*O*-DMTr-propyl-3-*O*-succinyl	500Å	$140	$180	$585	$120	$180	$240	$360
N-1089-10	lcaa CPG	1000Å							
N-9168-05	1-*O*-DMTr-butyl-4-*O*-succinyl	300Å	$140	$180	$585	$120	$180	$240	$360
N-9168-10	Polymeric Support	1000Å							
N-7178-05	Butyl CPG; DMTr-butanol-lcaa CPG	500Å	$140	$180	$585	$120	$180	$240	$360
N-7178-10	(for 3'-butanol Spacer)	1000Å							
N-7175-05	Glyceryl CPG (for 3'-Glyceryl Spacer)	500Å	$140	$180	$585	$120	$180	$240	$360
N-7175-10		1000Å							

The DMTr-O-butyl phosphoramidite (catalog # CLP-9775) introduces the butanediol moiety (single or mutliple units) into an oligonucleotide. The butanediol spacer has been incorporated in oligonucleotides consisting of 2',5'-A and DNA segents to produce oligonucleotide chimeras that catalyze selective cleavage of RNA in human cells. (a) Maitra, R. K.; Li, G.; Xiao, W.; Dong, B.; Torrence, P. F.; Silverman, R. H. *J. Biol. Chem.* **1995**, *270*, 15071. (b) Lesiak, K.; Khamnei, S.; Torrence, P. F. *Biocon. Chem.* **1993**, *4*, 467.

The corresponding CPG is also available to incorporate this unit at the 3'-end of an oligo.

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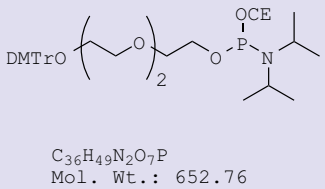
Spacer Modifiers & Supports

DMTr-O-Triethyleneglycol Phosphoramidite
(Spacer 9)



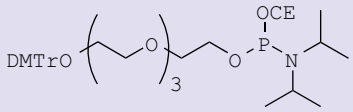
$C_{36}H_{49}N_2O_7P$
Mol. Wt.: 652.76

Catalog# CLP-1113

Pricing
$80.00 / 100 µmole
$150.00 / 250 mg
$225.00 / 500 mg
$450.00 / 1 g

Purity: 98% +

DMTr-O-Tetraethyleneglycol Phosphoramidite
(Spacer 12)



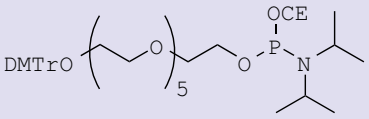
$C_{38}H_{53}N_2O_8P$
Mol. Wt.: 696.81

Catalog# CLP-1368

Pricing
$80.00 / 100 µmole
$150.00 / 250 mg
$225.00 / 500 mg
$450.00 / 1 g

Purity: 98% +

DMTr-O-Hexaethyleneglycol Phosphoramidite
(Spacer 18)



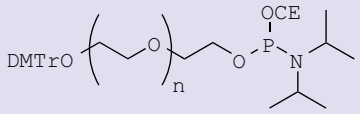
$C_{42}H_{61}N_2O_{10}P$
Mol. Wt.: 784.91

Catalog# CLP-9765

Pricing
$80.00 / 100 µmole
$150.00 / 250 mg
$225.00 / 500 mg
$450.00 / 1 g

Purity: 98% +

DMTr-O-Polyethyleneglycol 4500 Phosphoramidite
(Avg. M.W.~4500)



n=90

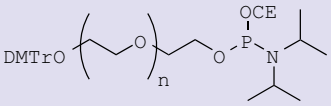
Mol. Wt. Avg: ~4500

Catalog# CLP-3118

Pricing
$275.00 / 100 µmole
$540.00 / 1 g

Purity: 98% +

DMTr-O-Polyethyleneglycol 2000 Phosphoramidite



n=44

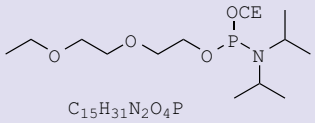
$C_{120}H_{217}N_2O_{49}P$
Mol. Wt.: 2502.96

Catalog# CLP-2119

Pricing
$265.00 / 100 µmole
$515.00 / 500 mg
$930.00 / 1 g

Purity: 98% +

Ethyl-diethyleneglycol phosphoramidite



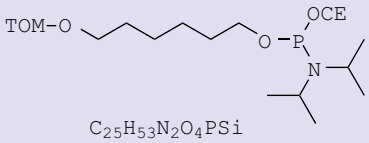
$C_{15}H_{31}N_2O_4P$
Mol. Wt.: 334.39

Catalog# CLP-3119

Pricing
$275.00 /100µmole
$340.00 / 250 mg
$480.00 / 500 mg
$600.00 / 1 g

Purity: 98% +

TOM-C6 Phosphoramidite



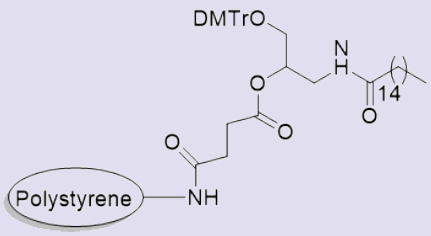
$C_{25}H_{53}N_2O_4PSi$
Mol. Wt.: 504.76

Catalog# CLP-8508

Pricing
$40.00 /100µmole
$150.00 / 250 mg
$250.00 / 500 mg
$400.00 / 1 g

Purity: 98% +

Palmitoyl Polymeric Support



Catalog# N-9821-03

Pricing
$ 40.00 / 100 µmole
$ 50.00 / 250 mg
$110.00 / 1 g

Purity: 98% +

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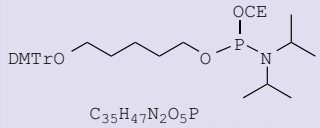
Phosphoramidites and Supports for Introducing Chromophores & Ligands

Spacer Modifier

DMTr-O-Pentyl-5-Phosphoramidite
(C5 Spacer)



$C_{35}H_{47}N_2O_5P$
Mol. Wt.: 606.73

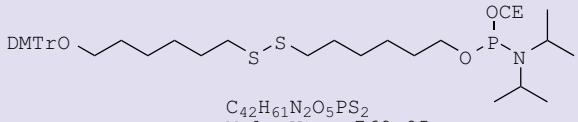
Catalog# CLP-9901

Pricing
$75.00 / 100 µmole
$150.00 / 250 mg
$220.00 / 500 mg
$370.00 / 1 g

Purity: 98% +

Thiol Modifiers & Supports

5′-Thiol-C6-disulfide Modifier Phosphoramidite



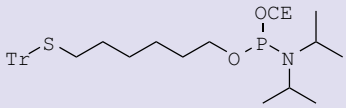
$C_{42}H_{61}N_2O_5PS_2$
Mol. Wt.: 769.05

Catalog# CLP-8506

Pricing
$126.00 / 100 µmole
$360.00 / 250 mg
$615.00 / 500 mg
$1100.00 / 1 g

Purity: 98% +

5′-Thiol (S-Trityl)-hexyl-C6-Modifier Phosphoramidite



$C_{34}H_{45}N_2O_2PS$
Mol. Wt.: 576.87

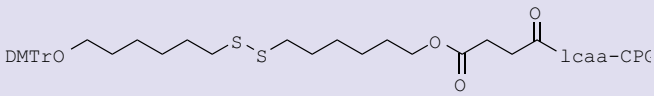
Catalog# CLP-5888

Pricing
$60.00 / 100 µmole
$230.00 / 250 mg
$390.00 / 500 mg
$660.00 / 1 g

Purity: 98% +

5′-Thiol Modifier-C-6 (catalog# CLP-5888): Several methods are available to introduce a thiol group at the 5′-end of an oligonucleotide. (a) Connolly, B. A.; Rider, P. *Nucl. Acids Res.* **1985** ,*12*, 4485; Sinha, N. D.; Cook, R. M. *Nucl. Acids Res.* **1988**, *16*, 2659; Sharma, S.; Gupta, K. C. *Nucl. Acids Res.* **1989**, *14*, 4404; (b) Kumar, A.; Advani, S.; Dawar, H.; Talwar, G. P. *Nucl. Acids Res.* **1991**, *19*, 4561).

DMTr-C6-Disulfide Solid Support (N-9987)



3′-Thiol Succinyl lcaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9987-05	3′-Thiol Modifier-	500Å	$70	$530	$68	$110	$136	$220
N-9987-10	C6-disulfide lcaa CPG	1000Å						

For Puromycin Labelling: See N-1971-05/10; page # 74

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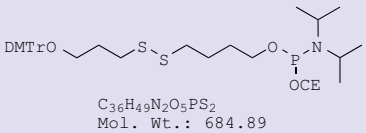
Oligo Synthesis Products

Phosphoramidites and Supports for Introducing Chromophores & Ligands

Thiol Modifiers & Supports

5′-Thiol-modifier (C3-disulfide Phosphoramidite)*



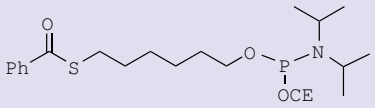
$C_{36}H_{49}N_2O_5PS_2$
Mol. Wt.: 684.89

Catalog# CLP-8409

Pricing
$120.00 / 100 µmole
$365.00 / 250 mg
$584.00 / 500 mg
$936.00 / 1 g

Purity: 98% +

1-Thiobenzoyl-hexyl-6-Phosphoramidite



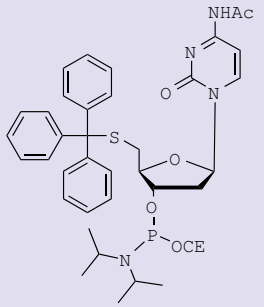
$C_{22}H_{35}N_2O_3PS$
Mol. Wt.: 438.21

Catalog# CLP-9773

Pricing
$66.00 / 100 µmole
$290.00 / 250 mg
$460.00 / 500 mg
$735.00 / 1 g

Purity: 98% +

5′-S-Trityl-2′-deoxycytidine Phosphoramidite



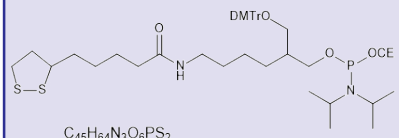
$C_{39}H_{46}N_5O_5PS$
Mol. Wt.: 727.85

Catalog# CLP-8509

Pricing
$155.00 / 100 µmole
$425.00 / 250 mg
$680.00 / 500 mg
$1090.00 / 1 g

Purity: 98% +

Cyclic Dithiolane Disulfide Phosphoramidite**



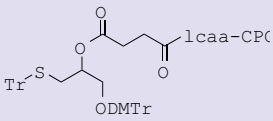
$C_{45}H_{64}N_3O_6PS_2$
Mol. Wt.: 838.12

Catalog# CLP-8407

Pricing
$150.00 / 100 µmole
$380.00 / 250 mg
$650.00 / 500 mg
$1100.00 / 1 g

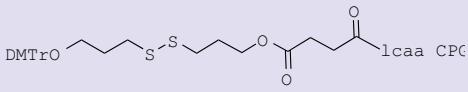
Purity: 98% +

3′-Thiol modifier (S-trityl) Icaa CPG



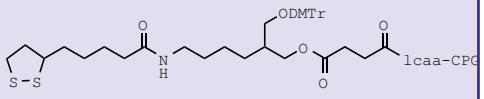
N-9978-05/10

3′-Thiol modifier-C3-disulfide Icaa CPG*



N-9976-05/10

Cyclic Dithiolane Disulfide Icaa CPG**



N-8408-05/10

3′-Thiol Succinyl Icaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9978-05	3′-Thiol Modifier-	500Å	$70	$530	$68	$110	$136	$220
N-9978-10	(*S*-trityl) Icaa CPG	1000Å						
N-9976-05	3′-Thiol Modifier-	500Å	$70	$530	$68	$110	$136	$220
N-9976-10	C3-disulfide Icaa CPG	1000Å						
N-8408-05	Cyclic Dithiolane	500Å	$70	$530	$68	$110	$136	$220
N-8408-10	Disulfide Icaa CPG	1000Å						

*Srivasatava, S. C., Kumar, T. S. et al. "Synthesis of high purity DMT-C3-disulfide phosphoramidite" Patent Application No. PCT/US2012/000103.
**Srivastava, S. C., Kumar, T. S. et al. "Dithiolane based thiol modifier for labeling and stronger immobilization of bio-molecules on solid surfaces" The Serial No. for the provisional application is 61/795851.

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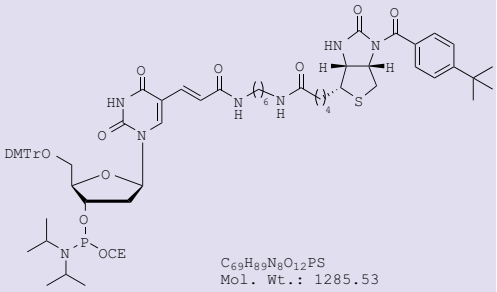
Phosphoramidites and Supports for Introducing Chromophores & Ligands

Biotin Labelling

Biotin-dT Phosphoramidite

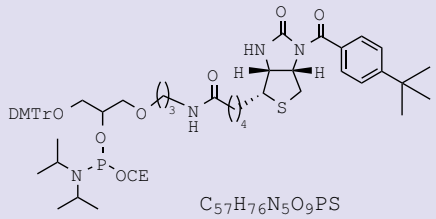


Catalog# CLP-1502

Pricing
$160.00 / 50 µmole
$310.00 / 100 µmole
$660.00 / 250 mg
$1080.00 / 500 mg
$1940.00 / 1 g

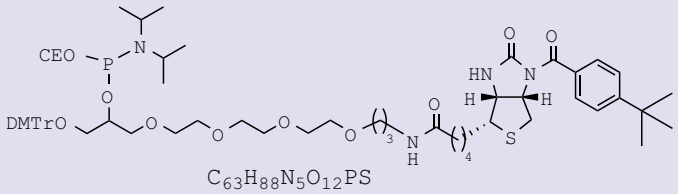
Purity: 98% +

Biotin (BB)™ Phosphoramidite

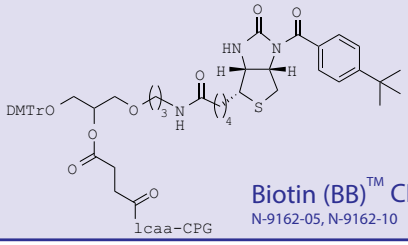


Catalog#	Pricing
CLP-1517	$104.00 / 50 µmole
	$185.00 / 100 µmole
Purity: 98% +	$400.00 / 250 mg
	$720.00 / 500 mg
	$1225.00 / 1 g

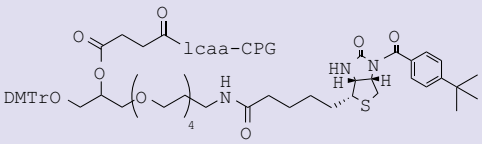
Biotin (BB) -TEG Phosphoramidite



Catalog#	Pricing	
CLP-1518	$ 70.00 / 50 µmole	$270.00 / 250 mg
Purity: 98% +	$150.00 / 100 µmole	$485.00 / 500 mg
		$870.00 / 1g



Biotin (BB)™ CPG
N-9162-05, N-9162-10



Biotin (BB)™ CPG
N-1506-05, N-1506-10

Biotin (BB)™ Phosphoramidites

"Biotin BB" contains a *tert*-butyl-benzoyl group at one of the secondary amino groups of Biotin. This novel feature is what makes ChemGenes "Biotin BB" (Catalog# CLP-1517) superior to other commercially available biotin products, such as "Biotin dT" and "Biotin TEG". Another biotin product, "Biotin Phosphoramidite" can potentially cause side reactions during oligo synthesis due to the presence of the free urea moiety of the biotin. As repeated synthesis cycles are performed, this side reaction will occur when 3'-end attachment is desired using a solid support. The "Biotin Phosphoramidite" has an additional problem of low solubility. "MMTr-Biotin Phosphoramidite", another biotin analog has a MMTr-group on the urea portion of the biotin. The MMTr-group, however, is potentially susceptible to hydrolysis during oligo synthesis. Furthermore, the MMTr-group does not deactivate the urea moiety of biotin towards side reactions during oligo synthesis. This novel feature was originally developed by Brian Sproat and coworkers (Uwe Pieles, Brian Sproat and Gabor M. Lamm, *Nucl. Acids Res.* **1990**, 18,4355*)*. This study demonstrated that the protection of the urea nitrogen causes dramatic effect in the purity of the synthesized oligos. ChemGenes' "Biotin BB", which has a 7 atom spacer utilizes this protection feature and has *tert*-butyl-benzoyl protection on the urea nitrogen. This product is a simple and cost effective alternative to Biotin dT. ChemGenes also produces "Biotin BB" attached to solid support.

			Bulk CPG		pack of 4 cols.		pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	1 g	0.2 µmole	1.0 µmole	0.2 µmole	1.0 µmole
N-9162-05	D-(+) Biotin	500Å	$115	$970	$100	$180	$200	$360
N-9162-10	lcaa CPG	1000Å						
N-9162-20		2000Å						
N-1506-05	Biotin TEG	500Å	$115	$970	$100	$180	$200	$360
N-1506-10	lcaa CPG	1000Å						

Biotinylation in the sequence and at the 5'Terminus

For use in automated synthesis and associated rapid purification techniques. Applications to which our biotin phosphoramidites have been applied include:
1. Diagnostic probe development including occasions where multiple biotin molecules may be introduced into a probe to enhance sensitivity of ultimate detection.
2. Introduction of biotin in the sequence and at the 5'-terminus of a primer prior to PCR amplification and trapping of the derived biotinylated DNA using streptavidin magnetic beads.
3. Introduction of biotin at the 3'-terminus of a probe capable of blocking chain extension in a PCR experiment. This is acheived through Biotin-CPG (see page 30).

Protection of the N-1 position of biotin with a lipophilic group induces higher solubility. It should be noted that we have found these products to be highly susceptible to deactivation by moisture in the diluent acetonitrile.

3'-End Labeling with Biotin BB CPG Solid Supports

"Biotin BB" CPG is used for synthesis of 3'-Biotin oligomers. The *tert*-butyl-benzoyl protection prevents biotin chromophore unwanted side reactions. Also available from ChemGenes are the corresponding prepacked "Biotin BB" CPG columns listed above.

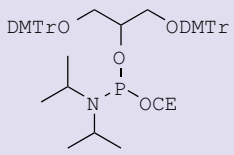
Biotin BB is a trademark of ChemGenes Corporation. The starting biotin for all biotin derivatives is Biotin-D(+).

Oligo Synthesis Products

Phosphoramidites and Supports for Introducing Chromophores & Ligands

Branching Phosphoramidites & Supports

Symmetrical-branching Phosphoramidite



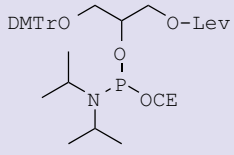
$C_{54}H_{61}N_2O_8P$
Mol. Wt.: 897.0

Catalog# CLP-5215

Pricing
$90.00 / 100 µmole
$225.00 / 250 mg
$405.00 / 500 mg
$730.00 / 1 g

Purity: 98% +

Asymmetrical-branching Phosphoramidite



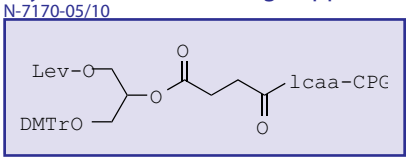
$C_{38}H_{49}N_2O_8P$
Mol. Wt.: 692.

Catalog# CLP-7169

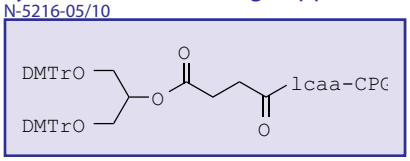
Pricing
$110.00 / 100 µmole
$315.00 / 250 mg
$505.00 / 500 mg
$810.00 / 1 g

Purity: 98% +

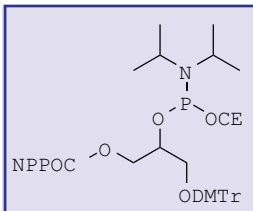
Asymmetrical-branching Support
N-7170-05/10



Symmetrical-branching Support
N-5216-05/10



NPPOC-DMTr Asymmetrical-branching Phosphoramidite



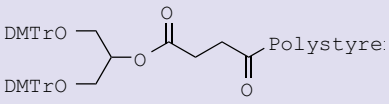
$C_{43}H_{52}N_3O_1OP$
Mol. Wt.: 801.

Catalog# CLP-7178

Pricing
$130.00 / 100 µmole
$360.00 / 250 mg
$640.00 / 500 mg
$1150.00 / 1 g

Purity: 98% +

Symmetrical Branching Polymeric Support
N-7173-05



Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-5216-05	Symmetrical-branching	500Å	$115	$970	$110	$170	$220	$340
N-5216-10	lcaa CPG	1000Å						
N-7170-05	Asymmetrical-branching	500Å	$115	$970	$110	$170	$220	$340
N-7170-10	lcaa CPG	1000Å						
N-7173-05	Symmetrical-branching Polymeric Support	500Å	$115	$970	$110	$170	$220	$340

Branching phosphoramidites and solid supports:

The branching phosphoramidites incorporate branching sites into an olilgonucucleotide *via* automated DNA synthesis directly. Branched oligonucleotides are synthesized from the incorporated glycerol backbone, which posesses two protected hydroxyl groups for chain elongation. For example, branched oligonucleotides have been used effectively for signal amplification by introducing networks of labels or probing sites (Horn *et. al.* **1989**; Chang *et. al.* **1991**; Foldesi *et. al.* **1991**).

Symmetric branching phosphoramidites:

This reagent allows simultaneous extension from the glycerol branch point because both hydroxyl groups are protected by DMTr groups and are thus removed at the same time, resulting in two identical branches. Several cycles of incorporation of this amidite will result in a tree-like structure of 2 branched oligonucleotide arms. Since reporter molecules, such as biotin or flourescein, can be attached to each arm, this exponential branching can amplify and thus improve the sensitivity of these reporter molecules.

Asymmetric branching phosphoramidites:

This reagent uses DMTr to protect one hydroxyl of the glyceryl backbone and a levulinyl group to protect the other. The DMTr group is removed during the normal deblock step and routine chain elongation can continue from this branch. Subsequent removal of the levulinyl protecting group with hydrazine permits the elongation from the other, resulting in asymmetrical branching. The branches can differ in sequence, reporter molecules, or both.

Levulinyl Deprotection Solution

Catalog#	Pricing
CLP-7171	$44.00 / 5 ml
	$72.00 / 10 ml

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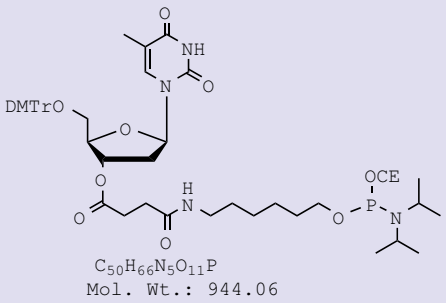
Phosphoramidites and Supports for Introducing Chromophores & Ligands

Carboxyl Generating reagents

5′-Carboxyl Group Generating Reagent
(Thymidine-succinyl-hexamide CEP)



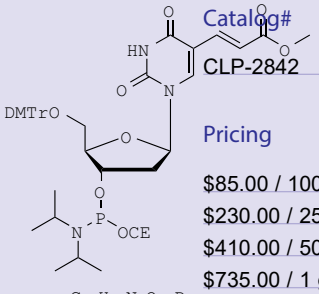
Catalog# CLP-2244

Pricing
$85.00 / 100 µmole
$200.00 / 250 mg
$360.00 / 500 mg
$645.00 / 1 g

Purity: 98% +

For oligos requiring a 5′-carboxylic group, this is an excellent reagent. This ligand is introduced to the oligo via attachment to a C-6 spacer at the 5′-end of the DNA or RNA oligo.

C5 Carboxyl Introducing Phosphoramidite
('5-O-DMT-C5-Methylacrylate-2′-deoxyuridine CEP)

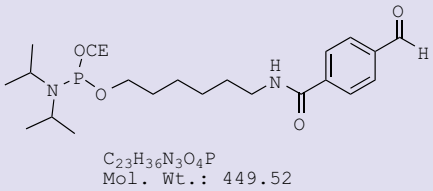


Catalog# CLP-2842

Pricing
$85.00 / 100 µmole
$230.00 / 250 mg
$410.00 / 500 mg
$735.00 / 1 g

Purity: 98% +

Hexyl-(C6)-amido (p-benzaldehyde)-1-Phosphoramidite

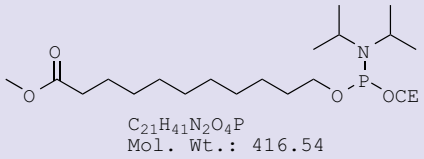


Catalog# CLP-2243

Pricing
$265.00 / 100 µmole
$600.00 / 250 mg
$960.00 / 500 mg
$1550.00 / 1 g

Purity: 98% +

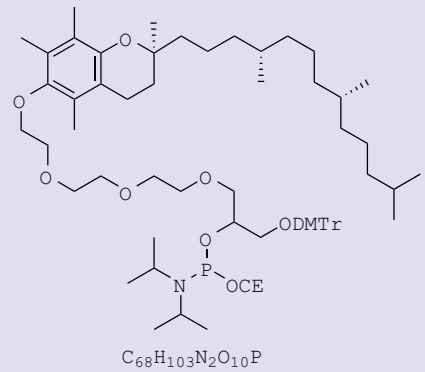
Undecanoic acid Phosphoramidite



Catalog#	Pricing
CLP-8146	$265.00 /100 µmole
	$600.00 / 250 mg
	$960.00 / 500 mg
	$1550.00 / 1 g

Purity: 98% +

(+)-a-Tocopherol-Phosphoramidite
(Vitamin E Phosphoramidite)



Catalog# CLP-2706

Pricing
$150.00 / 50 µmole
$275.00 / 100 µmole
$550.00 / 250 mg
$990.00 / 500 mg
$1780.00 / 1 g

Purity: 98% +

5′-Carboxyl Group Generating Reagent

Several carboxyl group generating reagents are available from ChemGenes Corporation. Primarily the carboxy modified oligonucleotides can be used for immobilization to various amino modified surfaces or further oligonucleotide labeling with corresponding reporter molecules having primary alkyamino group.

Hexyl-(C6)-amido (p-benzaldehyde)-1-Phosphoramidite

Aldehyde and ketone modified oligonucleotides can be used for immobilization to various hydrazide or aminooxy modified surfaces or further oligonucleotide labeling with corresponding reporter molecules having hydrazide or aminooxy group.[1,2]

1.Dey, S.; Sheppard, T. L. *Org. Lett.* **2001**, *3*, 3983.
2.Defrancq, E.; Lhomme, J. *Bioorg. Med. Chem. Lett.* **2001**, *11*, 931.

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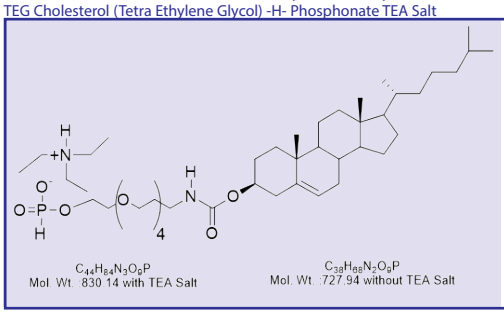
Oligo Synthesis Products

Phosphoramidites and Supports for Introducing Chromophores & Ligands

Cholesterol Labelling

Cholesterol TEG (Tetra Ethylene Glycol) H-Phosphonate

TEG Cholesterol (Tetra Ethylene Glycol) -H- Phosphonate TEA Salt

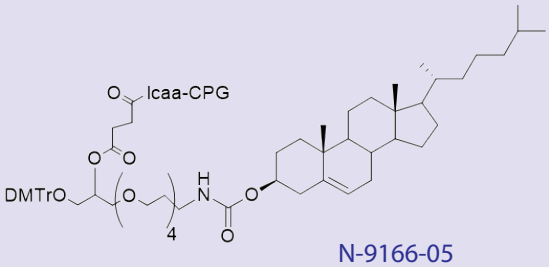


Catalog# CLP-2705

Pricing
$140.00 / 50 µmole
$265.00 / 100 µmole
$720.00 / 250 mg
$1150.00 / 500 mg
$1840.00 / 1 g

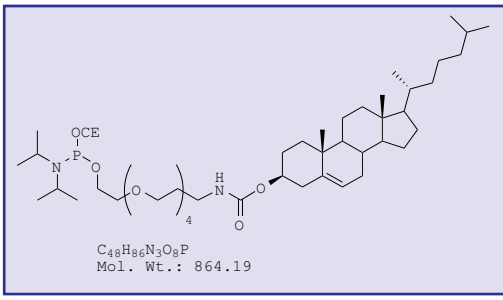
Purity: 98% +

Cholesterol TEG Icaa CPG



N-9166-05

Cholesterol (Plant source) TEG Phosphoramidite

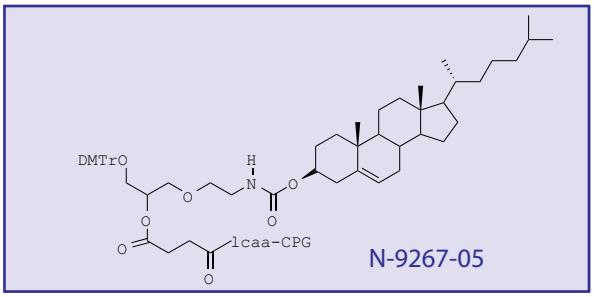


Catalog# CLP-2795

Pricing
$140.00 / 50 µmole
$265.00 / 100 µmole
$650.00 / 250 mg
$1100.00 / 500 mg
$1760.00 / 1 g

Purity: 98% +

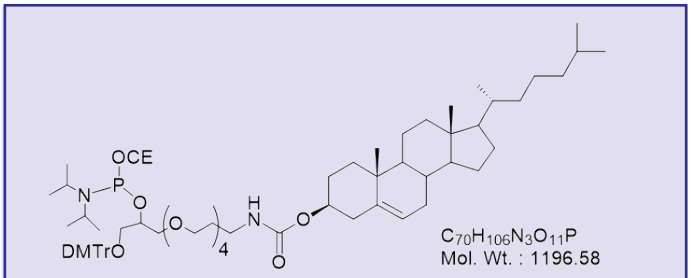
Cholesterol (8 atom spacer) Icaa CPG



N-9267-05

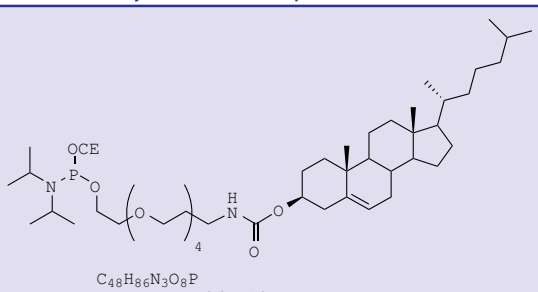
DMTr-Cholesterol TEG Phosphoramidite

(Generates DMTr color) (Plant source)



Catalog#	Pricing
CLP-2703	$150.00 / 50 µmole
	$275.00 / 100 µmole
	$525.00 / 250 mg
	$945.00 / 500 mg
Purity: 98%+	$1700.00 / 1 g

Cholesterol TEG (Synthetic) Phosphoramidite



Catalog#	Pricing
CLP-2704	$140.00 / 50 µmole
	$265.00 / 100 µmole
	$650.00 / 250 mg
	$1100.00 / 500 mg
Purity: 98%+	$1760.00 / 1 g

Cholesterol Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9166-05	3'-Cholesterol-TEG-lcaa CPG	500Å	$115	$970	$110	$175	$220	$350
N-9267-05	Cholesterol-C4-lcaa CPG	500Å	$115	$970	$110	$175	$220	$350

Cholesterol TEG phosphoramidite and solid supports:

Potential therapeutic oligonucleotides must permeate the cell membrane for optimal activity. The addition of lipophilic groups to an oligonucleotide would be expected to enhance activity. The use of cholesteryl oligos and the consequent improvement in activity has been described. Cholesterol phosphoramidite is designed with branched tetraethyleneglycol (TEG) spacer for maximium solubility in acetonitrile as well as for applications requiring multiple labels.

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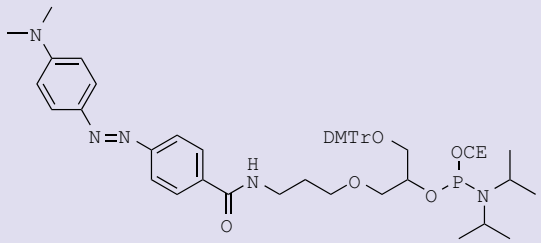
Oligo Synthesis Products

Phosphoramidites and Supports for Introducing Chromophores & Ligands

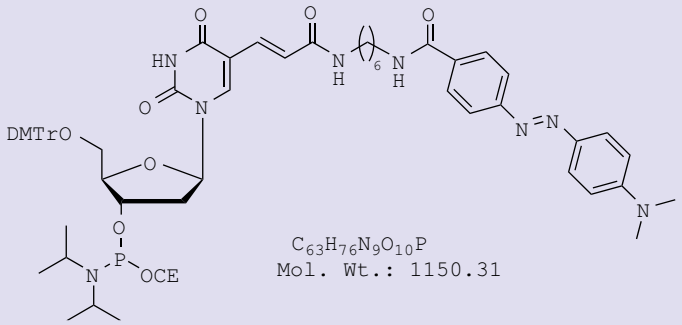
Dabcyl Labelling

Dabcyl CEP



Catalog#	Pricing
CLP-1522	$110.00 / 50 µmole
	$265.00 /100 µmole
	$600.00 / 250 mg
	$960.00 / 500 mg
Purity: 98%+	$1550.00 / 1 g

Thymidine-C5-dabcyl CEP



Catalog#	Pricing
CLP-9906	$165.00 / 50 µmole
	$300.00 /100 µmole
	$580.00 / 250 mg
	$1040.00 / 500 mg
Purity: 98%+	$1870.00 / 1 g

Dabcyl phosphoramidites and solid supports:

A molecular beacon probe has its natural fluorescene quenched in solution unless it is hybridized to the target sequence. Consequently, the design of a molecular beacon requires a fluorophore to be in one part of the sequence and the quencher molecule to be in another, with both molecules being separated from the oligonucleotide by a hydrocarbon spacer. The Dabcyl group has been found to be a universal quencher. Dabcyl CPGs and Dabcyl amidites are used to prepare probes with the quencher blocking the 3'-terminus.

5'-Dabcyl phosphoramidite locates the quencher at the 5'-terminus and Dabcyl-dT places it within the sequence, leaving the 3'-terminus available for polymerase extension.

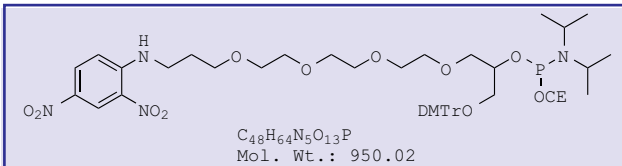
Dabcyl Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9756-05	Dabcyl-lcaa-CPG	500Å	$110	$940	$110	$175	$220	$350
N-9756-10		1000Å						
N-9756-PF	Dabcyl-succinyl-Polymeric Support	500Å	$110	$940	$110	$175	$220	$350

DNP Labelling

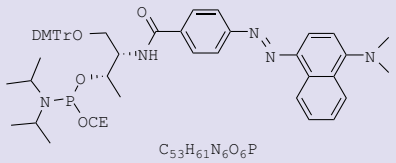
DNP-TEG CEP

CAS No. 1027512-01-1



Catalog#	Pricing
CLP-9907	$150.00 / 50 µmole
	$280.00 /100 µmole
	$660.00 / 250 mg
	$1120.00 / 500 mg
Purity: 98%+	$1900.00 / 1 g

Naphthyl Red (D-Threoninol linker) phosphoramidite



Catalog#
CLP-6643

Pricing
$95.00 / 50 µmole
$185.00 / 100 µmole
$460.00 / 250 mg
$820.00 / 500 mg
$1390.00 / 1 g
Purity: 98% +

DNP-TEG Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9127-05	DNP-TEG-lcaa-CPG	500Å	$115	$960	$110	$185	$220	$370

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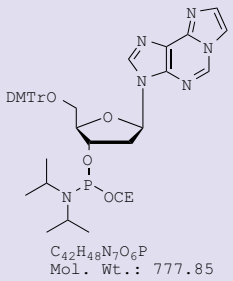
Fluorescein Labelling

Etheno-deoxy-adenosine CEP

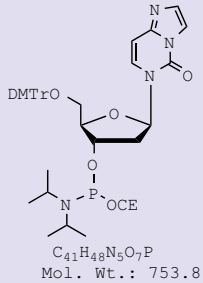


Catalog# CLP-9181

Pricing
$95.00 / 100 µmole
$240.00 / 250 mg
$400.00 / 500 mg
$680.00 / 1 g

Purity: 98% +

Etheno-deoxy-cytidine CEP



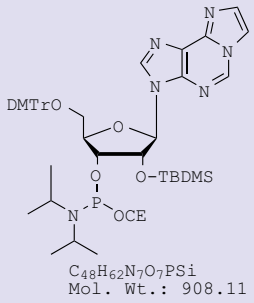
Catalog# CLP-9182

Pricing
$95.00 / 100 µmole
$240.00 / 250 mg
$400.00 / 500 mg
$680.00 / 1 g

Purity: 98% +

Etheno-adenosine CEP

(Etheno-2'-*O*-TBDMS-adenosine CEP)



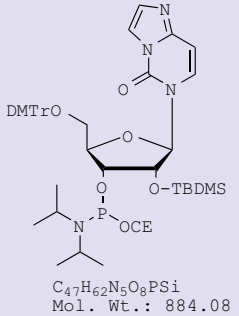
Catalog# CLP-9191

Pricing
$190.00 / 100 µmole
$470.00 / 250 mg
$846.00 / 500 mg
$1500.00 / 1 g

Purity: 98% +

Etheno-cytidine CEP

(Etheno-2'-*O*-TBDMS-cytidine CEP)



Catalog# CLP-9192

Pricing
$190.00 / 100 µmole
$470.00 / 250 mg
$846.00 / 500 mg
$1500.00 / 1 g

Purity: 98% +

Etheno Adenosine & Etheno Cytidine

Etheno-Nucleosides have high fluorescent intensity, especially etheno cytidine. They have been used for various applications such as: extremely low detection probes, selective introduction in synthetic DNA/RNA, and nucleic acid structure function & determination. Primers with etheno modification undergo PCR and are amplified. These fluorescent nucleosides are base sensitive and should be deprotected using mild conditions. (Srivastava, S. C.; Raza, S. K.; Misra, R. *Nucl. Acids Res.* **1994**, *22*, 1296-1304)

Etheno Adenosine; Detection Limit:10^{-9}, Excitation : 260nm, Emission : 430nm
Etheno Cytidine; Detection Limit:10^{-7}

Etheno Succinyl Icaa Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9113-05 N-9113-10	Etheno-deoxy-adenosine-3'-Icaa CPG	500Å 1000Å	$70	$550	$80	$110	$160	$240
N-9114-05 N-9114-10	Etheno-deoxy-cytidine-3'-Icaa CPG	500Å 1000Å	$60	$500	$50	$95	$100	$190
N-9191-05 N-9191-10	Etheno-adenosine-2'-TBDMS 3'-Icaa CPG	500Å 1000Å	$110	$910	$100	$135	$200	$270
N-9192-05 N-9192-10	Etheno-cytidine-2'-TBDMS 3'-Icaa CPG	500Å 1000Å	$110	$910	$100	$135	$200	$270
N-9091-05 N-9091-10	Etheno-adenosine-2'/3'-Icaa CPG	500Å 1000Å	$110	$910	$100	$135	$200	$270
N-9092-05 N-9092-10	Etheno-cytidine-2'/3'-Icaa CPG	500Å 1000Å	$110	$910	$100	$135	$200	$270

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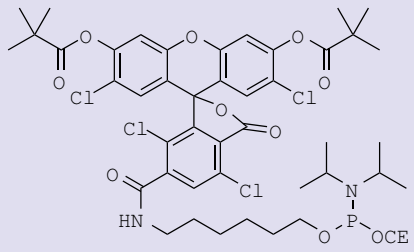
Phosphoramidites and Supports for Introducing Chromophores & Ligands

Fluorescein Labelling

Tetrachloro-fluorescein (TET)Phosphoramidite



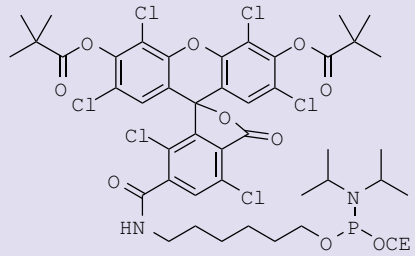
$C_{46}H_{54}Cl_4N_3O_{10}P$
Mol. Wt.: 981.72

Catalog# CLP-9779

Pricing
$175.00 / 50 µmole
$350.00 / 100 µmole
$850.00 / 250 mg
$1550.00 / 500 mg

Purity: 98% +

Hexachloro-fluorescein (HEX) Phosphoramidite



$C_{46}H_{52}Cl_6N_3O_{10}P$
Mol. Wt.: 1050.61

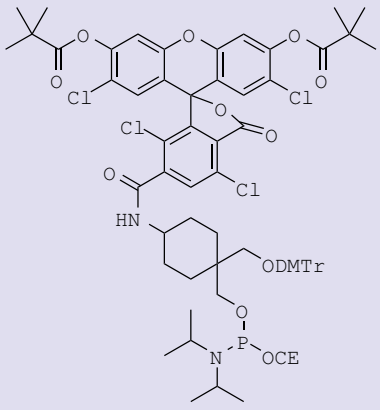
Catalog# CLP-9778

Pricing
$175.00 / 50 µmole
$350.00 / 100 µmole
$850.00 / 250 mg
$1550.00 / 500 mg

Purity: 98% +

CAS No. 1360547-55-2

Tetrachloro-fluorescein-cyclohexyl CEP



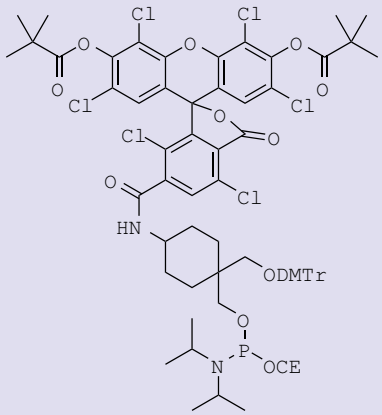
$C_{69}H_{74}Cl_4N_3O_{13}P$
Mol. Wt.: 1326.12

Catalog# CLP-1526

Pricing
$148.00 / 50 µmole
$292.00 / 100 µmole
$540.00 / 250 mg
$1050.00 / 500 mg

Purity: 98% +

Hexachloro-fluorescein-cyclohexyl CEP



$C_{69}H_{72}Cl_6N_3O_{13}P$
Mol. Wt.: 1395.01

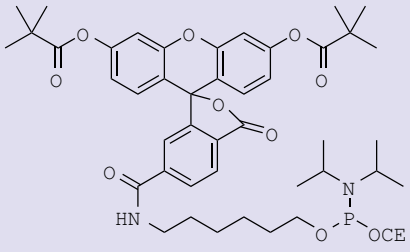
Catalog# CLP-1527

Pricing
$148.00 / 50 µmole
$292.00 / 100 µmole
$540.00 / 250 mg
$1050.00 / 500 mg

Purity: 98% +

6-FAM Phosphoramidite

CAS No. 204697-37-0



$C_{46}H_{58}N_3O_{10}P$
Mol. Wt.: 843.94

Catalog# CLP-9777

Purity: 98% +

Pricing
$98.00 / 50 µmole
$184.00 / 100 µmole
$490.00 / 250 mg
$880.00 / 500 mg

TET, HEX, 6-FAM

These fluorescein derivatives have been used for non-isotopic fluorescent sequencing, hybridization, and PCR product quantitation. They either are used for antibody binding or as a fluorophore for fluorescent signal generation. Each have their own excitation and emission wavelengths: 6-FAM (ABS=492nm & EM=515nm), HEX (ABS=535nm & EM=556 nm), TET (ABS=521nm & EM=536nm). The fluorescence and absorbance of fluorescein is very pH sensitive with both being the greatest at pH 8-9.
These fluorescent labels are generally added to the 5' end. Purification of the oligo is recommended either by HPLC or PAGE.

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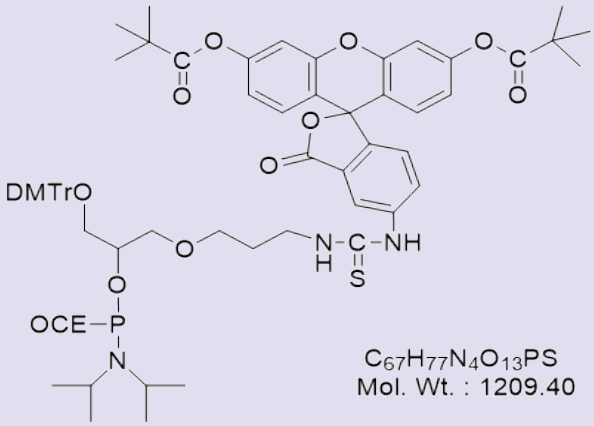
Email: info@chemgenes.com

Fluorescein Labelling

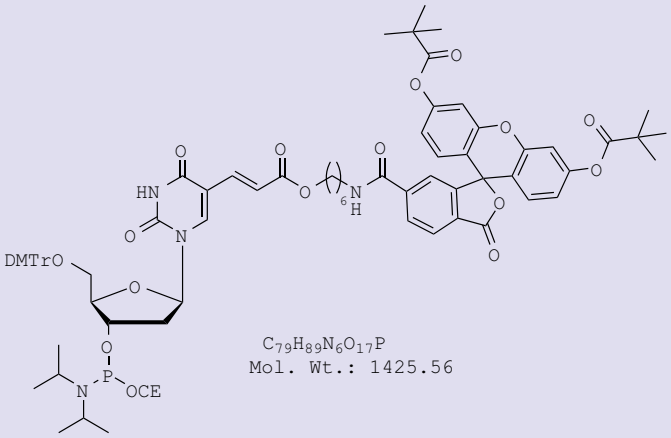
5-Fluorescein CEP



Catalog#	Pricing
CLP-4282	$155.00 / 50 µmole
	$275.00 / 100 µmole
	$550.00 / 250 mg
	$990.00 / 500 mg

Purity: 98% +

Fluorescein-dT CEP



Catalog#	Pricing
CLP-9905	$180.00 / 50 µmole
	$325.00 / 100 µmole
	$560.00 / 250 mg
	$1100.00 / 500 mg

Purity: 98% +

Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-5122-05	Fluorescein-dT-lcaa CPG	500Å	$120	$995	$120	$200	$240	$400
N-9979-05	Fluorescein-lcaa CPG	500Å	$110	$970	$110	$180	$220	$360
N-9986-05	6-FAM-lcaa CPG (DMT)	500Å	$110	$970	$110	$180	$220	$360

CLP-4282, CLP-9905 fluorescein amidites generate DMTr-color after oligo coupling.

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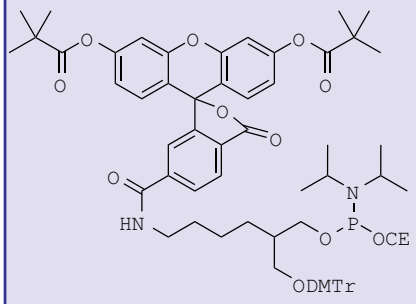
Oligo Synthesis Products

Phosphoramidites and Supports for Introducing Chromophores & Ligands

Fluorescein Labelling

DMTr-6-FAM Phosphoramidite



$C_{68}H_{78}N_3O_{13}P$
Mol. Wt.: 1176.33

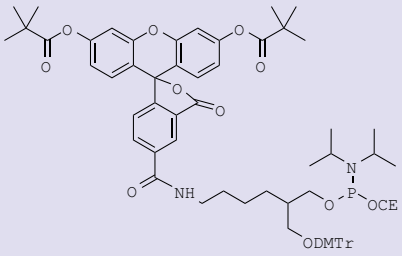
Catalog# CLP-9780

Pricing

$160.00 / 50 µmole
$300.00 / 100 µmole
$610.00 / 250 mg
$1090.00 / 500 mg

Purity: 98% +

DMTr-5-FAM Phosphoramidite



$C_{68}H_{78}N_3O_{13}P$
Mol. Wt.: 1176.33

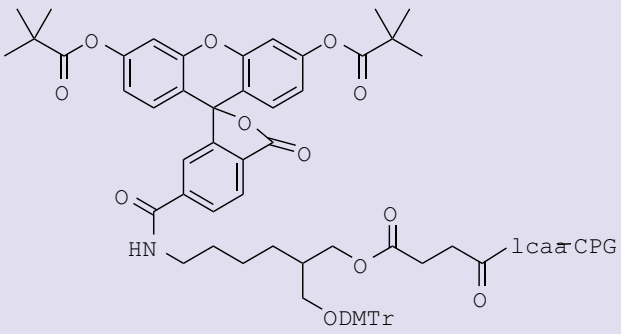
Catalog# CLP-9789

Pricing

$160.00 / 50 µmole
$300.00 / 100 µmole
$610.00 / 250 mg
$1090.00 / 500 mg

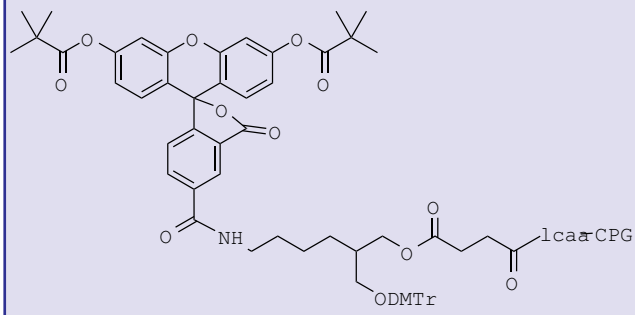
Purity: 98% +

6-FAM CPG



Catalog# N-9985-05

5-FAM CPG



Catalog# N-9969-05

5 & 6 FAM Supports & Columns

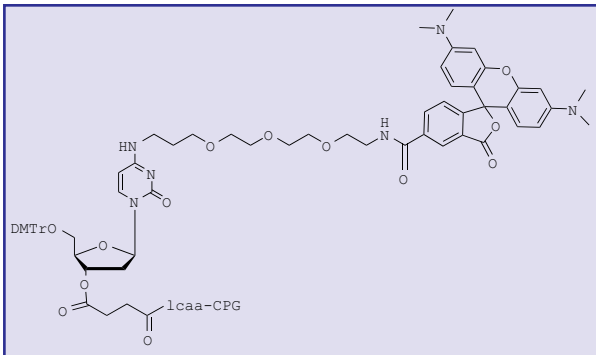
Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9985-05	DMT-6-FAM Icaa CPG	500Å	$110	$970	$110	$180	$220	$360
N-9969-05	DMT-5-FAM Icaa CPG	500Å	$104	$832	$104	$168	$208	$375

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

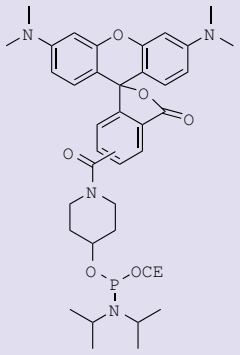
Rodamine (Tamra) Labelling

N^4-6-TAMRA-cytidine-3'- Icaa CPG



Catalog# N-2145-05

5'-TAMRA CEP



$C_{39}H_{48}N_5O_6P$
Mol. Wt.: 713.80

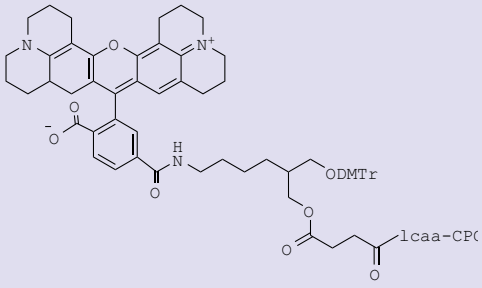
Catalog#	Pricing
CLP-9066	$185.00 / 50 µmole
	$395.00 / 100 µmole
	$1090.00 / 250 mg
	$1740.00 / 500 mg

Purity: 98% +

Cocktail for TAMRA

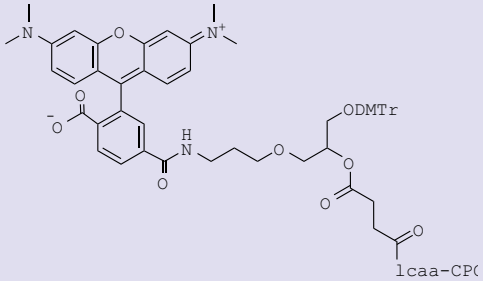
Catalog#	Pricing
RN-8561	$50.00 / 5 ml

Rox Supports & Columns



Catalog# N-2246-05

6-TAMRA Supports & Columns



Catalog# N-2255-05

TAMRA Supports & Columns

			Bulk CPG		pack of 4 cols.		pack of 10 cols.	
Catalog #	Product Name	Pore Size	100 mg	1 g	0.2 µmole	1.0 µmole	0.2 µmole	1.0 µmole
N-2145-05	N^4-6-TAMRA-Cytidine-3'-Icaa CPG	500Å	$104	$832	$104	$168	$208	$375
N-2246-05	Rox-Icaa CPG	500Å	$120	$880	$120	$220	$224	$392
N-2255-05	TAMRA-Icaa CPG	500Å	$104	$832	$104	$168	$208	$375

TAMRA & Rox

Like Fluorescein, Tetra-methyl Rhodamine (TAMRA) conjugates are usually a mix of two isomers. ChemGenes supplies 5'-TAMRA as amidites with both two isomers having the same spectral properties. They both excite at λ 540 nm and emit at λ 570 nm. They are much less pH sensitive. We offer the CPG columns for the 3'-TAMRA labeling and also TAMRA NHS Esters for labeling amino-modified oligonucleotides.
These fluorescent labels are generally added to the 5' end. Purification of the oligo is recommended either by HPLC or PAGE.

Note: Price includes TAMRA Cocktail

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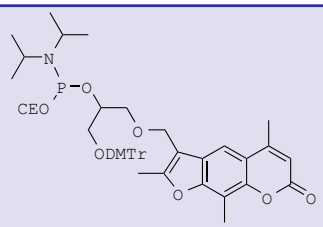
Oligo Synthesis Products

Phosphoramidites and Supports for Introducing Chromophores & Ligands

Psoralen Labelling

Psoralen CEP
(Generates DMTr color)

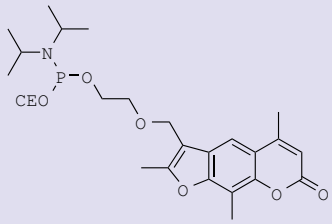


$C_{48}H_{55}N_2O_9P$
Mol. Wt.: 834.93

Catalog#	Pricing
CLP-6644	$115.00 / 50 µmole
	$185.00 / 100 µmole
	$495.00 / 250 mg
	$890.00 / 500 mg

Purity: 98% +

Psoralen-C2 spacer CEP

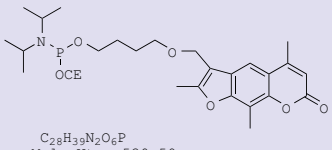


$C_{26}H_{35}N_2O_6P$
Mol. Wt.: 502.5

Catalog#	Pricing
CLP-6647	$190.00 / 100 µmole
	$660.00 / 250 mg
	$1056.00 / 500 mg

Purity: 98% + CAS No. 126221-83-8

Psoralen-C4 spacer CEP

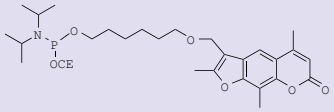


$C_{28}H_{39}N_2O_6P$
Mol. Wt.: 530.59

Catalog#	Pricing
CLP-6648	$195.00 / 100 µmole
	$630.00 / 250 mg
	$1010.00 / 500 mg

Purity: 98% +

Psoralen- C6 spacer CEP



$C_{30}H_{43}N_2O_6P$
Mol. Wt.: 558.65

Catalog#	Pricing
CLP-6641	$170.00 / 100 µmole
	$645.00 / 250 mg
	$1030.00 / 500 mg

Purity: 98% + CAS No. 518046-08-7

Please Indicate Synthesizer when Ordering

ABI	ABI 3900	Expedite	MerMade	PolyPlex	Akta Oligopilot
AB30	AB39	EX	MR	PX	AK

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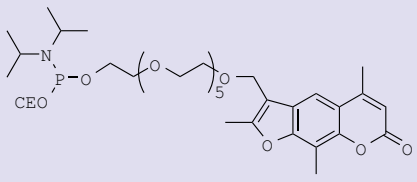
Psoralen Labelling

Psoralen-hexaethyleneglycol-CEP
(18 atom spacer)

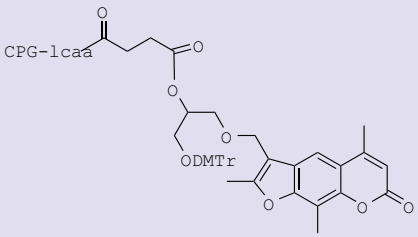


$C_{36}H_{55}N_2O_{11}P$
Mol. Wt.: 722.80

Catalog#	Pricing
CLP-6642	$187.00 / 100 µmole
	$570.00 / 250 mg
	$1037.00 / 500 mg

Purity: 98% +

Psoralen CPG



N-9375-05

Psoralen Supports & Columns

Catalog #	Product Name	Pore Size	Bulk CPG 100 mg	Bulk CPG 1 g	pack of 4 cols. 0.2 µmole	pack of 4 cols. 1.0 µmole	pack of 10 cols. 0.2 µmole	pack of 10 cols. 1.0 µmole
N-9375-05	Psoralen CPG	500Å	$115	$970	$110	$170	$220	$340
N-9081-05	Psoralen-C4	500Å	$140	$970	$110	$170	$220	$340
N-9081-10	Icaa CPG	1000Å						

Psoralens are a class of naturally occuring compounds which have been used for centuries to treat skin and tumor diseases. Psoralen binds to DNA non-specifically. Psoralen modified oligonucleotides are expected to be superior than Psoralen itself as they will hydrolize to target oligonucleotides having complementary sequences. Psoralen derived oligonucleotides have been synthesized and found to recognize complementary target DNA sequences. The double stranded DNA fragents were found to be covalently cross-linked upon irradiation at 35 nm. *(*Pieles, U.; English, U. *Nucl. Acids Res.* **1989**, 17, 285; Pieles, U.; Sproat, B. S.; Neuner, P.; Cramer, F. *Nucl. Acids. Res.* **1989**, *17*, 8967*)*.

Psoralen attached oligonucleotides have also been hybridized with complementary target sites on RNA followed by cross-linking after photo reaction. (Teare, J.; Wollenzien, P. *Nucl. Acids Res.* **1989**, *17*, 3559). Photoinduced cross-linking has also been achieved on a double-stranded DNA by forming a triple helix. (Takasugi, M.; Guendouz, A.; Chassignol, M.; Decont, J. L.; Lhomme, J.; Thuoing, N. T., Helene, C. *Proc. Natl. Acad. Sci. USA,* **1991**, *88*, 5602). Furthermore, Psoralen derived oligonucleotide methyl-phosphates have been shown to cross-link in a sequence specific manner to single-dependant antiviral activity in cultured cells infected with herpes simplex virus type-1 (HSV-1) (Kulka, M.; Smith, C.; Aurelian, L.; Fisheluich, R.; Meade, K.; Miller, P.; Ts'O, P.O.P. *Proc. Natl. Acad. Sci. USA*, **1989**, *86*, 6868).

The psoralen support is a 16 atom spacer between Psoralen and the oligo chain (3'-end).

Please Indicate Synthesizer when Ordering

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AB30	AB39	EX	MR	PX	AK

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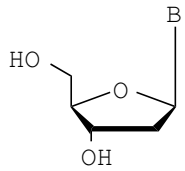
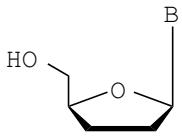


Deoxy Nucleosides

B	Catalog#	CAS No.
A	DN-1001	958-09-8
C	DN-1002	3992-42-5
G	DN-1003	312693-72-4
T	DN-1004	50-89-5
C	DN-1002fb	

Catalog#	Product Name	1g	5g	25g	100g	500g
DN-1001	2'- β-D-Deoxyadenosine Monohydrate *M.W. 269.26*	$6.00	$17.00	$68.00	$218.00	$354.00
DN-1002	2'-β-D-Deoxycytidine Monohydrochloride *M.W. 263.68*	$6.00	$17.00	$68.00	$218.00	$354.00
DN-1003	2'-β-D-Deoxyguanosine Monohydrate *M.W. 285.26*	$6.00	$17.00	$68.00	$218.00	$354.00
DN-1004	β-D-Thymidine *M.W. 242.23*	$6.00	$17.00	$68.00	$218.00	$354.00
DN-1002fb	2'-β-D-Deoxycytidine (Free Base) *M.W. 227.18*	$6.00	$19.00	$73.00	$250.00	$1,000.00

Purity: (1) All the above produced have a purity of 99% +
(2) α anomer undetected



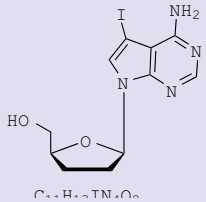
Dideoxy Nucleosides

B	Catalog#	CAS No.
A	DDN-1844	4097-22-7
C	DDN-1868	7481-89-2
G	DDN-1882	
T	DDN-1883	3416-05-5
U	DDN-1892	5983-09-5
I	DDN-1893	69655-05-6

Catalog#	Product Name	100mg	500mg	1g	5g
DDN-1844	2',3'-β-D-Dideoxyadenosine *M.W. 235.24*	$80.00	$210.00	$480.00	$1,680.00
DDN-1868	2',3'-β-D-Dideoxycytidine *M.W. 211.22*	$80.00	$210.00	$480.00	$1,680.00
DDN-1882	2',3'-β-D-Dideoxyguanosine *M.W. 251.24*	$80.00	$210.00	$480.00	$1,680.00
DDN-1883	3'-β-D-Deoxythymidine *M.W. 226.23*	$80.00	$210.00	$480.00	$1,680.00
DDN-1892	2',3'-β-D-Dideoxyuridine *M.W. 212.20*	$80.00	$210.00	$480.00	$1,680.00
DDN-1893	2',3'-β-D-Dideoxyinosine *M.W. 236.23*	$80.00	$210.00	$480.00	$1,680.00

Purity:(1) All the above produced have a purity of 98% + (2) α anomer undetected

7-Deaza-

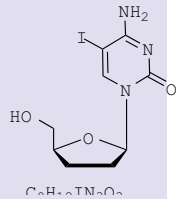


Catalog# DDN-3818

Pricing
$388.00 / 100 mg
$740.00 / 250 mg
$1650.00 / 500 mg
$2800.00 / 1 g

Purity: 98% +

5-Iodo-2'-3'-β-D-dideoxycytidine

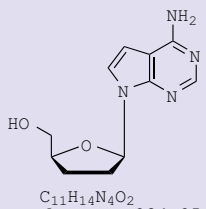


Catalog# DDN-1731

Pricing
$220.00 / 100 mg
$440.00 / 250 mg
$700.00 / 500 mg
$1120.00 / 1 g

Purity: 98% +

7-Deaza-2',3'-β-D-dideoxyadenosine



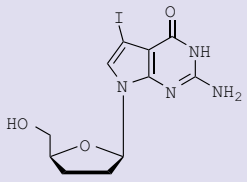
$C_{11}H_{14}N_4O_2$
Mol. Wt.: 234.25

Catalog# DDN-3864

Pricing
$360.00 / 100 mg
$720.00 / 250 mg
$1152.00 / 500 mg
$1844.00 / 1 g

Purity: 98% +

7-Deaza-7-Iodo-2'-3'-β-D-dideoxyguanosine



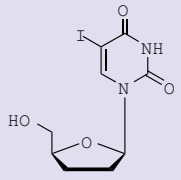
$C_{11}H_{13}IN_4O_3$
Mol. Wt.: 376.15

Catalog# DDN-3819

Pricing
$388.00 / 100 mg
$740.00 / 250 mg
$1650.00 / 500 mg
$2800.00 / 1 g

Purity: 98% +

5-Iodo-2'-3'-β-D-dideoxyuridine



$C_9H_{11}IN_2O_4$
Mol. Wt.: 338.1

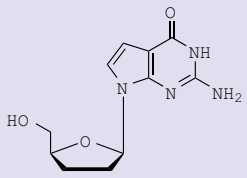
Catalog# DDN-1884

Pricing
$170.00 / 100 mg
$340.00 / 250 mg
$540.00 / 500 mg
$860.00 / 1 g

Purity: 98% +

CAS No. 105784-83-6

7-Deaza-2,3-β-D-dideoxygunaosine



$C_{11}H_{14}N_4O_3$
Mol. Wt.: 250.25

Catalog# DDN-1863

Pricing
$360.00 / 100 mg
$720.00 / 250 mg
$1152.00 / 500 mg
$1844.00 / 1 g

Purity: 98% +

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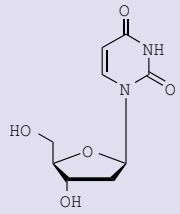
Modified Deoxy Nucleosides

2′-β-D-Deoxyuridine



$C_9H_{12}N_2O_5$
Mol. Wt.: 228.

CAS No. 951-78-0

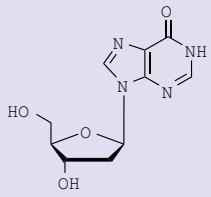
Catalog# DN-6373

Pricing

$ 17.00 / 1 g
$ 75.00 / 5 g
$ 135.00 / 10 g
$ 320.00 / 25 g
$1,120.00 / 100 g

Purity: 98% +

2′-β-D-Deoxyinosine



$C_{10}H_{12}N_4O_4$
Mol. Wt.: 252.23

CAS No. 890-38-0

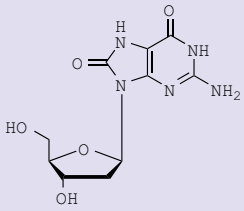
Catalog# DN-4002

Pricing

$ 19.00 / 1 g
$ 83.00 / 5 g
$155.00 / 10 g
$350.00 / 25 g
$1,197.00 / 100 g

Purity: 98% +

8-Oxo-2′-deoxyguanosine



$C_{10}H_{13}N_5O_5$
Mol. Wt.: 283.24

CAS No. 88847-89-6

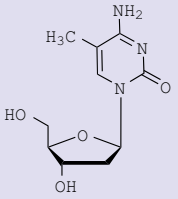
Catalog# DN-1205

Pricing

$ 160.00 / 250 mg
$ 280.00 / 500 mg
$ 500.00 / 1 g
$2,215.00 / 5g

Purity: 98% +

5-Methyl-2′-deoxycytidine



$C_{10}H_{15}N_3O_4$
Mol. Wt.: 241.2

CAS No. 838-07-3

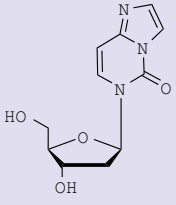
Catalog# DN-2013

Pricing

$ 60.00 / 250 mg
$110.00 / 500 mg
$195.00 / 1 g
$780.00 / 5g

Purity: 98% +

Etheno-2′-deoxycytidine



$C_{11}H_{13}N_3O_4$
Mol. Wt.: 251.

CAS No. 68498-26-0

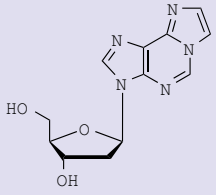
Catalog# DN-4252

Pricing

$50.00 / 25 mg
$160.00 / 100 mg
$320.00 / 250 mg
$510.00 / 500 mg

Purity: 98% +

Etheno-2′-deoxyadenosine



$C_{12}H_{13}N_5O_3$
Mol. Wt.: 275.26

CAS No. 68498-25-9

Catalog# DN-4895

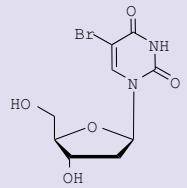
Pricing

$50.00 / 25 mg
$160.00 / 100 mg
$320.00 / 250 mg
$510.00 / 500 mg

Purity: 98% +

Modified Deoxy Nucleosides

5-Bromo-2′-deoxyuridine



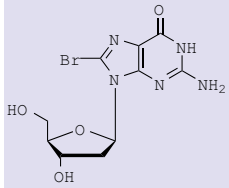
$C_9H_{11}BrN_2O_5$
Mol. Wt.: 307.

Catalog# DN-1136

Pricing
$20.00 / 1 g
$90.00 / 5 g
$160.00 / 10 g
$290.00 / 25 g

Purity: 98% +

8-Bromo-2′-deoxyguanosine



$C_{10}H_{12}BrN_5O_4$
Mol. Wt.: 346.14

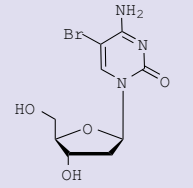
CAS No. 13389-03-2

Catalog# DN-1203

Pricing
$80.00 / 1 g
$320.00 / 5 g
$512.00 / 10 g
$1,020.00 / 25 g

Purity: 98% +

5-Bromo-2′-deoxycytidine



$C_9H_{12}BrN_3O_4$
Mol. Wt.: 306

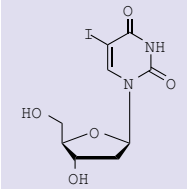
CAS No. 1022-79-3

Catalog# DN-6496

Pricing
$80.00 / 1 g
$320.00 / 5 g
$512.00 / 10 g
$1,020.00 / 25 g

Purity: 98% +

5-Iodo-2′-deoxyuridine



$C_9H_{11}IN_2O_5$
Mol. Wt.: 354

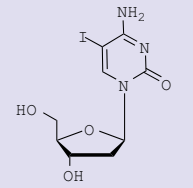
CAS No. 54-42-2

Catalog# DN-1180

Pricing
$48.00 / 1 g
$192.00 / 5 g
$308.00 / 10 g
$616.00 / 25 g

Purity: 98% +

5-Iodo-2′-deoxycytidine



$C_9H_{12}IN_3O_4$
Mol. Wt.: 353

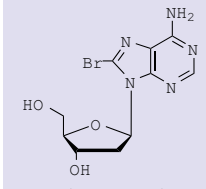
CAS No. 611-53-0

Catalog# DN-1181

Pricing
$50.00 / 1 g
$225.00 / 5 g
$385.00 / 10 g
$770.00 / 25 g

Purity: 98% +

8-Bromo-2′-deoxyadenosine



$C_{10}H_{12}BrN_5O_3$
Mol. Wt.: 330.

CAS No. 14985-44-5

Catalog# DN-1182

Pricing
$90.00 / 1 g
$380.00 / 5 g
$646.00 / 10 g
$1,290.00 / 25 g

Purity: 98% +

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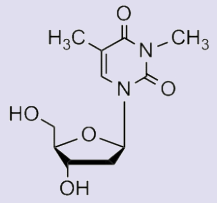
Modified Deoxy Nucleosides

N^3-Methyl-thymidine



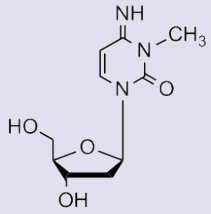
$C_{11}H_{16}N_2O_5$
Mol. Wt.: 256.26

Catalog#
DN-1599

Pricing
$ 42.00 / 25 mg
$135.00 / 100 mg
$540.00 / 500 mg

Purity: 98% +

N^3-Methyl-2′-deoxycytidine



$C_{10}H_{15}N_3O_4$
Mol. Wt.: 241.24

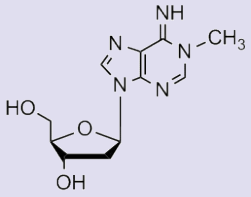
CAS No. 5040-21-1

Catalog#
DN-6493

Pricing
$ 110.00 / 25 mg
$ 375.00 / 100 mg
$1,590.00 / 500 mg

Purity: 98% +

N^1-Methyl-2′-deoxyadenosine



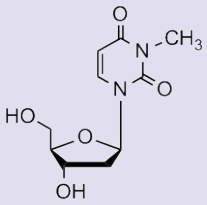
$C_{11}H_{15}N_5O_3$
Mol. Wt.: 265.27

Catalog#
DN-1597

Pricing
$ 120.00 / 25 mg
$ 382.00 / 100 mg
$1,528.00 / 500 mg

Purity: 98% +

N^3-Methyl-2′-deoxyuridine



$C_{10}H_{14}N_2O_5$
Mol. Wt.: 242.23

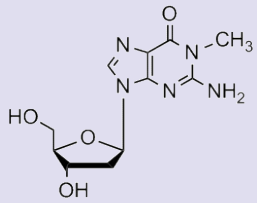
CAS No. 24514-32-7

Catalog#
DN-6495

Pricing
$ 80.00 / 25 mg
$275.00 / 100 mg
$1,100.00 / 500 mg

Purity: 98% +

N^1-Methyl-2′-deoxyguanosine



$C_{11}H_{15}N_5O_4$
Mol. Wt.: 281.27

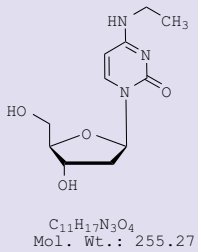
CAS No. 5132-79-6

Catalog#
DN-1598

Pricing
$ 120.00 / 25 mg
$382.00 / 100 mg
$1,528.00 / 500 mg

Purity: 98% +

N^4-Ethyl-2′-deoxycytidine



$C_{11}H_{17}N_3O_4$
Mol. Wt.: 255.27

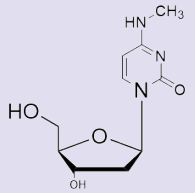
CAS No. 70465-61-1

Catalog#
DN-7474

Pricing
$ 88.00 / 1 g
$ 410.00 / 5 g
$ 640.00 / 10 g

Purity: 98% +

N^4-Methyl-2′-deoxycytidine

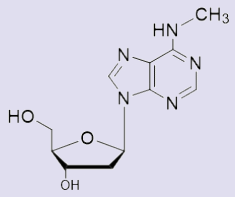


Catalog#
DN-2016

Pricing
$88.00 / 1 g
$410.00 / 5 g
$640.00 / 10 g

Purity: 98% +

N^6-Methyl-2′-deoxyadenosine



CAS No. 2002-35-9

Catalog#
DN-2015

Pricing
$ 90.00 / 1 g
$410.00 / 5 g
$730.00 10 g

Purity: 98% +

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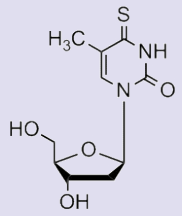
Modified Deoxy Nucleosides

4-Thio-thymidine



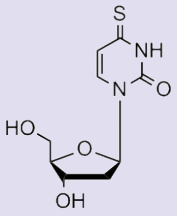
$C_{10}H_{14}N_2O_4S$
Mol. Wt.: 258.30
CAS No. 7236-57-9

Catalog# DN-1781

Pricing
$45.00 / 50 mg
$75.00 / 100 mg
$210.00 / 250 mg

Purity: 98% +

4-Thio-2′-deoxyuridine



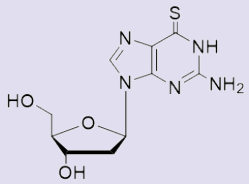
$C_9H_{12}N_2O_4S$
Mol. Wt.: 244.27

Catalog# DN-1263

Pricing
$45.00 / 50 mg
$75.00 / 100 mg
$210.00 / 250 mg

Purity: 98% +

6-Thio-2′-deoxyguanosine



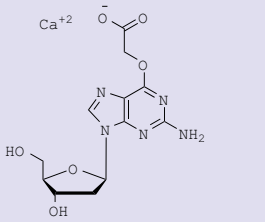
CAS No. 789-61-7

Catalog# DN-1269

Pricing
$45.00 / 50 mg
$75.00 / 100 mg
$210.00 / 250 mg

Purity: 98% +

O^6-(Carboxymethyl)-2′-deoxyguanosine (Calcium Salt)



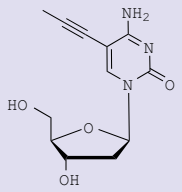
$C_{12}H_{14}N_5O_6^-$ (Free carboxyl
Mol. Wt.: 324.27

Catalog# DN-2019

Pricing
$ 80.00 / 25 mg
$275.00 / 100 mg
$690.00 / 250 mg

Purity: 98% +

5-Propynyl-2′-deoxycytidine



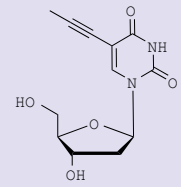
$C_{12}H_{15}N_3O_4$
Mol. Wt. 265.27

Catalog# DN-1541

Pricing
$115.00 / 10 mg
$225.00 / 25 mg
$380.00 / 100 mg

Purity: 98% +

5-Propynyl-2′-deoxyuridine



$C_{12}H_{14}N_2O_5$
Mol. Wt.: 266.2

CAS No. 84558-94-1

Catalog# DN-1846

Pricing
$ 75.00 / 10 mg
$160.00 / 25 mg
$300.00 / 100 mg

Purity: 98% +

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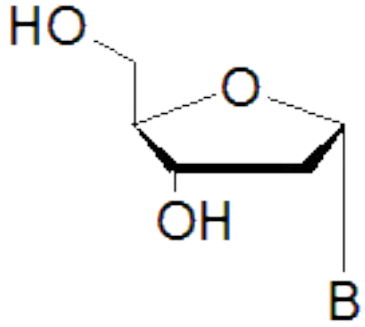
Modified Deoxy Nucleosides

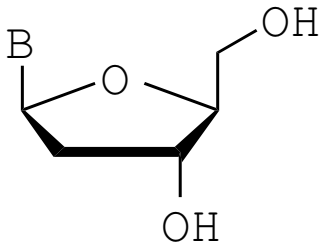


2′-Deoxy-α-Nucleosides

B	Catalog#
A	DN-6351
C	DN-6352
G	DN-6353
T	DN-6354

Catalog#	Product Name	100mg	500mg	1g
DN-6351	α-D-2'-Deoxyadenosine *M.W. 251.24*	$80.00	$360.00	$645.00
DN-6352	α-D-2'-Deoxycytidine *M.W. 227.22*	$80.00	$360.00	$645.00
DN-6353	α-D-2'-Deoxyguanosine *M.W. 267.24*	$80.00	$360.00	$645.00
DN-6354	α-D-Thymidine *M.W. 242.23*	$80.00	$360.00	$645.00

Purity: All the above produced have a purity of 98% +

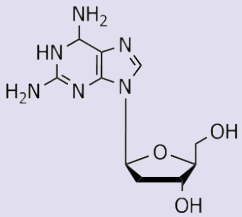


2′-Deoxy-β-L-Nucleosides

B	Catalog#
A	DN-8231
C	DN-8232
G	DN-8233
T	DN-8234
U	DN-8235

Catalog#	Product Name	100mg	500mg	1g
DN-8231	β-L-2'-Deoxyadenosine *M.W. 251.24*	$55.00	$195.00	$325.00
DN-8232	β-L-2'-Deoxycytidine *M.W. 227.22*	$55.00	$195.00	$325.00
DN-8233	β-L-2'-Deoxyguanosine *M.W. 267.24*	$55.00	$195.00	$325.00
DN-8234	β-L-Thymidine *M.W. 242.23*	$55.00	$195.00	$325.00
DN-8235	β-L-2'-Deoxyuridine *M.W. 228.20*	$55.00	$195.00	$325.00

2′-Deoxy-2-Amino-β-L-adenosine



$C_{10}H_{16}N_6O_3$
Mol. Wt.: 268.27

Catalog#

DN-8331

Pricing

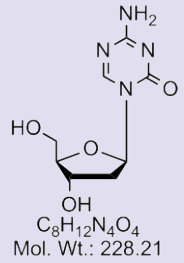
$75.00 / 100 mg
$300.00 / 500 mg
$525.00 / 1 g

Purity: 98% +

Modified Deoxy Nucleosides

5-Aza-2′-deoxycytidine
CAS No. 2353-33-5

(4-Amino-1-(2′-deoxy-ß-D-ribofuranosyl)-1,3,5-triazin-2(1*H*)-one



$C_8H_{12}N_4O_4$
Mol. Wt.: 228.21

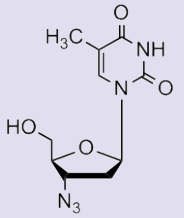
Catalog# DN-1771

Pricing
$42.00 / 10 mg
$154.00 / 50 mg
$264.00 / 100 mg

Purity: 98% +

3′-Azido-3′-deoxythymidine; Azidothymidine (AZT)
Zidovudine; Retrovir

CAS No. 30516-87-1



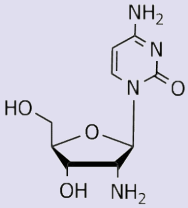
$C_{10}H_{13}N_5O_4$
Mol. Wt.: 267.24

Catalog# DN-1774

Pricing
$32.00 / 100 mg
$260.00 / 1 g

Purity: 98% +

2′-Amino-2′-deoxycytidine
CAS No. 26889-42-9



$C_9H_{14}N_4O_4$
Mol. Wt.: 242.23

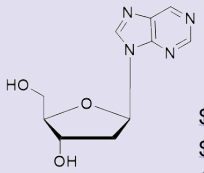
Catalog# DN-1265

Pricing
$42.00 / 10 mg
$154.00 / 50 mg
$264.00 / 100 mg

Purity: 98% +

2′-Deoxynebularine
CAS No. 4546-68-3

(2′-deoxypurine-riboside)

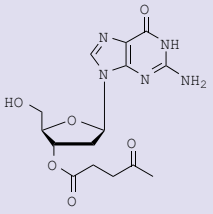


Catalog# DN-1266

Pricing
$45.00 / 50 mg
$75.00 / 100 mg
$210.00 / 250 mg

Purity: 98% +

3′-O-Levulinyl-2′-deoxyguanosine



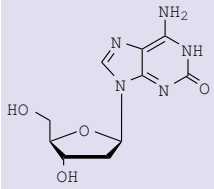
$C_{15}H_{19}N_5O_6$
Mol. Wt.: 365.34

Catalog# DN-1267

Pricing
$45.00 / 50 mg
$75.00 / 100 mg
$210.00 / 250 mg

Purity: 98% +

2′-deoxy-isoguanosine



$C_{10}H_{13}N_5O_4$
Mol. Wt.: 267.24

Catalog# DN-1268

Pricing
$45.00 / 10 mg
$126.00 / 50 mg
$206.00 / 100 mg

Purity: 98% +

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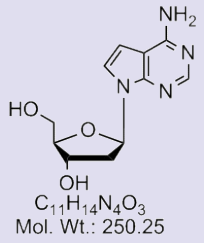
7-Deaza Deoxy Nucleosides

7-Deaza-2′-deoxyadenosine; 2′-Deoxytubercidin



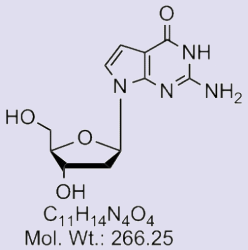
$C_{11}H_{14}N_4O_3$
Mol. Wt.: 250.25
CAS No. 60129-59-1

Catalog# DN-1143

Pricing
$122.00 / 100 mg
$360.00 / 500 mg
$640.00 / 1 g

Purity: 98% +

7-Deaza-2′-deoxyguanosine



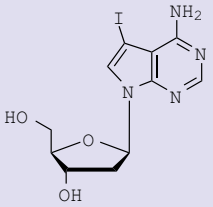
$C_{11}H_{14}N_4O_4$
Mol. Wt.: 266.25
CAS No. 86392-75-8

Catalog# DN-4567

Pricing
$180.00 / 100 mg
$442.00 / 500 mg
$818.00 / 1 g

Purity: 98% +

7-Deaza-7-iodo-2′-deoxyadenosine;
(7-Iodo-2′-Deoxytubercidin)



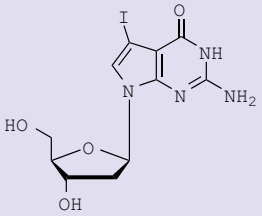
$C_{11}H_{13}IN_4O_3$
Mol. Wt.: 376.15
CAS No.166247-63-8

Catalog# DN-2561

Pricing
$75.00 / 10 mg
$160.00 / 25 mg
$342.00 / 100 mg

Purity: 98% +

7-Deaza-7-Iodo-2′-deoxyguanosine



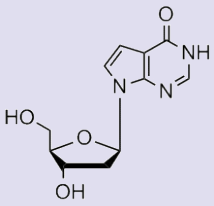
$C_{11}H_{13}IN_4O_4$
Mol. Wt.: 392.15
CAS No.172163-62-1

Catalog# DN-2563

Pricing
$75.00 / 10 mg
$160.00 / 25 mg
$386.00 / 100 mg

Purity: 98% +

7-Deaza-2′-deoxyinosine



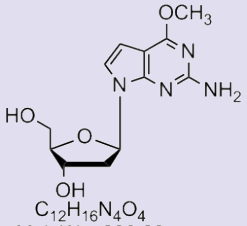
$C_{11}H_{13}N_3O_4$
Mol. Wt.: 251.24
CAS No. 97224-58-3

Catalog# DN-1145

Pricing
$180.00 / 100 mg
$442.00 / 500 mg
$818.00 / 1 g

Purity: 98% +

7-Deaza-O^6-methyl-2′-deoxyguanosine



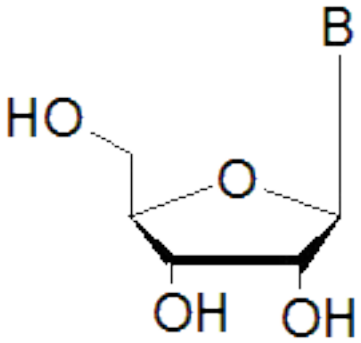
$C_{12}H_{16}N_4O_4$
Mol. Wt.: 280.28

Catalog# DN-1147

Pricing
$165.00 / 100 mg
$388.00 / 500 mg
$710.00 / 1 g

Purity: 98% +

Unprotected Nucleosides



Ribo Nucleosides

B	Catalog#	CAS No.
A	RP-1183	58-61-7
C	RP-1184	65-46-3
G	RP-1185	
U	RP-1186	58-96-8
I	RP-1187	58-63-9

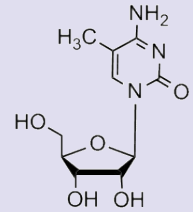
Catalog#	Product Name	1g	5g	100g	1kg
RP-1183	Adenosine *M.W. 267.25*	$4.00	$12.00	$96.00	$700.00
RP-1184	Cytidine *M.W. 243.22*	$4.00	$12.00	$96.00	$700.00
RP-1185	Guanosine *M.W. 283.24*	$4.00	$12.00	$96.00	$700.00
RP-1186	Uridine *M.W. 244.20*	$4.00	$12.00	$96.00	$700.00
RP-1187	Inosine *M.W. 268.23*	$4.00	$12.00	$96.00	$700.00

Purity: All the above produced have a purity of 98% +

Modified Ribo Nucleosides

5-Methyl-cytidine

CAS No. 2140-61-6



$C_{10}H_{15}N_3O_5$
Mol. Wt.: 257.24

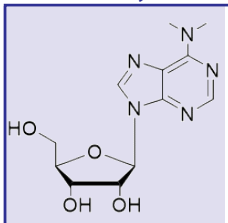
Catalog# RP-1832

Pricing
$70.00 / 1 g
$260.00 / 5 g

Purity: 98% +

N,N-Dimethyl-adenosine

CAS No. 2620-62-4



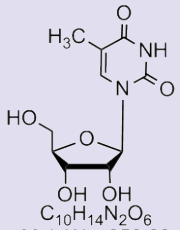
Catalog# RP-2017

Pricing
$16.00 / 25 mg
$48.00 / 100 mg
$250.00 / 1 g

Purity: 98% +

ribothymidine

CAS No.1463-10-1



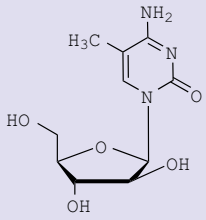
$C_{10}H_{14}N_2O_6$
Mol. Wt.: 258.23

Catalog# RP-1188

Pricing
$70.00 / 1 g
$260.00 / 5 g

Purity: 98% +

Ara-5-methyl-cytidine



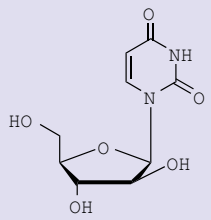
$C_{10}H_{15}N_3O_5$
Mol. Wt.: 257.2

Catalog# RP-1835

Pricing
$16.00 / 25 mg
$48.00 / 100 mg
$250.00 / 1 g

Purity: 98% +

Uridine-arabinose



$C_9H_{12}N_2O_6$
Mol. Wt.: 244.2

Catalog# RP-2325

Pricing
$16.00 / 25 mg
$48.00 / 100 mg
$250.00 / 1 g

Purity: 98% +

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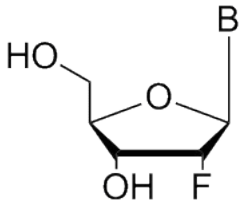
Modified Ribo Nucleosides

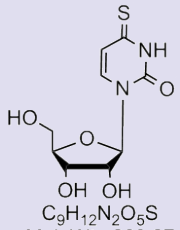


2'-Deoxy-2'-Fluoro Nucleosides

B	Catalog#
A	RP-1220
C	RP-1218
G	RP-1219
U	RP-1217

Catalog#	Product Name	500mg	1g	5g	10g
RP-1220	2'-Fluoro-2'-deoxyadenosine *M.W. 269.23*	$48.00	$88.00	$240.0	$405.00
RP-1218	2'-Fluoro-2'-deoxycytidine *M.W. 245.21*	$48.00	$88.00	$240.0	$405.00
RP-1219	2'-Fluoro-2'-deoxyguanosine *M.W. 285.23*	$48.00	$88.00	$240.0	$405.00
RP-1217	2'-Fluoro-2'-deoxyuridine *M.W. 246.19*	$42.00	$76.00	$220.0	$375.00

4-Thio-uridine



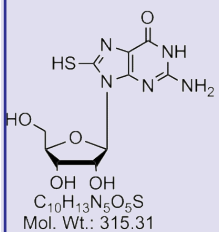
$C_9H_{12}N_2O_5S$
Mol. Wt.: 260.27
CAS No. 13957-31-8

Catalog# RP-2304

Pricing
$110.00 / 100 mg
$220.00 / 250 mg
$750.00 / 1 g

Purity: 98% +

8-Thio-guanosine



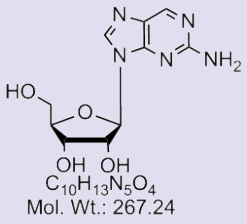
$C_{10}H_{13}N_5O_5S$
Mol. Wt.: 315.31
CAS No. 26001-38-7

Catalog# RP-1190

Pricing
$125.00 / 100mg
$280.00 / 250 mg
$1000.00 / 1 g

Purity: 98% +

2-Amino-purine-riboside



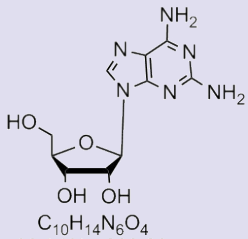
$C_{10}H_{13}N_5O_4$
Mol. Wt.: 267.24
CAS No. 4546-54-7

Catalog# RP-8335

Pricing
$48.00 / 1 g
$225.00 / 5 g
$1,010.00 / 25 g

Purity: 98% +

2,6-Diaminopurine-riboside



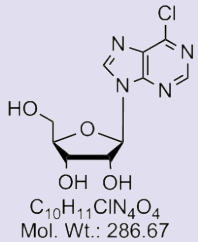
$C_{10}H_{14}N_6O_4$
Mol. Wt.: 282.26
CAS No. 2096-10-8

Catalog# RP-8334

Pricing
$28.00 / 1 g
$66.00 / 5 g
$224.00 / 25 g

Purity: 98% +

6-Chloro-inosine; 6-Chloropurine-riboside



$C_{10}H_{11}ClN_4O_4$
Mol. Wt.: 286.67
CAS No. 5399-87-1

Catalog# RP-6649

Pricing
$48.00 / 1 g
$225.00 / 5 g
$1,010.00 / 25g

Purity: 98% +

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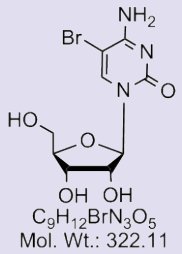
Modified Ribo Nucleosides

5-Bromo-cytidine



$C_9H_{12}BrN_3O_5$
Mol. Wt.: 322.11

CAS No. 17676-66-3

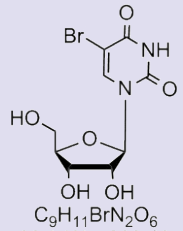
Catalog# RP-1215

Pricing

$12.00 / 100 mg
$24.00 /250 mg
$86.00 / 1 g
$380.00 / 5g

Purity: 98% +

5-Bromo-uridine



$C_9H_{11}BrN_2O_6$
Mol. Wt.: 323.10

CAS No. 957-75-5

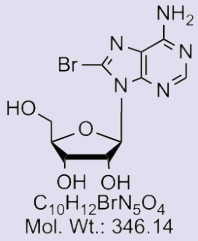
Catalog# RP-1192

Pricing

$10.00 / 100 mg
$20.00 /250 mg
$64.00 / 1 g
$256.00 / 5g

Purity: 98% +

8-Bromo-adenosine



$C_{10}H_{12}BrN_5O_4$
Mol. Wt.: 346.14

CAS No. 2946-39-6

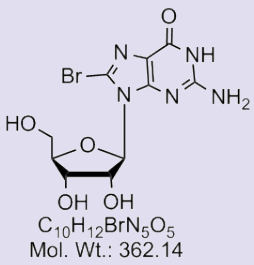
Catalog# RP-1214

Pricing

$26.00 / 100 mg
$58.00 /250 mg
$105.00 / 1 g
$426.00 / 5g

Purity: 98% +

8-Bromo-guanosine



$C_{10}H_{12}BrN_5O_5$
Mol. Wt.: 362.14

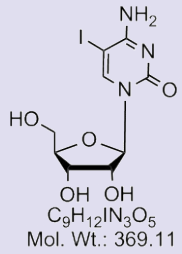
CAS No. 4016-63-1

Catalog# RP-1216

Pricing

$26.00 / 100 mg
$58.00 /250 mg
$105.00 / 1 g
$426.00 / 5g

5-Iodo-cytidine



$C_9H_{12}IN_3O_5$
Mol. Wt.: 369.11

CAS No. 1147-23-5

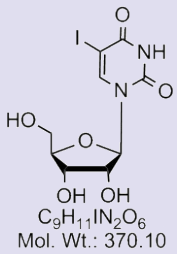
Catalog# RP-1221

Pricing

$43.00 / 100 mg
$96.00 /250 mg
$348.00 / 1 g
$1,390.00 / 5g

Purity: 98% +

5-Iodo-uridine



$C_9H_{11}IN_2O_6$
Mol. Wt.: 370.10

CAS No. 1024-99-3

Catalog# RP-1089

Pricing

$20.00 / 100 mg
$40.00 /250 mg
$120.00 / 1 g
$540.00 / 5g

Purity: 98% +

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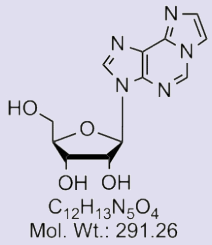
Modified Ribo Nucleosides

Etheno-adenosine

CAS No. 39007-51-7



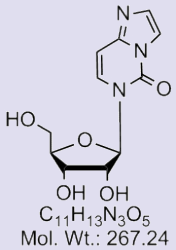
$C_{12}H_{13}N_5O_4$
Mol. Wt.: 291.26

Catalog# RP-2310

Pricing
$38.00 / 25 mg
$125.00 / 100 mg

Purity: 98% +

Etheno-cytidine



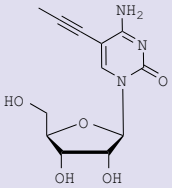
$C_{11}H_{13}N_3O_5$
Mol. Wt.: 267.24

Catalog# RP-2311

Pricing
$34.00 / 25 mg
$105.00 / 100 mg

Purity: 98% +

5-Propynyl-cytidine



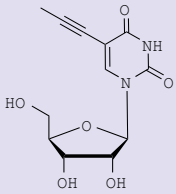
$C_{12}H_{15}N_3O_5$
Mol. Wt.: 281.

Catalog# RP-1546

Pricing
$150.00 / 10 mg
$360.00 / 25 mg

Purity: 98% +

5-Propynyl-uridine



$C_{12}H_{14}N_2O_6$
Mol. Wt: 282.2

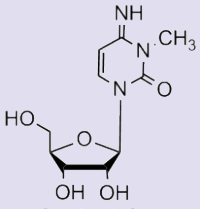
Catalog# RP-1842

Pricing
$162.00 / 100 mg
$720.00 / 1 g

Purity: 98% +

N^3-Methyl-cytidine

CAS No. 2140-64-9



$C_{10}H_{15}N_3O_5$
Mol. Wt.: 257.24

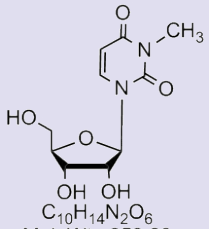
Catalog# RP-2317

Pricing
$115.00 / 25 mg
$380.00 / 100 mg

Purity: 98% +

N^3-Methyl-uridine

CAS No. 2140-69-4



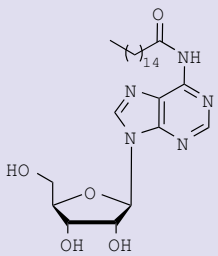
$C_{10}H_{14}N_2O_6$
Mol. Wt.: 258.23

Catalog# RP-1034

Pricing
$65.00 / 25 mg
$180.00 / 100 mg

Purity: 98% +

N^6-Palmitoyl-adenosine



$C_{26}H_{43}N_5O_5$
Mol. Wt.: 505.65

Catalog# RP-1041

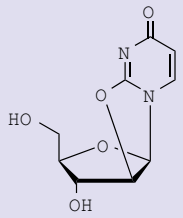
Pricing
$350.00 / 1 g
$748.00 / 5 g

Purity: 98% +

Modified Ribo Nucleosides

2,2′-Anhydro-uridine

(*β*-D-2,2′-*O*-cyclouridine)



$C_9H_{10}N_2O_5$
Mol. Wt.: 226

Catalog#

RP-4807

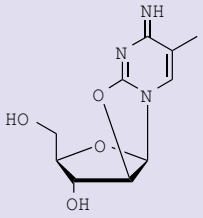
Pricing

$30.00 / 1 g
$125.00 / 5 g

Purity: 98% +

CAS No. 3736-77-4

2,2′-Anhydro-5-methyl-cytidine



$C_{10}H_{13}N_3O_4$
Mol. Wt.: 239.

Catalog#

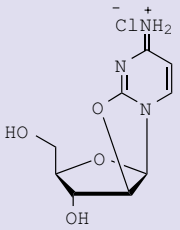
RP-4808

Pricing

$50.00 / 1 g
$205.00 / 5 g

Purity: 98% +

2,2′-Anhydro-cytidine.HCl; Ancitabine hydrochloride



$C_9H_{12}ClN_3O_4$
Mol. Wt.: 261.

Catalog#

RP-3765

Pricing

$40.00 / 1 g
$172.00 / 5 g

Purity: 98% +

CAS No. 10212-25-6

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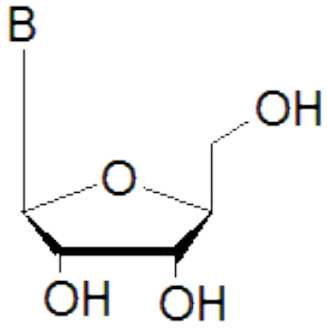


β-L Ribo Nucleosides

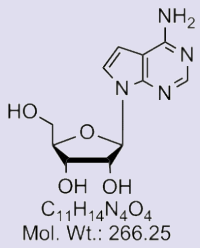
B	Catalog#
A	RP-9031
C	RP-9032
G	RP-9033
U	RP-9034
T	RP-9035
I	RP-9036

Catalog#	Product Name	100mg	500mg	1g	5g
RP-9031	β-L-Adenosine *M.W. 267.24*	$65.00	$148.00	$285.00	$1,160.00
RP-9032	β-L-Cytidine *M.W. 243.22*	$65.00	$148.00	$285.00	$1,160.00
RP-9033	β-L-Guanosine *M.W. 283.24*	$78.00	$152.00	$326.00	$1,467.00
RP-9034	β-L-Uridine *M.W. 244.20*	$65.00	$148.00	$285.00	$1,160.00
RP-9035	β-L-ribo Thymidine *M.W. 258.23*	$75.00	$152.00	$310.00	$1,395.00
RP-9036	β-L-Inosine *M.W. 268.23*	$78.00	$152.00	$326.00	$1,467.00

7-Deaza Ribo Nucleosides

7-Deaza-adenosine; Tubercidin

CAS No. 69-33-0



$C_{11}H_{14}N_4O_4$
Mol. Wt.: 266.25

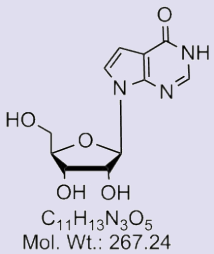
Catalog# RP-2312

Pricing
$132.00 / 100 mg
$260.00 / 250 mg
$830.00 / 1 g

Purity: 98% +

7-Deaza-inosine

CAS No. 2862-16-0



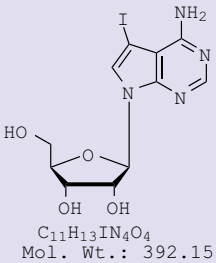
$C_{11}H_{13}N_3O_5$
Mol. Wt.: 267.24

Catalog# RP-2314

Pricing
$175.00 / 100 mg
$330.00 / 250 mg
$804.00 / 1 g

Purity: 98% +

7-Deaza-7-iodo-adenosine; 7-Iodo-tubercidin



$C_{11}H_{13}IN_4O_4$
Mol. Wt.: 392.15

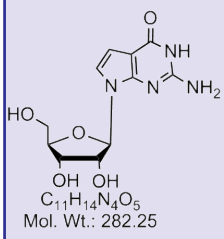
Catalog# RP-2316

Pricing
$175.00 / 100 mg
$350.00 / 250 mg
$1,120.00 / 1 g

Purity: 98% +

7-Deaza-guanosine

CAS No. 62160-23-0



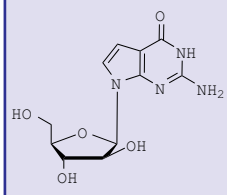
$C_{11}H_{14}N_4O_5$
Mol. Wt.: 282.25

Catalog# RP-2313

Pricing
$112.00 / 100 mg
$225.00 / 250 mg
$720.00/ 1 g

Purity: 98% +

Ara-7-Deaza-guanosine



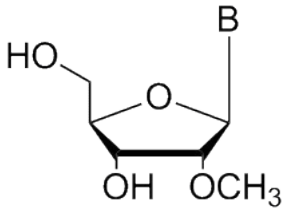
$C_{11}H_{14}N_4O_5$
Mol. Wt.: 282.25

Catalog# RP-4311

Pricing
$175.00 / 100 mg
$330.00 / 250 mg
$804.00 / 1 g

Purity: 98% +

2′-*O*-Methyl Ribo Nucleosides



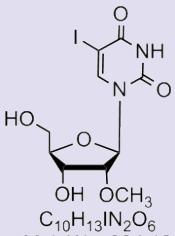
2′-*O*-Methyl Ribo Nucleosides

B	Catalog#	CAS No.
A	RP-1901	2140-79-6
C	RP-1902	2140-72-9
G	RP-1903	2140-71-8
U	RP-1904	2140-76-3
I	RP-1906	3881-21-8
T	RP-1908	

Catalog#	Product Name	100mg	500mg	1g	5g	10g
RP-1901	2′-*O*-Methyl-adenosine *M.W. 281.27*	$38.00	$53.00	$95.00	$381.00	$665.00
RP-1902	2′-*O*-Methyl-cytidine *M.W. 257.24*	$38.00	$53.00	$95.00	$381.00	$665.00
RP-1903	2′-*O*-Methyl-guanosine *M.W. 297.27*	$38.00	$53.00	$95.00	$381.00	$665.00
RP-1904	2′-*O*-Methyl-uridine *M.W. 258.23*	$20.00	$30.00	$55.00	$220.00	$400.00
RP-1906	2′-*O*-Methyl-inosine *M.W. 282.25*	$48.00	$190.00	$300.00	$1,050.00	$1,470.00
RP-1908	2′-*O*-Methyl-thymidine *M.W. 272.25*	$42.00	$165.00	$260.00	$1,005.00	$1,400.00

2′-*O*-Methyl-5-iodo-uridine

CAS No. 34218-84-3



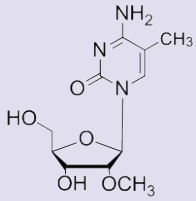
$C_{10}H_{13}IN_2O_6$
Mol. Wt.: 384.12

Catalog# RP-1905

Pricing
$112.00 / 100 mg
$725.00 / 1 g

Purity: 98% +

2′-*O*-Methyl-5-methyl-cytidine



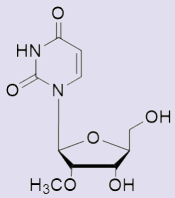
$C_{11}H_{17}N_3O_5$
Mol. Wt.: 271.27

Catalog# RP-1907

Pricing
$168.00 / 100 mg
$1345.00 / 1 g

Purity: 98% +

2′-*O*-Methyl-L-uridine

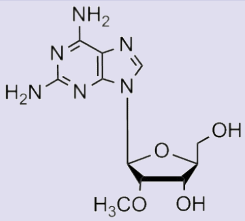


Catalog# RP-1909

Pricing
$112.00 / 100 mg
$725.00 / 1 g

Purity: 98% +

β-L-2′-*O*-Methyl-2-amino-adenosine



$C_{11}H_{16}N_6O_4$
Mol. Wt.: 296.28

Catalog# RP-3902

Pricing
$112.00 / 100 mg
$725.00 / 1 g

Purity: 98% +

Note: For protected base please refer to page 160

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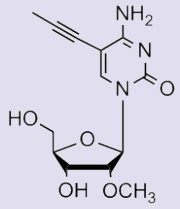
2′-*O*-Methyl Ribo Nucleosides

2′-O-Methyl-5-propynyl-cytidine



$C_{13}H_{17}N_3O_5$
Mol. Wt.: 295.29

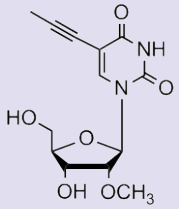
Catalog# RP-1548

Pricing

$210.00 / 10 mg
$1,365.00 / 100 mg

Purity: 98% +

2′-O-Methyl-5-propynyl-uridine



$C_{13}H_{16}N_2O_6$
Mol. Wt.: 296.28

Catalog# RP-1856

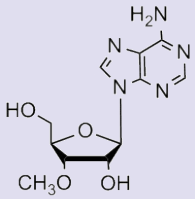
Pricing

$108.00 / 10 mg
$750.00 / 100 mg

Purity: 98% +

3′-O-Methyl Ribo Nucleosides

3′-O-Methyl-adenosine



$C_{11}H_{15}N_5O_4$
Mol. Wt.: 281.27

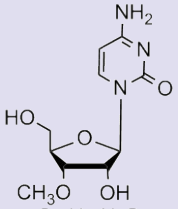
Catalog# RP-2911

Pricing

$50.00 / 10 mg
$350.00 / 100 mg

Purity: 98% +

3′-O-Methyl-cytidine



$C_{10}H_{15}N_3O_5$
Mol. Wt.: 257.24

Catalog# RP-2912

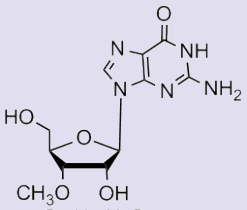
Pricing

$44.00 / 10 mg
$305.00 / 100 mg

Purity: 98% +

3′-O-Methyl-guanosine

CAS No. 10300-27-3



$C_{11}H_{15}N_5O_5$
Mol. Wt.: 297.27

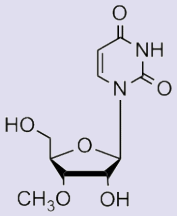
Catalog# RP-2913

Pricing

$55.00 / 10 mg
$360.00 / 100 mg

Purity: 98% +

3′-O-Methyl-uridine



$C_{10}H_{14}N_2O_6$
Mol. Wt.: 258.23

Catalog# RP-2914

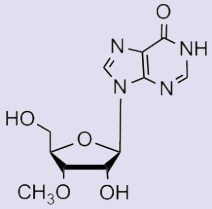
Pricing

$32.00 / 10 mg
$250.00 / 100 mg

Purity: 98% +

3′-O-Methyl-inosine

CAS No. 75479-64-0



$C_{11}H_{14}N_4O_5$
Mol. Wt.: 282.25

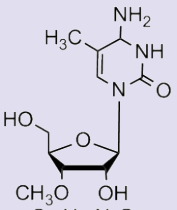
Catalog# RP-2915

Pricing

$60.00 / 10 mg
$420.00 / 100 mg

Purity: 98% +

3′-O-Methyl-5-methyl-cytidine



$C_{11}H_{19}N_3O_5$
Mol. Wt.: 273.29

Catalog# RP-2916

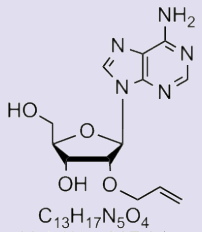
Pricing

$70.00 / 10 mg
$555.00 / 100 mg

Purity: 98% +

2′-*O*-Allyl Ribo Nucleosides

2′-*O*-Allyl-adenosine



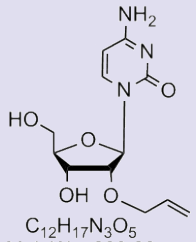
$C_{13}H_{17}N_5O_4$
Mol. Wt.: 307.31

Catalog# RP-3511

Pricing
$44.00 / 10 mg
$308.00 / 100 mg

Purity: 98% +

2′-*O*-Allyl-cytidine



$C_{12}H_{17}N_3O_5$
Mol. Wt.: 283.28

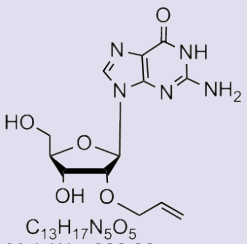
Catalog# RP-3512

Pricing
$44.00 / 10 mg
$308.00 / 100 mg

Purity: 98% +

2′-*O*-Allyl-guanosine

CAS No. 133766-28-6



$C_{13}H_{17}N_5O_5$
Mol. Wt.: 323.30

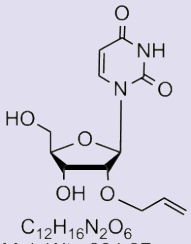
Catalog# RP-3513

Pricing
$44.00 / 10 mg
$308.00 / 100 mg

Purity: 98% +

2′-*O*-Allyl-uridine

CAS No. 133766-24-2



$C_{12}H_{16}N_2O_6$
Mol. Wt.: 284.27

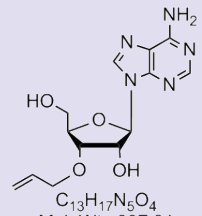
Catalog# RP-3514

Pricing
$38.00 / 10 mg
$266.00 / 100 mg

Purity: 98% +

3′-*O*-Allyl Ribo Nucleosides

3′-*O*-Allyl-adenosine



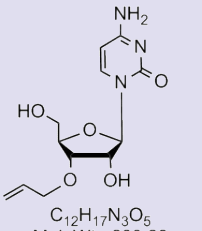
$C_{13}H_{17}N_5O_4$
Mol. Wt.: 307.31

Catalog# RP-3111

Pricing
$48.00 / 10 mg
$336.00 / 100 mg

Purity: 98% +

3′-*O*-Allyl-cytidine



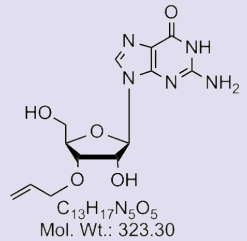
$C_{12}H_{17}N_3O_5$
Mol. Wt.: 283.28

Catalog# RP-3112

Pricing
$46.00 / 10 mg
$322.00 / 100 mg

Purity: 98% +

3′-*O*-Allyl-guanosine



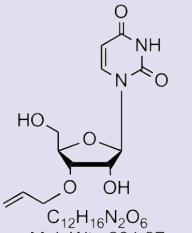
$C_{13}H_{17}N_5O_5$
Mol. Wt.: 323.30

Catalog# RP-3113

Pricing
$52.00 / 10 mg
$364.00 / 100 mg

Purity: 98% +

3′-*O*-Allyl-uridine



$C_{12}H_{16}N_2O_6$
Mol. Wt.: 284.27

Catalog# RP-3114

Pricing
$46.00 / 10 mg
$322.00 / 100 mg

Purity: 98% +

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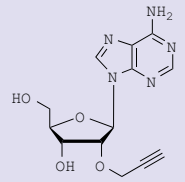
2′-O-Propargyl Ribo Nucleosides

2′-O-Propargyl-adenosine

CAS No. 151390-97-5



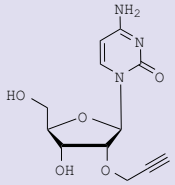
$C_{13}H_{15}N_5O_4$
Mol. Wt: 305.29

Catalog# RP-3401

Pricing
$60.00 / 10 mg
$420.00 / 100 mg

Purity: 98% +

2′-O-Propargyl-cytidine



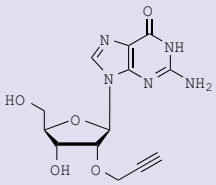
$C_{12}H_{15}N_3O_5$
Mol. Wt.: 281.2

Catalog# RP-3402

Pricing
$60.00 / 10 mg
$420.00 / 100 mg

Purity: 98% +

2′-O-Propargyl-guanosine



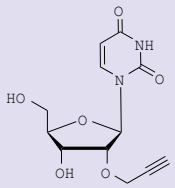
$C_{13}H_{15}N_5O_5$
Mol. Wt: 321.29

Catalog# RP-3403

Pricing
$60.00 / 10 mg
$420.00 / 100 mg

Purity: 98% +

2′-O-Propargyl-uridine



$C_{12}H_{14}N_2O_6$
Mol. Wt.: 282.25

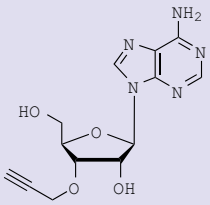
Catalog# RP-3404

Pricing
$50.00 / 10 mg
$350.00 / 100 mg

Purity: 98% +

3′-O-Propargyl Ribo Nucleosides

3′-O-Propargyl-adenosine



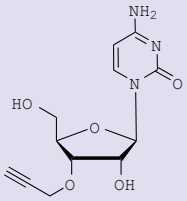
$C_{13}H_{15}N_5O_4$
Mol. Wt: 305.29

Catalog# RP-3301

Pricing
$48.00 / 10 mg
$336.00 / 100 mg

Purity: 98% +

3′-O-Propargyl-cytidine



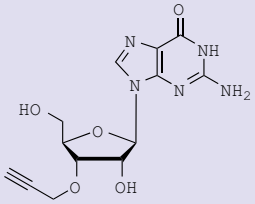
$C_{12}H_{15}N_3O_5$
Mol. Wt.: 281.2

Catalog# RP-3302

Pricing
$46.00 / 10 mg
$322.00 / 100 mg

Purity: 98% +

3′-O-Propargyl-guanosine



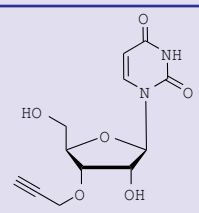
$C_{13}H_{15}N_5O_5$
Mol. Wt: 321.29

Catalog# RP-3303

Pricing
$52.00 / 10 mg
$364.00 / 100 mg

Purity: 98% +

3′-O-Propargyl-uridine



$C_{12}H_{14}N_2O_6$
Mol. Wt.: 282.25

Catalog# RP-3304

Pricing
$46.00 / 10 mg
$322.00 / 100 mg

Purity: 98% +

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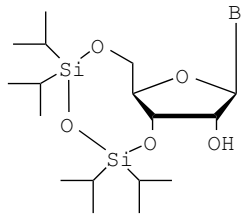
Bis-Silyl Ribo Nucleosides



Bis Silyl ribo Nucleosides

B	Catalog#
A	RP-8871
C	RP-8872
G	RP-8873
U	RP-8874

Catalog#	Product Name	100mg	1g	5g	10g
RP-8871	5',3'-Tetraisopropyl-disiloxane-adenosine *M.W. 509.75*	$38.00	$95.00	$410.00	$740.00
RP-8872	5',3'-Tetraisopropyl-disiloxane-cytidine *M.W. 484.73*	$38.00	$95.00	$410.00	$740.00
RP-8873	5',3'-Tetraisopropyl-disiloxane-guanosine *M.W. 525.75*	$38.00	$95.00	$410.00	$740.00
RP-8874	5',3'-Tetraisopropyl-disiloxane-uridine *M.W. 486.71*	$24.00	$55.00	$220.00	$400.00

For Nucleoside base protected Bis-Silyl ribonucleotides, please refer to page159

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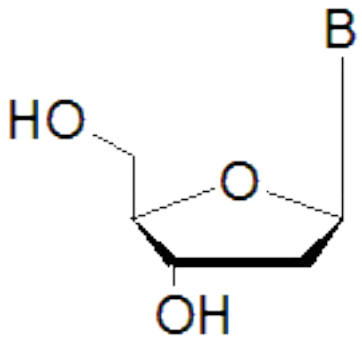
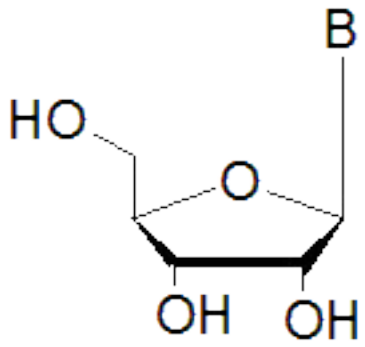


Base Protected (Standard & Labile) deoxy Nucleosides

B	Protection	Catalog#	CAS No.
A	*N*-Bz	PM-1101	305808-19-9
C	*N*-Bz	PM-1102	4836-13-9
G	*N*-*i*Bu	PM-1103	68892-42-2
C	*N*-*i*Bu	PM-1104	
C	*N*-Ac	PM-1105	32909-05-0
A	*N*-PAC	PM-9996	
C	*N*-PAC	PM-9997	
G	*N*-PAC	PM-9998	
A	*N*-DMF	PM-1588	
G	*N*-DMF	PM-3183	

Catalog#	Product Name	1g	5g	10g
PM-1101	2'-Deoxyadenosine (*N*-Bz) *M.W. 355.35*	$12.00	$55.00	$99.00
PM-1102	2'-Deoxycytidine (*N*-Bz) *M.W. 331.32*	$12.00	$55.00	$99.00
PM-1103	2'-Deoxyguanosine (*N*-*i*Bu) *M.W. 337.33*	$15.00	$60.00	$108.00
PM-1104	2'-Deoxycytidine (*N*-*i*Bu) *M.W. 297.31*	$15.00	$70.00	$126.00
PM-1105	2'-Deoxycytidine (*N*-Ac) *M.W. 269.25*	$18.00	$85.00	$153.00
PM-9996	2'-Deoxyadenosine (*N*-PAC) *M.W. 385.37*	$22.00	$82.00	$148.00
PM-9997	2'-Deoxycytidine (*N*-PAC) *M.W. 361.35*	$22.00	$82.00	$148.00
PM-9998	2'-Deoxyguanosine (*N*-PAC) *M.W. 401.37*	$22.00	$82.00	$148.00
PM-1588	2'-Deoxyadenosine (*N*-DMF) *M.W. 306.32*	$15.00	$65.00	$117.00
PM-3183	2'-Deoxyguanosine (*N*-DMF) *M.W. 322.32*	$15.00	$65.00	$117.00



Base Protected (Standard & Labile) Ribo Nucleosides

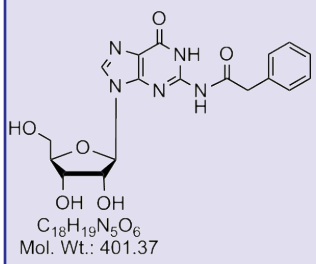
B	Protection	Catalog#	CAS No.
A	*N*-Bz	PM-2101	4546-55-8
C	*N*-Bz	PM-2102	13089-48-0
G	*N*-*i*Bu	PM-2103	64350-24-9
C	*N*-*i*Bu	PM-2105	
C	*N*-Ac	PM-2106	3768-18-1
A	*N*-PAC	PM-6001	
C	*N*-PAC	PM-6002	
G	*N*-PAC	PM-6003	

Catalog#	Productname	1g	5g	10g
PM-2101	Adenosine (*N*-Bz) *M.W. 371.35*	$27.00	$125.00	$200.00
PM-2102	Cytidine (*N*-Bz) *M.W. 347.32*	$27.00	$125.00	$200.00
PM-2103	Guanosine (*N*-*i*Bu) *M.W. 353.33*	$33.00	$130.00	$210.00
PM-2105	Cytidine (*N*-*i*Bu) *M.W. 313.31*	$33.00	$130.00	$210.00
PM-2106	Cytidine (*N*-Ac) *M.W. 285.25*	$37.00	$155.00	$245.00
PM-6001	Adenosine (*N*-PAC) *M.W. 401.37*	$40.00	$180.00	$290.00
PM-6002	Cytidine (*N*-PAC) *M.W. 377.35*	$40.00	$180.00	$290.00
PM-6003	Guanosine (*N*-PAC) *M.W. 417.37*	$40.00	$180.00	$290.00

Purity : All the above products have a purity of 98% +

N-Phenylacetyl Guanosine

CAS No. 132628-16-1

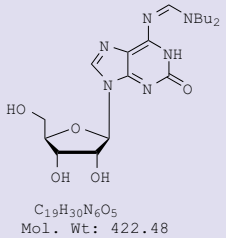


Catalog# PM-6004

Pricing
$40.00 / 1 g
$180.00 / 5 g

Purity: 98% +

N-DBF Isoguanosine

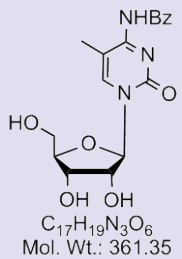


Catalog# PM-2643

Pricing
$23.00 / 10 mg
$165.00 / 100 mg
$310.00 / 250 mg

Purity: 98% +

5-Methyl-*N*-Benzoyl Cytidine



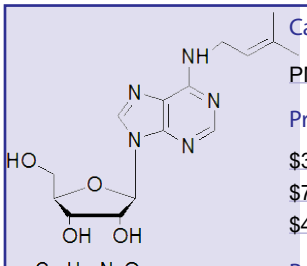
Catalog# PM-4122

Pricing
$32.00 / 25 mg
$75.00 / 100 mg
$455.00 / 1 g

Purity: 98% +

N-Isopentyl Adenosine

CAS No. 7724-76-7



Catalog# PM-6005

Pricing
$32.00 / 25 mg
$75.00 / 100 mg
$455.00 / 1 g

Purity: 98% +

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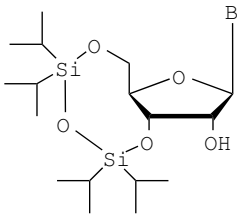
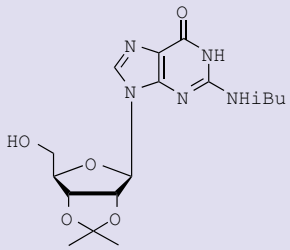
Bis-Silyl ribo Nucleosides with Standard & Labile Base Protection



B	Protection	Catalog#
A	*N*-*i*Bu	PM-1921
A	*N*-PAC	PM-1922
A	*N*-Bz	PM-1928
C	*N*-Ac	PM-1923
C	*N*-*i*Bu	PM-1924
G	*N*-DMF	PM-1925
G	*N*-Ac	PM-1926
G	*N*-*i*Bu	PM-1927

Catalog#	Product Name	100mg	1g	5g	10g
PM-1921	5',3'-Tetraisopropyl-disiloxane-adenosine (*N*-*i*Bu) *M.W.579.84*	$44.00	$98.00	$405.00	$892.00
PM-1922	5',3'-Tetraisopropyl-disiloxane-adenosine (*N*-PAC) *M.W. 643.88*	$44.00	$98.00	$405.00	$892.00
PM-1928	5',3'-Tetraisopropyl-disiloxane-adenosine (*N*-Bz) *M.W. 613.85*	$44.00	$98.00	$405.00	$892.00
PM-1923	5',3'-Tetraisopropyl-disiloxane-cytidine (*N*-Ac) *M.W. 527.76*	$44.00	$98.00	$405.00	$892.00
PM-1924	5',3'-Tetraisopropyl-disiloxane-cytidine (*N*-*i*Bu) *M.W. 555.81*	$44.00	$98.00	$405.00	$892.00
PM-1925	5',3'-Tetraisopropyl-disiloxane-guanosine (*N*-DMF) *M.W. 580.82*	$44.00	$98.00	$405.00	$892.00
PM-1926	5',3'-Tetraisopropyl-disiloxane-guanosine (*N*-Ac) *M.W. 567.78*	$44.00	$98.00	$405.00	$892.00
PM-1927	5',3'-Tetraisopropyl-disiloxane-guanosine (*N*-*i*Bu) *M.W. 595.84*	$44.00	$98.00	$405.00	$892.00

2',3'-Isopropylidene-guanosine (N-iBu)



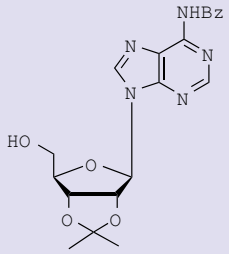
$C_{17}H_{23}N_5O_6$
Mol. Wt.: 393.39

Catalog# RP-4128

Pricing
$48.00 / 5 g
$152.00 / 25 g

Purity: 98% +

2',3'-Isopropylidene-adenosine (N-Bz)



$C_{20}H_{21}N_5O_5$
Mol. Wt.: 411.41

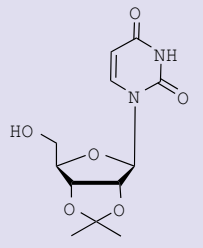
Catalog# RP-4127

Pricing
$48.00 / 5 g
$152.00 / 25 g

Purity: 98% +

2',3'-Isopropylidene-uridine

CAS No. 362-43-6



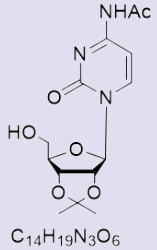
$C_{12}H_{16}N_2O_6$
Mol. Wt.: 284.2

Catalog# RP-4129

Pricing
$48.00 / 5 g
$152.00 / 25 g

Purity: 98% +

2',3'-Isopropylidene-cytidine



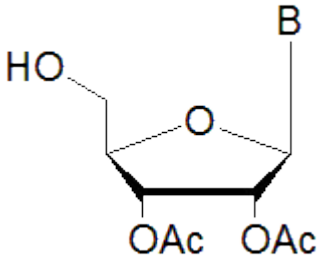
$C_{14}H_{19}N_3O_6$
Mol. Wt. :325.32

Catalog# RP-4126

Pricing
$48.00 / 5 g
$152.00 / 25 g

Purity: 98% +

Protected Ribo Nucleosides

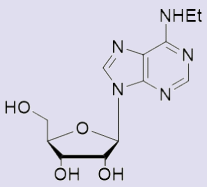


B	Protection	Catalog#
A	*N*-Bz	RP-2278
C	*N*-Bz	RP-2279
C	*N*-Ac	RP-2280
T	N/A	RP-2283
G	*N*-*i*Bu	RP-2282
U	N/A	RP-2249

Catalog#	Product Name	1g	5g	10g
RP-2278	2',3'-*O*-Diacetyl-adenosine (*N*-Bz) *M.W.455.42*	$90.00	$360.00	$575.00
RP-2279	2',3'-*O*-Diacetyl-cytidine (*N*-Bz) *M.W. 431.40*	$90.00	$360.00	$575.00
RP-2280	2',3'-*O*-Diacetyl-cytidine (*N*-Ac) *M.W. 369.33*	$90.00	$360.00	$575.00
RP-2283	2',3'-*O*-Diacetyl-ribothymidine *M.W. 342.30*	$90.00	$360.00	$575.00
RP-2282	2',3'-*O*-Diacetyl-guanosine (*N*-*i*Bu) *M.W. 437.40*	$90.00	$360.00	$575.00
RP-2249	2',3'-*O*-Diacetyl-uridine *M.W. 328.27*	$65.00	$260.00	$410.00

Modified Ribo Nucleosides

N-Ethyl Adenosine



Catalog#

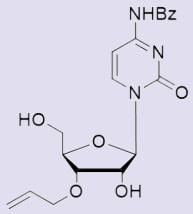
RP-1035

Pricing

$32.00 / 25 mg
$75.00 / 100 mg
$455.00 / 1 g

Purity: 98% +

3'-*O*-Allyl-N-Benzoyl Cytidine



Catalog#

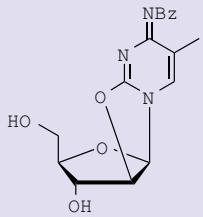
RP-3115

Pricing

$32.00 / 25 mg
$75.00 / 100 mg
$455.00 / 1 g

Purity: 98% +

2,2'-Anhydro-5-Methyl-N-Benzoyl Cytidine



$C_{17}H_{17}N_3O_5$
Mol. Wt: 343.33

Catalog#

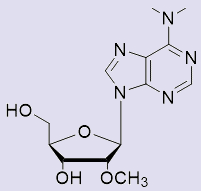
RP-4166

Pricing

$32.00 / 25 mg
$75.00 / 100 mg
$455.00 / 1 g

Purity: 98% +

2'-*O*-Methyl-*N*,*N*'-dimethyl Adenosine



Catalog#

RP-3901

Pricing

$168.00 / 100 mg
$1345.00 / 1 g

Purity: 98% +

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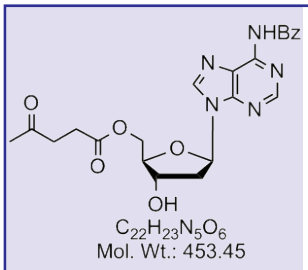
5′-*O*-Levulinyl deoxy Nucleosides

5′-*O*-Levulinyl-2′-deoxyadenosine (*N*-Bz)

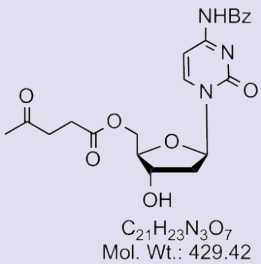


Catalog# DN-6601

Pricing
$40.00 / 1 g
$180.00 / 5 g

Purity: 98% +

5′-*O*-Levulinyl-2′-deoxycytidine (*N*-Bz)

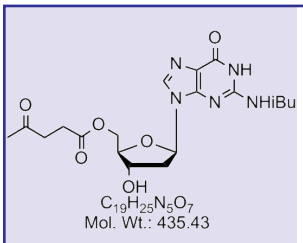


Catalog# DN-6602

Pricing
$40.00 / 1 g
$180.00 / 5 g

Purity: 98% +

5′-*O*-Levulinyl-2′-deoxyguanosine (*N*-iBu)

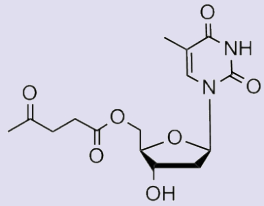


Catalog# DN-6603

Pricing
$40.00 / 1 g
$180.00 / 5 g

Purity: 98% +

5′-*O*-Levulinyl-thymidine



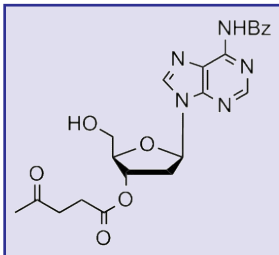
Catalog# DN-6604

Pricing
$35.00 / 1 g
$160.00 / 5 g

Purity: 98% +

3′-*O*-Levulinyl deoxy Nucleosides

3′-*O*-Levulinyl-2′-deoxyadenosine (*N*-Bz)

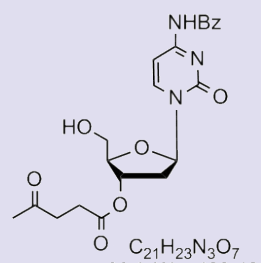


Catalog# PM-6611

Pricing
$100.00 / 1 g
$475.00 / 5 g

Purity: 98% +

3′-*O*-Levulinyl-2′-deoxycytidine (*N*-Bz)

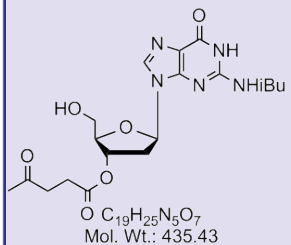


Catalog# PM-6612

Pricing
$100.00 / 1 g
$475.00 / 5 g

Purity: 98% +

3′-*O*-Levulinyl-2′-deoxyguanosine (*N*-iBu)

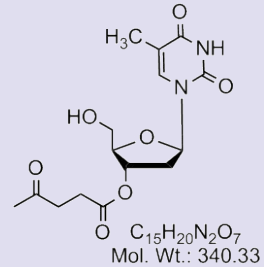


Catalog# PM-6613

Pricing
$100.00 / 1 g
$475.00 / 5 g

Purity: 98% +

3′-*O*-Levulinyl-thymidine



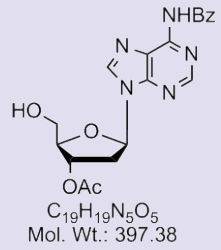
Catalog# PM-6614

Pricing
$90.00 / 1 g
$425.00 / 5 g

Purity: 98% +

3′-O-Acetyl deoxy Nucleosides

3′-*O*-Acetyl-2′-deoxyadenosine (*N*-Bz)



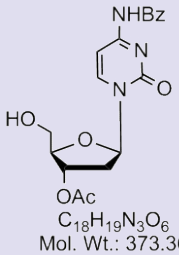
$C_{19}H_{19}N_5O_5$
Mol. Wt.: 397.38

Catalog# PM-6301

Pricing
$90.00 / 1 g
$425.00 / 5 g

Purity: 98% +

3′-*O*-Acetyl-2′-deoxycytidine (*N*-Bz)



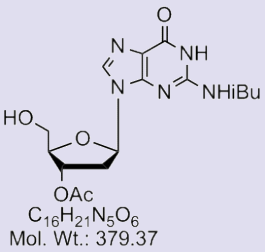
$C_{18}H_{19}N_3O_6$
Mol. Wt.: 373.36

Catalog# PM-6302

Pricing
$90.00 / 1 g
$425.00 / 5 g

Purity: 98% +

3′-*O*-Acetyl-2′-deoxyguanosine (*N*-iBu)



$C_{16}H_{21}N_5O_6$
Mol. Wt.: 379.37

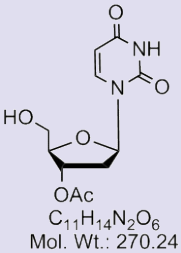
Catalog# PM-6303

Pricing
$90.00 / 1 g
$425.00 / 5 g

Purity: 98% +

3′-*O*-Acetyl-2′-deoxyuridine

CAS No. 23197-88-8



$C_{11}H_{14}N_2O_6$
Mol. Wt.: 270.24

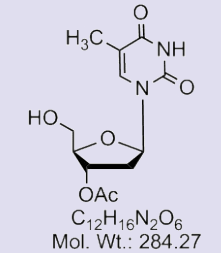
Catalog# PM-6305

Pricing
$45.00 / 1 g
$212.00 / 5 g

Purity: 98% +

3′-*O*-Acetyl-thymidine

CAS No. 21090-30-2



$C_{12}H_{16}N_2O_6$
Mol. Wt.: 284.27

Catalog# PM-6304

Pricing
$45.00 / 1 g
$212.00 / 5 g

Purity: 98% +

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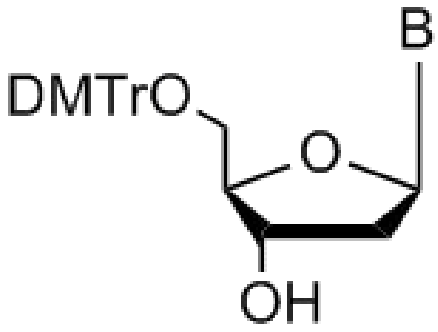
N-protected Nucleosides



DMT Protected and base Protected (Standard & Labile) deoxy Nucleosides

B	Protection	Catalog#	CAS No.
A	*N*-Bz	PM-1109	
C	*N*-Bz	PM-1110	
G	*N*-*i*Bu	PM-1111	
T	N/A	PM-1112	40615-39-2
C	*N*-*i*Bu	PM-1117	
C	*N*-Ac	PM-1118	
A	*N*-Ac	PM-3015	
A	*N*-PAC	PM-3101	
C	*N*-PAC	PM-3102	
G	*N*-PAC	PM-3103	
G	*N*-*t*BPAC	PM-1483	
G	*N*-*i*PrPAC	PM-1484	
I	N/A	PM-1119	
U	N/A	PM-1120	
A	*N*-*t*BPAC	PM-1481	
C	*N*-*t*BPAC	PM-1482	
A	*N*-*i*Bu	PM-1487	
C	*N*-Cyanoethyl	PM-1489	
A	*N*-Fmoc	PM-4321	
C	*N*-Fmoc	PM-4322	
G	*N*-Fmoc	PM-4333	

Catalog#	Product Name	1g	5g	10g	100g
PM-1109	5'-*O*-DMTr-2'-deoxyadenosine (*N*-Bz) *M.W. 657.71*	$18.00	$80.00	$145.00	$1,200.00
PM-1110	5'-*O*-DMTr-2'-deoxycytidine (*N*-Bz) *M.W. 633.69*	$18.00	$80.00	$145.00	$1,200.00
PM-1111	5'-*O*-DMTr-2'-deoxyguanosine (*N*-*i*Bu) *M.W. 639.70*	$18.00	$80.00	$145.00	$1,200.00
PM-1112	5'-*O*-DMTr-thymidine *M.W. 544.60*	$12.00	$52.00	$92.00	$850.00
PM-1117	5'-*O*-DMTr-2'-deoxycytidine (*N*-*i*Bu) *M.W. 599.67*	$18.00	$80.00	$145.00	$1,200.00
PM-1118	5'-*O*-DMTr-2'-deoxycytidine (*N*-Ac) *M.W. 571.82*	$18.00	$80.00	$145.00	$1,200.00
PM-3015	5'-*O*-DMTr-2'-deoxyadenosine (*N*-Ac)*M.W. 595.65*	$25.00	$112.00	$198.00	$1,782.00
PM-3101	5'-*O*-DMTr-2'-deoxyadenosine (*N*-PAC)*M.W. 687.74*	$25.00	$112.00	$198.00	$1,782.00
PM-3102	5'-*O*-DMTr-2'-deoxycytidine (*N*-PAC) *M.W. 663.7*	$25.00	$112.00	$198.00	$1,782.00
PM-3103	5'-*O*-DMTr-2'-deoxyguanosine (*N*-PAC)*M.W. 703.74*	$28.00	$126.00	$224.00	$2,000.00
PM-1483	5'-*O*-DMTr-2'-deoxyguanosine (*N*-*t*BPAC)*M.W. 759.85*	$40.00	$190.00	$342.00	$3,000.00
PM-1484	5'-*O*-DMTr-2'-deoxyguanosine (*N*-*i*PrPAC)*M.W. 745.82*	$40.00	$190.00	$342.00	$3,000.00
PM-1119	5'-*O*-DMTr-2'-deoxyinosine *M.W. 554.59*	$40.00	$190.00	$342.00	$3,000.00
PM-1120	5'-*O*-DMTr-2'-deoxyuridine*M.W. 530.57*	$40.00	$190.00	$342.00	$3,000.00
PM-1481	5'-*O*-DMTr-2'-deoxyadenosine(N^6-*t*BPAC) *M.W. 743.85*	$40.00	$190.00	$342.00	$3,000.00
PM-1482	5'-*O*-DMTr-2'-deoxycytidine (N^4-*t*Butyl PAC) *M.W. 719.82*	$40.00	$190.00	$342.00	$3,000.00
PM-1487	5'-*O*-DMTr-2'-deoxyadenosine (*N*-*i*Bu) *M.W. 623.70*	$40.00	$190.00	$342.00	$3,000.00
PM-1489	5'-*O*-DMTr-2'-deoxycytidine (*N*-CNE*t*) *M.W. 582.65*	$40.00	$190.00	$342.00	$3,000.00
PM-4321	5'-*O*-DMTr-2'-deoxyadenosine (*N*-Fmoc) *M.W. 775.85*	$25.00	$112.00	$198.00	$1,782.00
PM-4322	5'-*O*-DMTr-2'-deoxycytidine (*N*-Fmoc) *M.W. 751.82*	$25.00	$112.00	$198.00	$1,782.00
PM-4333	5'-*O*-DMTr-2'-deoxyguanosine (*N*-Fmoc) *M.W. 791.85*	$25.00	$112.00	$198.00	$1,782.00

Purity: Ultrapure product: > 98.5% + by HPLC

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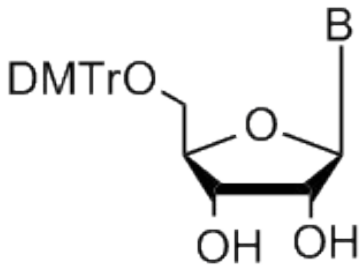

DMT Protected Standard & Labile Ribo Nucleosides

B	Protection	Catalog#	CAS No.
A	*N*-Bz	PM-2109	81246-82-4
C	*N*-Bz	PM-2110	
G	*N*-*i*Bu	PM-2111	
U	N/A	PM-2112	
C	*N*-*i*Bu	PM-2113	
C	*N*-Ac	PM-2114	
A	*N*-PAC	PM-2203	
C	*N*-PAC	PM-2204	
G	*N*-PAC	PM-2205	
T	N/A	PM-2115	
I	N/A	PM-2306	
G	*N*-*i*PrPAC	PM-2209	
G	*N*-Ac	PM-4003	
A	*N*-Fmoc	PM-4366	
C	*N*-Fmoc	PM-4367	
G	*N*-Fmoc	PM-4368	

Catalog#	Product Name	1g	5g	10g	100g
PM-2109	5'-*O*-DMTr-Adenosine (*N*-Bz) *M.W. 673.71*	$33.00	$142.00	$256.00	$2,170.00
PM-2110	5'-*O*-DMTr-Cytidine (*N*-Bz) *M.W. 649.69*	$33.00	$142.00	$256.00	$2,170.00
PM-2111	5'-*O*-DMTr-Guanosine (*N*-*i*Bu) *M.W. 655.70*	$35.00	$148.00	$265.00	$2,250.00
PM-2112	5'-*O*-DMTr-Uridine *M.W. 546.57*	$26.00	$128.00	$230.00	$1,955.00
PM-2113	5'-*O*-DMTr-Cytidine (*N*-*i*Bu) *M.W. 615.67*	$40.00	$142.00	$333.00	$2,830.00
PM-2114	5'-*O*-DMTr-Cytidine (*N*-Ac) *M.W. 587.82*	$42.00	$145.00	$245.00	$2,080.00
PM-2203	5'-*O*-DMTr-Adenosine (*N*-PAC) *M.W. 703.74*	$35.00	$148.00	$245.00	$2,080.00
PM-2204	5'-*O*-DMTr-Cytidine (*N*-PAC) *M.W. 679.72*	$35.00	$148.00	$245.00	$2,080.00
PM-2205	5'-*O*-DMTr-Guanosine (*N*-PAC) *M.W. 719.74*	$35.00	$148.00	$245.00	$2,080.00
PM-2115	5'-*O*-DMTr-riboThymidine *M.W. 560.59*	$35.00	$148.00	$245.00	$2,080.00
PM-2306	5'-*O*-DMTr-Inosine *M.W. 570.59*	$35.00	$148.00	$245.00	$2,080.00
PM-2209	5'-*O*-DMTr-Guanosine (*N*-*i*PrPAC) *M.W. 761.31*	$35.00	$148.00	$245.00	$2,080.00
PM-4003	5'-*O*-DMTr-Guanosine (*N*-Ac) *M.W. 627.64*	$35.00	$148.00	$245.00	$2,080.00
PM-4366	5'-*O*-DMTr-Adenosine (*N*-Fmoc) *M.W. 791.85*	$25.00	$112.00	$198.00	$1,680.00
PM-4367	5'-*O*-DMTr-Cytidine (*N*-Fmoc) *M.W. 767.82*	$25.00	$112.00	$198.00	$1,680.00
PM-4368	5'-*O*-DMTr-Guanosine (*N*-Fmoc) *M.W. 807.85*	$25.00	$112.00	$198.00	$1,680.00

Purity: All the above produced have a purity of 98.5% + by HPLC

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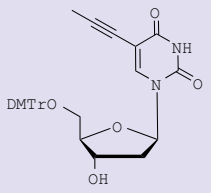
5′-*O*-DMTr-5-propynyl-2′-deoxyuridine



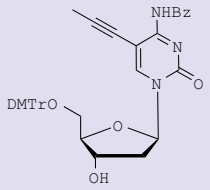
$C_{33}H_{32}N_2O_7$
Mol. Wt.: 568.62

Catalog# PM-1022

Pricing
$165.00 / 100 mg
$800.00 / 1 g

Purity: 98% +

5′-*O*-DMTr-5-propynyl-2′-deoxycytidine (N-Bz)



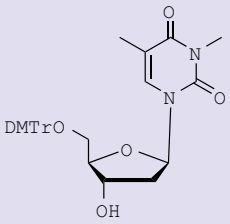
$C_{40}H_{37}N_3O_7$
Mol. Wt.: 671.74

Catalog# PM-1124

Pricing
$110.00 / 100 mg
$905.00 / 1 g

Purity: 98% +

5′-*O*-DMTr-N^3-methyl-thymidine



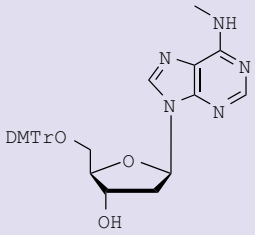
$C_{32}H_{34}N_2O_7$
Mol. Wt: 558.62

Catalog# PM-1591

Pricing
$65.00 / 1 g
$216.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-N^6-methyl-2′-deoxyadenosine



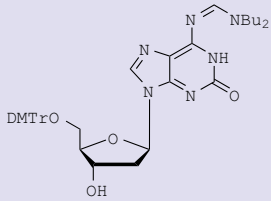
$C_{32}H_{33}N_5O_5$
Mol. Wt.: 567.63

Catalog# PM-1107

Pricing
$45.00 / 1 g
$200.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-2′-deoxy-isoguanosine (N-DBF)



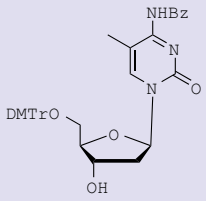
$C_{40}H_{48}N_6O_6$
Mol. Wt.: 708.85

Catalog# PM-1643

Pricing
$425.00 / 1 g

Purity: 98% +

5′-*O*-DMTr-5-methyl-2′-deoxycytidine (N-Bz)



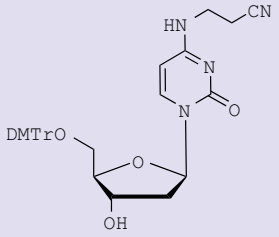
$C_{38}H_{37}N_3O_7$
Mol. Wt.: 647.7

Catalog# PM-1967

Pricing
$45.00 / 1 g
$200.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-2′-deoxycytidine (*N*-Cyanoethyl)



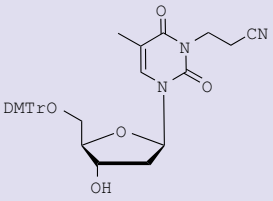
$C_{33}H_{34}N_4O_6$
Mol. Wt.: 582.65

Catalog# PM-1489

Pricing
$65.00 / 1 g
$216.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-N^3-cyanoethyl-thymidine



$C_{34}H_{35}N_3O_7$
Mol. Wt.: 597.66

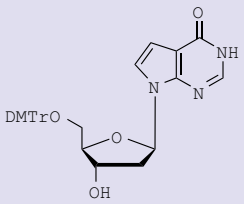
Catalog# PM-1490

Pricing
$65.00 / 1 g
$216.00 / 5 g

Purity: 98% +

DMTr Protected Modified Deoxy Nucleosides

5′-*O*-DMTr-7-Deaza-2′-deoxyinosine



$C_{32}H_{31}N_3O_6$
Mol. Wt.: 553.61

Catalog#

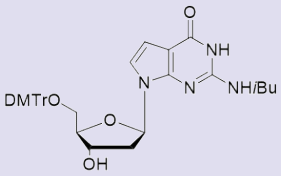
PM-6434

Pricing

$450.00 / 1 g
$1,800.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-7-Deaza-2′-deoxyguanosine (N-iBu)



$C_{36}H_{38}N_4O_7$
Mol.Wt.: 638.72

Catalog#

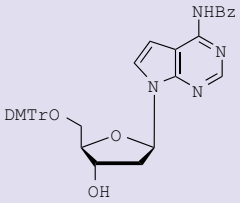
PM-6433

Pricing

$450.00 / 1 g
$1,800.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-7-Deaza-2′-deoxyadenosine (N-Bz)



$C_{39}H_{36}N_4O_6$
Mol. Wt.: 656.73

Catalog#

PM-6431

Pricing

$450.00 / 1 g
$1,800.00 / 5 g

Purity: 98% +

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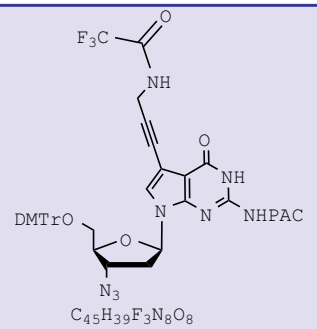
DMTr Protected Modified Deoxy Nucleosides

5′-*O*-DMTr-3′-Azido-7-deaza-7-propargyl-amino-(TFA)-2′-deoxyguanosine



$C_{45}H_{39}F_3N_8O_8$
Mol. Wt.: 876.84

Catalog#

PM-7307

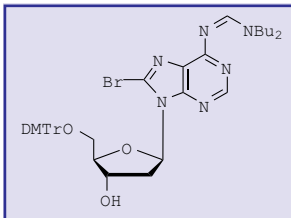
Pricing

$315.00 / 100 µmole

Purity: 98% +

DMTr Protected Modified Deoxy Nucleosides

5′-*O*-DMTr-8-bromo-2′-deoxyadenosine (N-DBF)



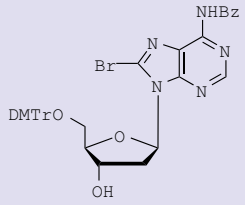
$C_{40}H_{47}BrN_6O_5$
Mol. Wt.: 771.74

Catalog# PM-4791

Pricing
$165.00 / 1 g
$650.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-8-bromo-2′-deoxyadenosine (N-Bz)



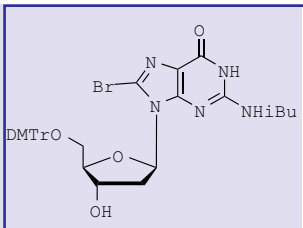
$C_{38}H_{34}BrN_5O_6$
Mol. Wt: 736.61

Catalog# PM-7210

Pricing
$150.00 / 1 g
$600.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-8-bromo-2′-deoxyguanosine (N-iBu)



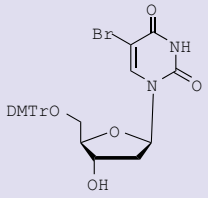
$C_{35}H_{36}BrN_5O_7$
Mol Wt.: 718.59

Catalog# PM-7211

Pricing
$150.00 / 1 g
$600.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-5-bromo-2′-deoxyuridine



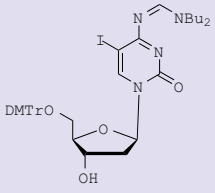
$C_{30}H_{29}BrN_2O_7$
Mol. Wt: 609.4

Catalog# PM-2808

Pricing
$45.00 / 1 g
$186.00 / 5 g

Purity: 98% +

5′-*O*-DMTr-5-iodo-2′-deoxycytidine (N-DBF)



$C_{39}H_{47}IN_4O_6$
Mol. Wt.: 794.72

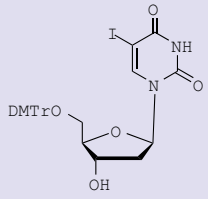
Catalog# PM-1979

Pricing
$115.00 / 100 mg

Purity: 98% +

5′-*O*-DMTr-5-iodo-2′-deoxyuridine

CAS No. 104375-88-4



$C_{30}H_{29}IN_2O_7$
Mol. Wt.: 656.4

Catalog# PM-2864

Pricing
$45.00 / 1 g
$186.00 / 5 g

Purity: 98% +

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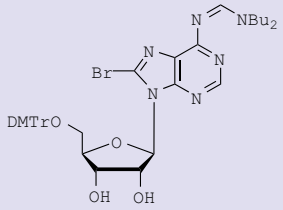
DMTr Protected Modified Ribo

5′-*O*-DMTr-8-bromo-adenosine (N-DBF)



$C_{40}H_{47}BrN_6O_6$
Mol. Wt: 787.74

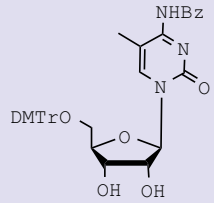
Catalog# PM-1834

Pricing

$160.00 / 1 g

Purity: 98% +

5′-*O*-DMTr-5-methyl-cytidine (N-Bz)



$C_{38}H_{37}N_3O_8$
Mol. Wt.: 663

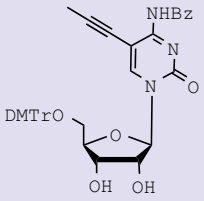
Catalog# PM-2647

Pricing

$134.00 / 1 g

Purity: 98% +

5′-*O*-DMTr-5-propynyl-cytidine (N-Bz)



$C_{40}H_{37}N_3O_8$
Mol. Wt.: 687

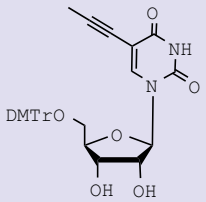
Catalog# PM-1126

Pricing

$115.00 / 100 mg
$910.00 / 1 g

Purity: 98% +

5′-*O*-DMTr-5-propynyl-uridine



$C_{33}H_{32}N_2O_8$
Mol. Wt.: 584

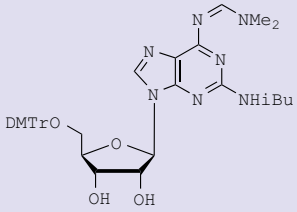
Catalog# PM-1024

Pricing

$180.00 / 100 mg
$1,260.00 / 1 g

Purity: 98% +

5′-*O*-DMTr-2,6-diamino-purine-riboside (N^6-DMF) (N^2-iBu)



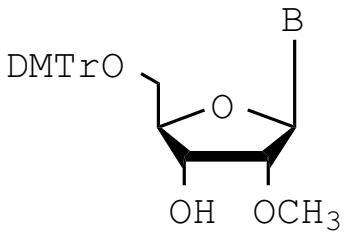
$C_{38}H_{43}N_7O_7$
Mol. Wt: 709.79

Catalog# PM-2476

Pricing

$115.00 / 1 g

Purity: 98% +



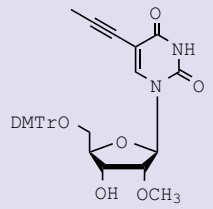
DMTr Protected 2′-O-Methyl Nucleosides

B	Protection	Catalog#
A	*N*-Bz	PM-5731
C	*N*-Bz	PM-5732
G	*N*-*i*Bu	PM-5733
U	N/A	PM-5734
C	*N*-Ac	PM-5735
A	*N*-PAC	PM-3701
C	*N*-PAC	PM-3702
G	*N*-PAC	PM-3703

Catalog#	Productname	500mg	1g	5g
PM-5731	5′-*O*-DMTr-2′-*O*-Methyl-adenosine (*N*-Bz) *M.W.687.74*	$180.00	$340.00	$1,530.00
PM-5732	5′-*O*-DMTr-2′-*O*-Methyl-cytidine (*N*-Bz) *M.W.683.72*	$150.00	$280.00	$1,260.00
PM-5733	5′-*O*-DMTr-2′-*O*-Methyl-guanosine (*N*-*i*Bu) *M.W. 669.72*	$180.00	$340.00	$1,530.00
PM-5734	5′-*O*-DMT-2′-*O*-Methyl-uridine *M.W. 580.59*	$150.00	$280.00	$1,260.00
PM-5735	5′-*O*-DMTr-2′-*O*-Methyl-cytidine (*N*-Ac) *M.W.601.65*	$180.00	$340.00	$1,530.00
PM-3701	5′-*O*-DMTr-2′-*O*-Methyl-adenosine (*N*-PAC) *M.W. 717.77*	$195.00	$355.00	$1,590.00
PM-3702	5′-*O*-DMTr-2′-*O*-Methyl-cytidine (*N*-PAC) *M.W. 693.74*	$165.00	$310.00	$1,395.00
PM-3703	5′-*O*-DMTr-2′-*O*-Methyl-guanosine (*N*-PAC) *M.W. 733.77*	$195.00	$355.00	$1,590.00

Purity: Ultrapure products: Isomeric impurity undected by HPLC.

5′-*O*-DMTr-5-propynyl-2′-*O*-methyl-uridine



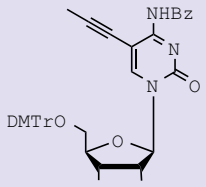
$C_{34}H_{34}N_2O_8$
Mol. Wt.: 598

Catalog# PM-1027

Pricing $375.00 / 100 mg

Purity: 98% + Isomeric impurity undected by HPLC.

5′-*O*-DMTr-5-propynyl-2′-*O*-methyl-cytidine (N-Bz)



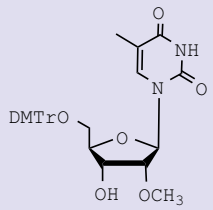
$C_{41}H_{39}N_3O_8$
Mol. Wt.: 701

Catalog# PM-1129

Pricing $485.00 / 100 mg

Purity: 98% + Isomeric impurity undected by HPLC.

5′-*O*-DMTr-5-methyl-2′-(*O*-Methyl) uridine



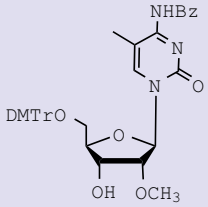
$C_{32}H_{34}N_2O_8$
Mol. Wt.: 574.6

Catalog# PM-3706

Pricing $375.00 / 100 mg

Purity: 98% + Isomeric impurity undected by HPLC.

5′-*O*-DMTr-5-methyl-2′-(*O*-methyl)-cytidine (N-Bz)



$C_{39}H_{39}N_3O_8$
Mol. Wt.: 677.

Catalog# PM-3705

Pricing $485.00 / 100 mg

Purity: 98% + Isomeric impurity undected by HPLC.

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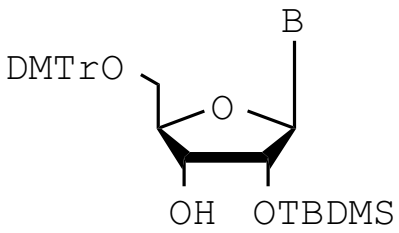
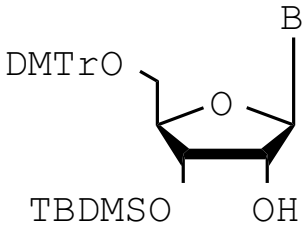


DMTr Protected 2'-O-TBDMS Ribo Nucleosides

B	Protection	Catalog#	CAS No.
A	*N*-Bz	PM-5851	81265-93-2
C	*N*-Bz	PM-5852	
G	*N*-*i*Bu	PM-5853	
U	N/A	PM-5854	81246-80-2
I	N/A	PM-5855	
C	*N*-Ac	PM-5856	
A	*N*,*N*-diBz	PM-5857	
A	*N*-PAC	PM-3501	
C	*N*-PAC	PM-3502	
G	*N*-PAC	PM-3503	
G	*N*-DMF	PM-5859	
G	*N*-*i*PrPAC	PM-3504	
G	*N*-Ac	PM-5850	

Catalog#	Productname	1g	5g	10g
PM-5851	5'-*O*-DMTr-2'-*O*-TBDMS-Adenosine (*N*-Bz) *M.W.787.97*	$90.00	$356.00	$675.00
PM-5852	5'-*O*-DMTr-2'-*O*-TBDMS-Cytidine (*N*-Bz) *M.W.763.95*	$90.00	$356.00	$675.00
PM-5853	5'-*O*-DMTr-2'-*O*-TBDMS-Guanosine (*N*-*i*Bu) *M.W. 769.96*	$90.00	$555.00	$845.00
PM-5854	5'-*O*-DMTr-2'-*O*-TBDMS-Uridine *M.W. 660.83*	$90.00	$356.00	$675.00
PM-5855	5'-*O*-DMTr-2'-*O*-TBDMS-Inosine *M.W. 684.85*	$98.00	$451.00	$845.00
PM-5856	5'-*O*-DMTr-2'-*O*-TBDMS-Cytidine (*N*-Ac) *M.W.701.88*	$95.00	$555.00	$845.00
PM-5857	5'-*O*-DMTr-2'-*O*-TBDMS-Adenosine *(N,N*-diBz) *M.W. 892.08*	$95.00	$555.00	$845.00
PM-3501	5'-*O*-DMTr-2'-*O*-TBDMS-Adenosine (*N*-PAC) *M.W. 818.00*	$90.00	$380.00	$700.00
PM-3502	5'-*O*-DMTr-2'-*O*-TBDMS-Cytidine (*N*-PAC) *M.W. 793.98*	$90.00	$380.00	$700.00
PM-3503	5'-*O*-DMTr-2'-*O*-TBDMS-Guanosine (*N*-PAC) *M.W. 834.00*	$93.00	$388.00	$705.00
PM-5859	5'-*O*-DMTr-2'-*O*-TBDMS-Guanosine (*N*-DMF) *M.W. 754.95*	$93.00	$388.00	$705.00
PM-3504	5'-*O*-DMTr-2'-*O*-TBDMS-Guanosine (*N*-*i*PrPAC) *M.W. 876.08*	$93.00	$388.00	$705.00
PM-5850	5'-*O*-DMTr-2'-*O*-TBDMS-Guanosine (*N*-Ac) *M.W. 741.90*	$93.00	$388.00	$705.00

Purity: 0% Isomeric Impurity. These are Ultrapure Products.



DMTr Protected 3'-O-TBDMS Nucleosides

B	Protection	Catalog#
A	*N*-Bz	PM-5861
C	*N*-Bz	PM-5862
G	*N*-*i*Bu	PM-5863
U	N/A	PM-5864
C	*N*-Ac	PM-5866

Catalog#	Productname	250mg	500 mg	1g	5g
PM-5861	5'-*O*-DMTr-3'-*O*-TBDMS-Adenosine (*N*-Bz) *M.W.787.97*	$90.00	$155.00	$320.00	$1,360.00
PM-5862	5'-*O*-DMTr-3'-*O*-TBDMS-Cytidine (*N*-Bz) *M.W.763.95*	$90.00	$155.00	$320.00	$1,360.00
PM-5863	5'-*O*-DMTr-3'-*O*-TBDMS-Guanosine (*N*-*i*Bu) *M.W. 769.96*	$126.00	$210.00	$450.00	$1,910.00
PM-5864	5'-*O*-DMTr-3'-*O*-TBDMS-Uridine *M.W. 660.83*	$90.00	$155.00	$320.00	$1,360.00
PM-5866	5'-*O*-DMTr-3'-*O*-TBDMS-Cytidine (*N*-Ac) *M.W. 701.88*	$90.00	$155.00	$320.00	$1,360.00

Purity: Ultrapure Products. Isomeric impurity undected by HPLC.

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Activation Reagents

1H-1,2,4-Triazole

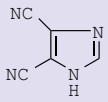
CAS No. 288-88-0

$C_2H_3N_3$
Mol. Wt.: 69

Catalog#	Pricing
RN-1412	$17.00 / 25 g
	$60.00 / 100 g
	$240.00 / 500 g

Dicyanoimidazole (DCI)

CAS No. 21122-28-7

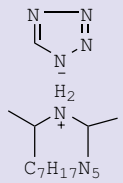


$C_5H_2N_4$
Mol. Wt.: 118

Catalog#	Pricing
RN-1571	$15.00 / 1 g
	$65.00 / 5 g
	$180.00 / 50 g
	$320.00 / 100 g
	$1,020.00 / 1 kg

Diisopropyl-ammonium-1*H*-tetrazolide

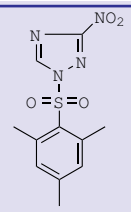
CAS No. 93183-36-9



$C_7H_{17}N_5$
Mol. Wt.: 171

Catalog#	Pricing
RN-1413	$80.00 / 5 g
	$240.00 / 50 g
	$420.00 / 100 g
	$1,050.00 / 1 kg

Mesitylene-sulphonyl-3-nitro-1H-1,2,4-Triazole (MSNT)



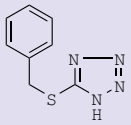
$C_{11}H_{12}N_4O_4S$
Mol. Wt.: 296

Catalog#	Pricing
RN-1403	$36.00 / 1 g
	$120.00 / 5 g
	$198.00 / 10 g

CAS No. 74257-00-4

5-Benzylthio-1*H*-tetrazole (BMT; BTT)

CAS No.21871-47-6

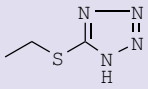


$C_8H_8N_4S$
Mol. Wt.: 192

Catalog#	Pricing
RN-1415	$18.00 / 1 g
	$78.00 / 5 g
	$216.00 / 50 g
	$354.00 / 100 g
	$1,020.00 / 1 kg

5-Ethylthio-1*H*-tetrazole (ETT)

CAS No. 89797-68-2



$C_3H_6N_4S$
Mol. Wt.: 130

Catalog#	Pricing
RN-6397	$18.00 / 1 g
	$78.00 / 5 g
	$216.00 / 50 g
	$354.00 / 100 g
	$1,020.00 / 1 kg

Bulk Quantity Available:

Bulk quantities of Ultra Pure 5'-benzylthio tetrazole & 5-Ethylthio tetrazole are available in 10, 50 & 100 kg size.
Please enquire for pricing.

5-Ethylthio-Tetrazole in RNA Synthesis

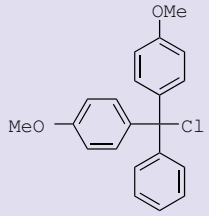
5-Ethylthio-tetrazole has been demonstrated to be a superior coupling reagent for RNA synthesis. This reagent increases the stepwise coupling efficiency by 2-3% as compared to the conventional activator 1-*H* Tetrazole[1] The overall yield and quality of oligonucleotide have been shown to increase dramatically when using 5-ethylthio-tetrazole. Perhaps the greater acidity and stability of 5-ethylhio-tetrazole accounts for its superior performance. This reagent is especially suitable for large scale RNA synthesis. Damha *et. al.* have utilized this reagent in RNA synthesis of natural linkage (3'-5') and unnatural linkage (2'- 5') and observed coupling efficiencies were >99% with coupling time of 7.5 min[2].

1. Sproat, B.; Colonna, F.; Mullah, B.; Tsou, D.; Andrus, A.; Hampel, A.; Vinayak, R. *Nucleosides & Nucleotides* **1995**, *14*, 255.
2. Wasner, M.; Ariohn, D.; Borkow, G.; Noronha, A.; Uddin, A.; Parniak, M.; Damha, M. *Biochemistry* **1998**, *37*, 7478.

Bulk Quantities: DMTr Chloride & MMTr Chloride

DMTr-Chloride

CAS No. 40615-36-9



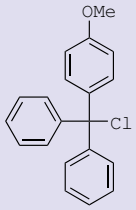
$C_{21}H_{19}ClO_2$
Mol. Wt.: 338

Catalog# RN-1401

Pricing
$15.00 / 5 g
$50.00 / 25 g
$165.00 / 100 g
$650.00 / 1 kg

MMTr-Chloride

CAS No. 14470-28-1



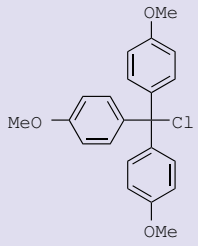
$C_{20}H_{17}ClO$
Mol. Wt.: 308

Catalog# RN-1574

Pricing
$18.00 / 5 g
$55.00 / 25 g
$195.00 / 100 g
$850.00 / 1 Kg

TMTr-Chloride

CAS No. 49757-42-8



$C_{22}H_{21}ClO_3$
Mol. Wt.: 368.

Catalog# RN-1491

Pricing
$45.00 / 5 g
$195.00 / 25 g

Bulk Quantity Available:

Bulk quantity of Ultra Pure DMTr-Chloride available in 5 kg, 10 kg, 50 kg & 100 kg size.
Please enquire for pricing.

DMTr Chloride: Typical Lot Analysis

Elemental Analysis:	Chlorine analysis results within 1 g/mole of the theoretical value and < 0.4g variation per 100g. Theoretical chlorine value: 35.44 g/mole Observed chlorine value: 36.42 g/mole
Color:	Off-white to faint pink, produces colorless DMTr-nucleosides.
Application:	Protecting agent in polynucleotide synthesis.
Reactivity:	1.2 Equivalents reacts to produce colorless DMTr-deoxynucleosides quantitatively.

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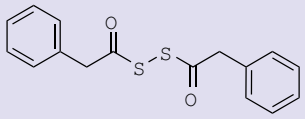
33 Industrial Way, Wilmington, MA 01887 • T: (978) 694-4500 • F: (978) 694-4502

Sulfurizing Reagents

Phenylacetyl-disulfide (PADS)

CAS No. 15088-78-5



$C_{16}H_{14}O_2S_2$
Mol. Wt.: 302.41

Catalog#	Pricing
RN-1496	$26.50 / 5 g
	$108.00 / 25 g

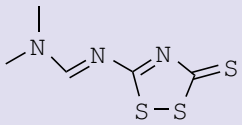
Silanized-Bottle (for Beaucage Reagent)

Catalog#	Pricing
BL-1536	$8.00 / 100 ml
	$8.00 / 250 ml
	$8.00 / 500 ml

DDTT Sulfurizing reagent*

CAS No. 1192027-04-5

((Dimethylamino-methylidene)amino)-3*H*-1,2,4-dithiazoline-3-thione



$C_5H_7N_3S_3$
Mol. Wt.: 205.

Catalog# RN-1588

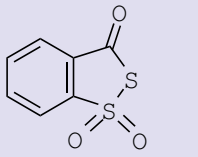
Pricing

$30.00 / 1 g
$150.00 / 5 g
$550.00 / 25 g
$1800.00 / 100 g
1 kg / Please inquire

Beaucage sulfurizing Reagent

CAS No. 66304-01-6

3*H*-1,2-Benzodithiol-3-one-1,1-dioxide



$C_7H_4O_3S_2$
Mol. Wt.: 20(

Catalog# RN-1535

Pricing

$15.00 / 100 mg
$50.00 / 1 g
$90.00 / 2 g

*DDTT [((Dimethylamino-methylidene)amino)-3*H*-1,2,4-dithiazoline-3-thione/Sulfurizing Reagent][1]: The use of DDTT[2-4] in the sulfurization step of oligonucleotide synthesis results in a very high percentage of sulfurization. In DNA synthesis, less than 2% of PO linkages in mixed-base oligodeoxynucleotide phosphorothioates were observed. In RNA synthesis, most sulfuriation agents including Beaucage Reagent are often inefficient. In contrast, the use of DDTT results typically only in 6-8% of the PO contents. It has further advantage of greater stability in the formulated solutions (upto six months). Recommended formulations are summarized in the table below (Table 1).

Table1: Recommended formulations for the synthesis of phosphorothioate oligonucleotides (DNA/RNA) & sulfurising in solution phase.

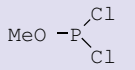
Conc. of DDTT	Solvent formulation v/v[5]	Oxidation time (DNA)	Comments[6]
0.05 M	Py/ACN – 3:7 Py/THF – 2:8	2.5 min	Formulation used in solid phase deoxy oligonucleotide (DNA) synthesis
0.1 M	Py Py/THF** – 4:6	2.0 min	Formulation used in solid phase deoxy oligonucleotide (DNA)synthesis
0.05 M	Pyr/ACN -4:6	2.0 min	Formulation used in solution phase deoxy oligonucleotide synthesis
0.05 M	Py/ ACN-3:7	Oxidation time (RNA) 4.0 min	Formulation used in solid phase RNA synthesis
0. 1 M	Py/ACN-3:7	3 min	Formulation used in solid phase RNA synthesis

References:

1. DDTT Sulfurizing solutions are listed on Ancillary Reagents Section, Page No. 19-25.
2. Xu, Q.; Musier-Forsyth, K.; Hammer R. P.; Barany G. *Nucl. Acids Res.* **1996**, *24*, 1602.
3. Xu, Q.; Barany G.; Hammer R. P.; Forsyth, M.K. *Nucl. Acids Res.* **1996**, *24*, 3643.
4. Guzaev, A. P. *et. al.* U.S. Pat. Number 7,723,528.
5. For use of THF, care must be taken to ensure peroxide free THF only.
6. (>99%) to P-S and negligible amount of P-O formation occurred, as analyzed by ^{31}P NMR.

Phosphorylating Reagents

Methyl dichlorophosphite
Methyl phosphorodichloridite

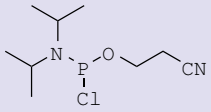


CH_3Cl_2OP
Mol. Wt.: 132

Catalog#	Pricing
RN-1407	$18.00 / 1 g
	$30.00 / 5 g
	$85.00 / 25 g

CAS No. 3279-26-3

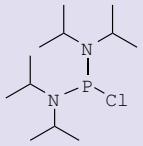
2-Cyanoethyl *N*,*N*-diisopropylchlorophosphoramidite
CAS No. 89992-70-1



$C_9H_{18}ClN_2OP$
Mol. Wt.: 236.6

Catalog#	Pricing
RN-1505	$13.50 / 1 g
	$55.50 / 5 g
	$250.00 / 25 g
	$700.00 / 100 g

Bis(diisopropylamino)-chlorophosphine

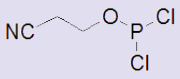


$C_{12}H_{28}ClN_2P$
Mol. Wt.: 266

Catalog#	Pricing
RN-8882	$15.00 / 1 g
	$70.00 / 5 g
	$900.00 / 100 g

CAS No. 56183-63-2

2-Cyanoethyl dichlorophosphite

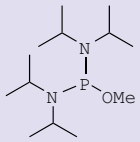


$C_3H_4Cl_2NOP$
Mol. Wt.: 171.95

Catalog#	Pricing
RN-8883	$16.00 / 1 g
	$75.00 / 5 g

CAS No. 76101-30-9

Methyl N,N,N′,N′-tetraisopropylphosphordiamidite

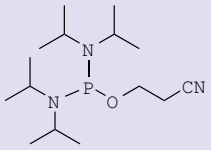


$C_{13}H_{31}N_2OP$
Mol. Wt.: 262

Catalog#	Pricing
RN-8881	$20.00 / 1 g
	$95.00 / 5 g

CAS No. 92611-10-4

2-Cyanoethyl N,N,N′,N′-tetraisopropylphosphordiamidite

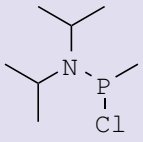


$C_{15}H_{32}N_3OP$
Mol. W.t: 301.41

Catalog#	Pricing
RN-1545	$12.00 / 1 g
	$40.00 / 5 g
	$550.00 / 100 g

CAS No. 102691-36-1

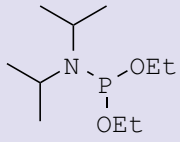
Chloro-*N*,*N*-diisopropyl-1-methylphosphinamine



$C_7H_{17}ClNP$
Mol. Wt.: 181

Catalog#	Pricing
RN-1510	$265.00 / 5 g
	$2,120.00 / 50 g

Diethyl diisopropylphosphoramidite

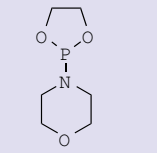


$C_{10}H_{24}NO_2P$
Mol. Wt.: 221

Catalog#	Pricing
RN-1410	$90.00 / 5 g

CAS No. 42053-26-9

Ethylene-glycol-morpholino phosphoramidite
(4-(1,3,2-dioxaphospholan-2-yl)morpholine)



$C_6H_{12}NO_3P$
Mol. Wt.: 177

Catalog#	Pricing
RN-1516	$20.00 / 1 g
	$95.00 / 5 g

diethyl diisopropylphosphoramidite (RN-1410): A stable capping Reagent
This reagent is utilized for capping directly during oligodeoxynucleotide synthesis by phosphoramidite method and avoids preparation of the commonly used, and rather unstable, Diethylphosphotriazolide capping reagent.

Ethylene-glycol-morpholino phosphoramidite (RN-1516)
Ethylene-glycol-morpholino phosphoramidite an exicileent capping reagent.

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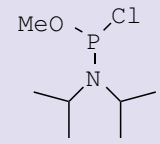
Phosphoramidite Chemistry Reagents

Phosphorylating Reagents & Bis-Silyloxy Reagents

Methyl *N,N'*-diisopropylchlorophosphoramidite

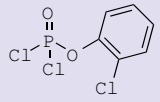


$C_7H_{17}ClNOP$
Mol. Wt.: 19

Catalog#	Pricing
RN-1409	$17.00 / 1 g
	$60.00 / 5 g
	$264.00 / 25 g
	$816.00 / 100 g

CAS No. 86030-43-5

2-Chlorophenyl-phosphorodichloridate

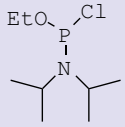


$C_6H_4Cl_3O_2P$
Mol. Wt.: 24

Catalog#	Pricing
RN-1421	$18.50 / 5 g
	$74.00 / 25 g

CAS No. 15074-54-1

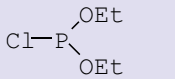
Ethyl *N,N'*-diisopropylchlorophosphoramidite



$C_8H_{19}ClNOP$
Mol. Wt.: 21

Catalog#	Pricing
RN-4137	$40.00 / 1 g
	$190.00 / 5 g

Diethyl phosphorochloridite



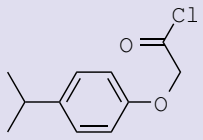
$C_4H_{10}ClO_2P$
Mol. Wt.: 15

Catalog#	Pricing
RN-1408	$30.00 / 5 g
	$99.00 / 25 g

CAS No. 589-57-1

Nucleoside synthesis Reagents

4-Isopropyl-phenoxy-acetylchloride (iPrPAC-Cl)

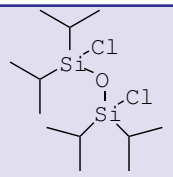


$C_{11}H_{13}ClO_2$
Mol. Wt.: 212

Catalog#	Pricing
RN-1705	$15.00 / 1 g
	$70.00 / 5 g

CAS No. 223128-33-4

Bis-silylating Reagent; TIPS chloride
(1,3-Dichloro-1,1,3,3-tetraisopropyldisiloxane)



$C_{12}H_{28}Cl_2OSi_2$
Mol. Wt.: 31

Catalog#	Pricing
RN-1521	$40.00 / 1 g
	$80.00 / 5 g
	$210.00 / 50 g

CAS No. 69304-37-6

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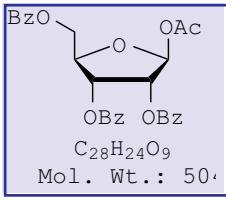
Email: info@chemgenes.com

Sugars, Purines & Pyrimidines

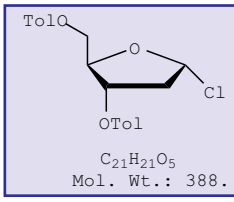
2,3,5-Tri-O-benzoyl-β-D-ribofuranosyl-1-Acetate



Catalog#	Pricing
RN-4131	$32.00 / 5 g
	$122.00 / 25 g

CAS No. 6974-32-9

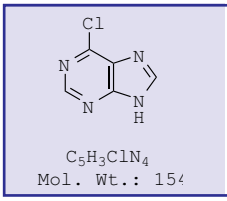
1-α-chloro-3,5-ditoluoyl-2-deoxy-D-ribose



Catalog#	Pricing
RN-4130	$45.00 / 1 g
	$200.00 / 5 g

CAS No. 4330-21-6

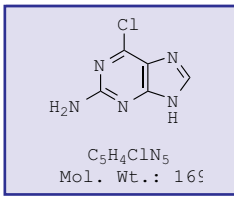
6-Chloro-purine



Catalog#	Pricing
RN-1030	$20.00 / 1 g
	$68.00 / 5 g

CAS No. 87-42-3

6-Chloro-guanine

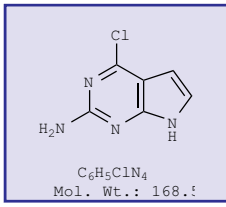


Catalog#	Pricing
RN-1051	$40.00 / 1 g
	$190.00 / 5 g

CAS No. 10310-21-1

6-Chloro-7-deaza-guanine

CAS No. 84955-31-7



Catalog# BS-1011

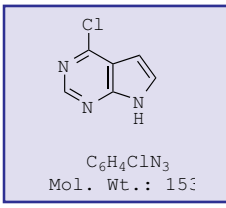
Pricing

$138.00 / 1 g

Purity: 98% +

6-Chloro-7-deaza-purine

CAS No. 3680-69-1



Catalog# RP-1021

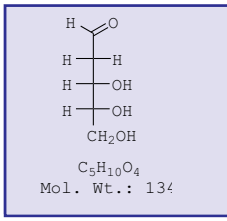
Pricing

$138.00 / 1 g

Purity: 98% +

2-Deoxy-D-ribose

CAS No. 533-67-5



Catalog# RN-1061

Pricing

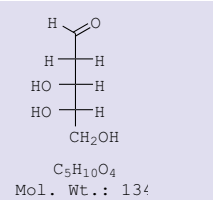
$16.00 / 1 g

$52.00 / 5 g

Purity: 98% +

2-Deoxy-β-L-ribose

CAS No. 18546-37-7



Catalog# RP-1062

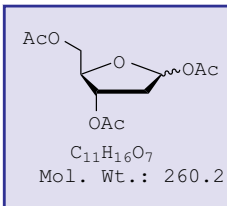
Pricing

$16.00 / 1 g

$52.00 / 5 g

Purity: 98% +

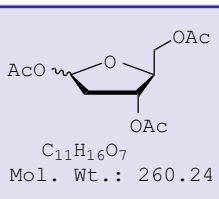
1,3,5-O-Triacetyl 2-deoxy-a/β-D-ribose



Catalog#	Pricing
RN-1064	$44.00 / 5 g
	$150.00 / 25 g

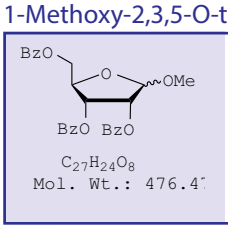
CAS No. 4594-52-9

1,3,5-O-Triacetyl 2-deoxy-a/β-L-ribose



Catalog#	Pricing
RN-1065	$45.00 / 1 g
	$200.00 / 5 g

1-Methoxy-2,3,5-O-tribenzoyl-a/β-D-ribose



Catalog#	Pricing
RN-1031	$20.00 / 1 g
	$80.00 / 5 g

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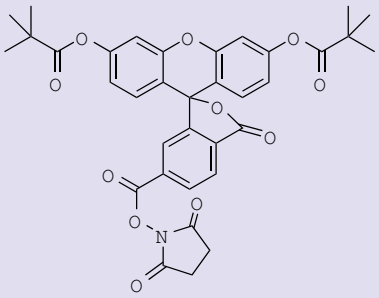
NHS Esters: Fluoresceins

6-Fluorescein-dipivalate NHS Ester
(6-FAM-Dipivalate NHS Ester)



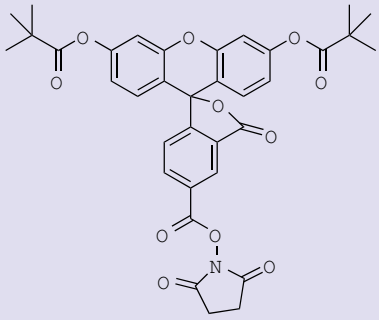
$C_{35}H_{31}NO_{11}$
Mol. Wt.: 641.62

Catalog# RN-9651

Pricing
$67.00 / 10 mg
$303.75 / 50 mg
$545.00 / 100 mg

Purity: 98% +

5-Fluorescein-dipivalate NHS Ester
(5-FAM-Dipivalate NHS Ester)



$C_{35}H_{31}NO_{11}$
Mol. Wt.: 641.62

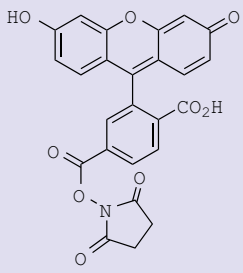
Catalog# RN-9652

Pricing
$74.25 / 10 mg
$334.00 / 50 mg
$601.00 / 100 mg

Purity: 98% +

6-Fluorescein NHS Ester
(6-FAM NHS Ester)

CAS No. 92557-81-8



$C_{25}H_{15}NO_9$
Mol. Wt.: 473.39

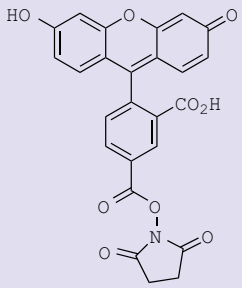
Catalog# RN-9661

Pricing
$22.00 / 10 mg
$144.00 / 100 mg
$1,296.00 / 1 g

Purity: 98% +

5-Fluorescein NHS Ester
(5-FAM NHS Ester)

CAS No. 92557-80-7



$C_{25}H_{15}NO_9$
Mol. Wt.: 473.3

Catalog# RN-9662

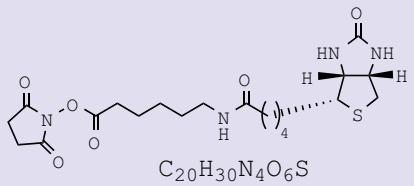
Pricing
$24.75 / 10 mg
$178.50 / 100 mg
$1,606.00 / 1 g

Purity: 98% +

NHS Esters: Biotin

(+) Biotin-Amido-hexanoic acid NHS ester

CAS No. 72040-63-2

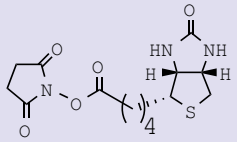


$C_{20}H_{30}N_4O_6S$
Mol. Wt.: 454.54

Catalog#	Pricing
RN-1449	$56.00 / 25 mg
	$168.00 / 100 mg
	$348.00 / 250 mg

(+) Biotin *N*-hydroxysuccinimido ester; d-Biotin NHS-ester

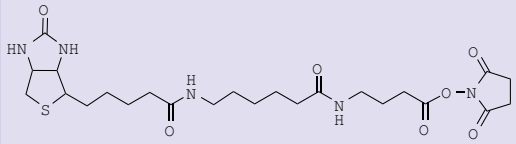
CAS No. 35013-72-0



$C_{14}H_{19}N_3O_5S$
Mol. Wt.: 341

Catalog#	Pricing
RN-1500	$68.00 / 100 mg
	$186.00 / 250 mg
	$426.00 / 1 g

(+) Biotin-X-Y-SSE (Biotinamidohexanoyl-amidobutanoyl Succinimidyl ester)



$C_{24}H_{37}N_5O_7S$
Mol. Wt.: 539.65

Catalog#	Pricing
RN-1508	$30.00 / 100 mg

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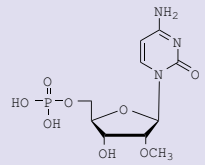
Monophosphates

2′-*O*-Methyl-cytidine-5′-monophosphate (Sodium salt)



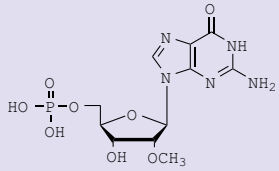
$C_{10}H_{16}N_3O_8P$ (Free Monophospha
Mol. Wt.: 337.22

Catalog#	Pricing
NMP-8311	$165.00 / 1 mg
	$297.00 / 2 mg
	$667.00 / 5 mg

Purity: 98% +

2′-*O*-Methyl-guanosine-5′-monophosphate (Sodium salt)

CAS No. 24121-01-5

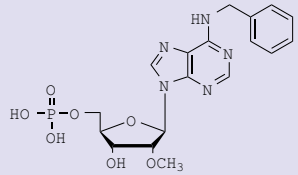


$C_{11}H_{16}N_5O_8P$ (Free Monophospha
Mol. Wt.: 377.25

Catalog#	Pricing
NMP-8312	$165.00 / 1 mg
	$297.00 / 2 mg
	$667.00 / 5 mg

Purity: 98% +

2′-*O*-Methyl-*N*^{6}-benzyl-adenosine-5′-monophosphate (Sodium salt)

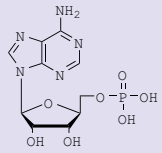


$C_{18}H_{22}N_5O_7P$ (Free Monophosphat
Mol. Wt.: 451.37

Catalog#	Pricing
NMP-8313	$165.00 / 1 mg
	$297.00 / 2 mg
	$667.00 / 5 mg

Purity: 98% +

ß-L-Adenosine-5′-monophosphate (Sodium salt)

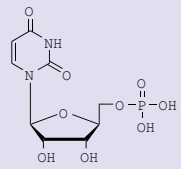


$C_{10}H_{14}N_5O_7P$ (Free Monophospha
Mol. Wt: 347.22

Catalog#	Pricing
NMP-8314	$200.00 / 1 mg
	$360.00 / 2 mg
	$810.00 / 5 mg

Purity: 98% +

ß-L-Uridine-5′-monophosphate (Sodium salt)



$C_9H_{13}N_2O_9P$ (Free Monophosphat
Mol. Wt.: 324.18

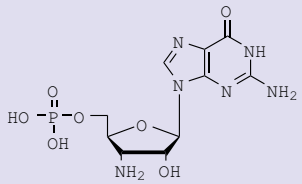
Catalog#	Pricing
NMP-8315	$200.00 / 1 mg
	$360.00 / 2 mg
	$810.00 / 5 mg

Purity: 98% +

Monophosphates

Monophosphates

3′-Amino-guanosine-5′-monophosphate

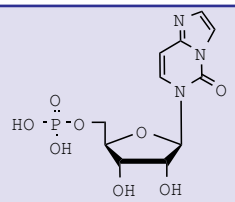


$C_{10}H_{15}N_6O_7P$ (Free Monophospha
Mol. Wt.: 362.24

Catalog#	Pricing
NMP-8316	$200.00 / 1 mg
	$360.00 / 2 mg
	$810.00 / 5 mg

Purity: 98% +

Ethano-cytidine-5′-monophosphate

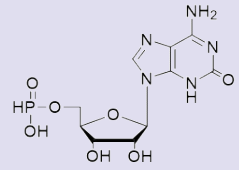


$C_{11}H_{14}N_3O_8P$ (Free Monophosphat
Mol. Wt.: 347.22

Catalog#	Pricing
NMP-8317	$200.00 / 1 mg
	$360.00 / 2 mg
	$810.00 / 5 mg

Purity: 98% +

Iso-guanosine - 5′-monophosphate

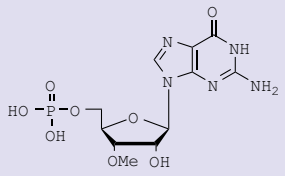


$C_{14}H_{20}N_5O_9P$(Free Monophosphate)
Mol. Wt.: 433.31

Catalog#	Pricing
NMP-8318	$200.00 / 1 mg
	$360.00 / 2 mg
	$810.00 / 5 mg

Purity: 98% +

3′-Methyl-guanosine-5′-monophosphate

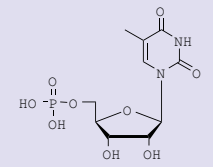


$C_{11}H_{16}N_5O_8P$ (Free Monophosphat
Mol. Wt.: 377.25

Catalog#	Pricing
NMP-8319	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

Ribo-Thymidine-5′-monophosphate



$C_{10}H_{15}N_2O_9P$ (Free Monophosphat
Mol. Wt.: 338.21

Catalog#	Pricing
NMP-8319	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

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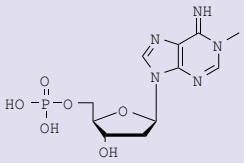
Monophosphates

N^1-Methyl-2′-deoxyadenosine-5′-monophosphate (Sodium salt)

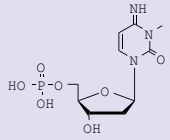


$C_{11}H_{16}N_5O_6P$ (Free Monophospha
Mol. Wt.: 345.25

Catalog#	Pricing
NMP-8431	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

N^3-Methyl-2′-deoxycytidine-5′-monophosphate (Sodium salt)

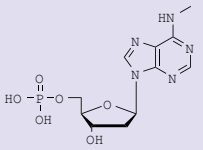


$C_{10}H_{16}N_3O_7P$ (Free Monophospha
Mol. Wt.: 321.22

Catalog#	Pricing
NMP-8432	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

N^6-Methyl-2′-deoxyadenosine-5′-monophosphate (Sodium salt)

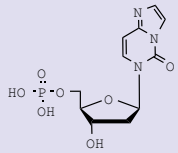


$C_{11}H_{16}N_5O_6P$ (Free Monophospha
Mol. Wt.: 345.25

Catalog#	Pricing
NMP-8433	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

Ethano-2′-deoxycytidine-5′-monophosphate (Sodium salt)

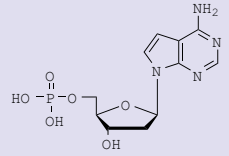


$C_{11}H_{14}N_3O_7P$ (Free Monophospha
Mol. Wt.: 331.22

Catalog#	Pricing
NMP-8434	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

7-Deaza-2′-deoxyadenosine-5′-monophosphate; 2′-Deoxytubercidin-5′-monophosphate (Sodium salt)



$C_{11}H_{15}N_4O_6P$ (Free Monophospha
Mol. Wt.: 330.23

Catalog#	Pricing
NMP-8435	$200.00 / 1 mg
	$360.00 / 2 mg
	$810.00 / 5 mg

Purity: 98% +

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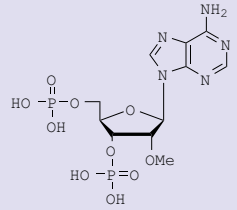
Monophosphates

3′,5′-Diphosphates and 5′-diphosphates

2′-*O*-Methyl-adenosine-3′,5′-diphosphate (Sodium salt)

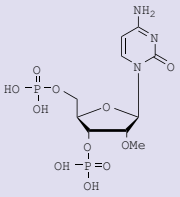


$C_{11}H_{16}N_5O_{10}P_2$ (Free diphospha
Mol. Wt.: 441.23

Catalog#	Pricing
NDP-7311	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

2′-*O*-Methyl-cytidine-3′,5′-Diphosphate (Sodium salt)

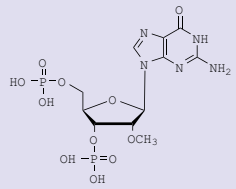


$C_{10}H_{17}N_3O_{11}P_2$ (Free diphospha
Mol. Wt.: 417.20

Catalog#	Pricing
NDP-7312	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

2′-*O*-Methyl-guanosine-3′,5′-Diphosphate (Sodium salt)

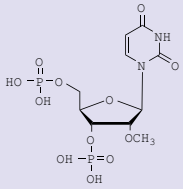


$C_{11}H_{17}N_5O_{11}P_2$ (Free disphosphat
Mol. Wt.: 457.22

Catalog#	Pricing
NDP-7313	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

2′-*O*-Methyl-uridine-3′,5′-Diphosphate (Sodium salt)



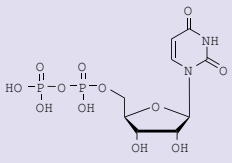
$C_{10}H_{16}N_2O_{12}P_2$ (Free disphosph
Mol. Wt.: 418.19

Catalog#	Pricing
NDP-7314	$165.00 / 1 mg
	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

Uridine-5′-diphosphate (Sodium salt)
[NDP-7315] CAS No. 21931-53-3

Uridine 5′-diphosphate (Sodium salt) Hydrate
[NDP-7316]



$C_9H_{14}N_2O_{12}P_2$ (Free Diphospha
Mol. Wt.: 404.16

Catalog#	Pricing
NDP-7315	$165.00 / 1 mg
NDP-7316	$297.00 / 2 mg
	$669.00 / 5 mg

Purity: 98% +

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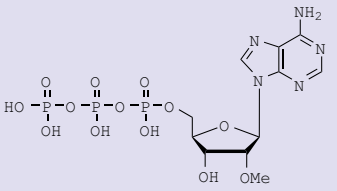
Triphosphates

2′-*O*-Methyl-adenosine-5′-triphosphate (Sodium salt)

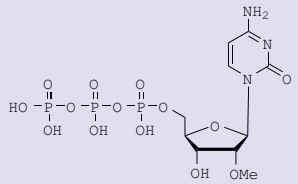


$C_{11}H_{18}N_5O_{13}P_3$ (Free Triphosphat
Mol Wt.: 521.21

Catalog#	Pricing
NTP-3386	$240.00 / 1 mg
	$430.00 / 2 mg
	$970.00 / 5 mg

Purity: 98% +

2′-*O*-Methyl-cytidine-5′-triphosphate (Sodium salt)

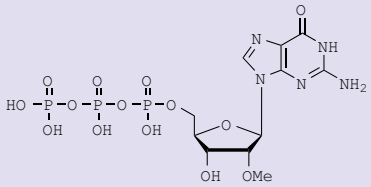


$C_{10}H_{18}N_3O_{14}P_3$ (Free Triphosphat
Mol. Wt.: 497.18

Catalog#	Pricing
NTP-3387	$240.00 / 1 mg
	$430.00 / 2 mg
	$970.00 / 5 mg

Purity: 98% +

2′-*O*-Methyl-guanosine-5′-triphosphate (Sodium salt)

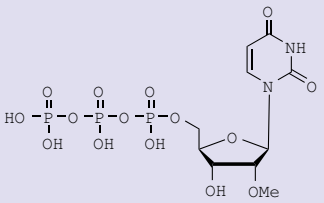


$C_{11}H_{18}N_5O_{14}P_3$ (Free Triphosphate)
Mol. Wt.: 537.21

Catalog#	Pricing
NTP-3388	$240.00 / 1 mg
	$430.00 / 2 mg
	$970.00 / 5 mg

Purity: 98% +

2′-*O*-Methyl-uridine-5′-triphosphate (Sodium salt)

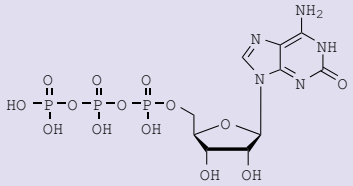


$C_{10}H_{17}N_2O_{15}P_3$ (Free Triphosphat
Mol. Wt.: 498.17

Catalog#	Pricing
NTP-3389	$240.00 / 1 mg
	$430.00 / 2 mg
	$970.00 / 5 mg

Purity: 98% +

Iso-guanosine-5′-triphosphate (Sodium salt)



$C_{10}H_{16}N_5O_{14}P_3$ (Free Triphosphate)
Mol. Wt.: 523.18

Catalog#	Pricing
NTP-4348	$280.00 / 1 mg
	$500.00 / 2 mg
	$1125.00 / 5 mg

Purity: 98% +

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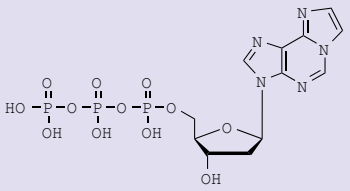
Triphosphates

Etheno-2′-deoxyadenosine-5′-triphosphate (Sodium salt)

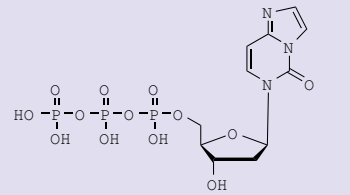


$C_{12}H_{16}N_5O_{12}P_3$ (Free Triphospha
Mol. Wt.: 515.20

Catalog#	Pricing
NTP-4344	$280.00 / 1 mg
	$500.00 / 2 mg
	$1125.00 / 5 mg

Purity: 98% +

Etheno-2′-deoxycytidine-5′-triphosphate (Sodium salt)

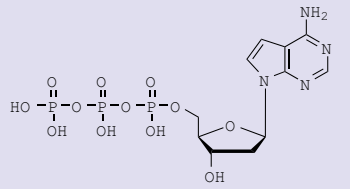


$C_{11}H_{16}N_3O_{13}P_3$ (Free Triphospha
Mol. Wt.: 491.18

Catalog#	Pricing
NTP-4346	$280.00 / 1 mg
	$500.00 / 2 mg
	$1125.00 / 5 mg

Purity: 98% +

7-Deaza-2′-deoxyadenosine-5′-triphosphate (Sodium salt)



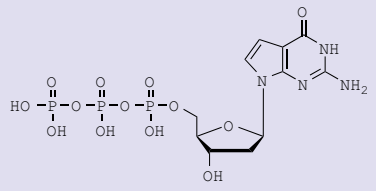
$C_{11}H_{17}N_4O_{12}P_3$ (Free Triphosphate)
Mol. Wt.: 490.19

Catalog#	Pricing
NTP-4384	$240.00 / 1 mg
	$430.00 / 2 mg
	$970.00 / 5 mg

Purity: 98% +

CAS No. 101515-08-6

7-Deaza-2′-deoxyguanosine-5′-triphosphate (Sodium salt)

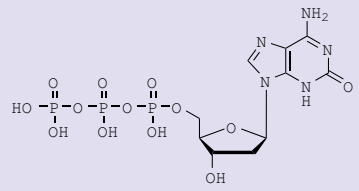


$C_{11}H_{17}N_4O_{13}P_3$ (Free Triphosphate)
Mol. Wt.: 506.19

Catalog#	Pricing
NTP-4386	$240.00 / 1 mg
	$430.00 / 2 mg
	$970.00 / 5 mg

Purity: 98% +

Iso-2′-deoxyguanosine-5′-triphosphate (Sodium salt)



$C_{10}H_{16}N_5O_{13}P_3$ (Free Triphosphate
Molecular Weight: 507.18

Catalog#	Pricing
NTP-4396	$280.00 / 1 mg
	$500.00 / 2 mg
	$1125.00 / 5 mg

Purity: 98% +

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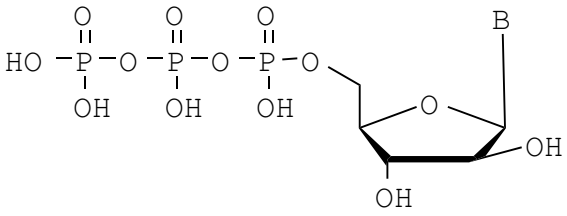
Triphosphates

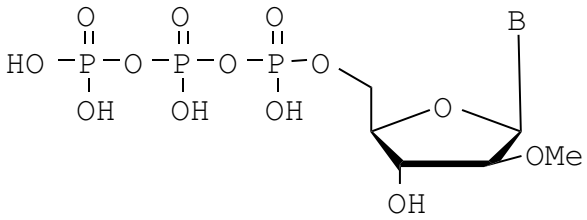


Ara Triphosphate (Sodium salt)

5′	B	Catalog#
Triphosphate	A	NTP-5411
Triphosphate	C	NTP-5412
Triphosphate	G	NTP-5413
Triphosphate	U	NTP-5414

Catalog#	Product Name	1mg	2mg	5mg
NTP-5411	Ara-adenosine *M.W. 551.14*	$300.00	$540.00	$1,215.00
NTP-5412	Ara-cytidine *M.W. 527.12*	$300.00	$540.00	$1,215.00
NTP-5413	Ara-guanosine *M.W. 567.14*	$300.00	$540.00	$1,215.00
NTP-5414	Ara-uridine *M.W. 528.10*	$300.00	$540.00	$1,215.00

Purity: All the above produced have a purity of 98% +



Ara 2′-O-Methyl Triphosphate (Sodium salt)

5′	B	Catalog#
Triphosphate	A	NTP-5311
Triphosphate	C	NTP-5312
Triphosphate	G	NTP-5313
Triphosphate	U	NTP-5314

Catalog#	Product Name	1mg	2mg	5mg
NTP-5311	Ara-(2'-*O*-Methyl)-adenosine *M.W. 565.17*	$350.00	$630.00	$1,410.00
NTP-5312	Ara-(2'-*O*-Methyl)-cytidine *M.W. 541.15*	$350.00	$630.00	$1,410.00
NTP-5313	Ara-(2'-*O*-Methyl)-guanosine *M.W. 581.17*	$350.00	$630.00	$1,410.00
NTP-5314	Ara-(2'-*O*-Methyl)-uridine *M.W. 542.13*	$350.00	$630.00	$1,410.00

Purity: All the above produced have a purity of 98% +

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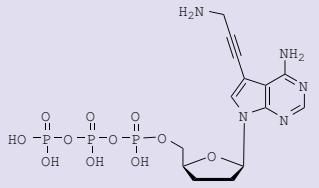
Triphosphates

7-Deaza-7-propargylamine-2′,3′-dideoxyadenosine-5′-triphosphate-(NTP-6311)
7-Deaza7-propargylamine-2′,3′-dideoxydenosine-5′-triphosphate (Sodium salt) (NTP-6312)

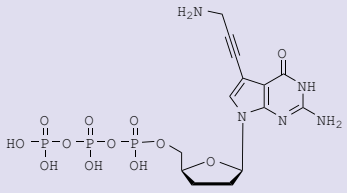


$C_{14}H_{20}N_5O_{11}P_3$ (Free Triphosphate)
Mol. Wt.: 527.26

Catalog#	Pricing
NTP-6311	$300.00 / 1 mg
NTP-6312	$540.00 / 2 mg
	$1,215.00 / 5 mg

Purity: 98% +

7-Deaza-7-propargylamine-2′,3′-dideoxyguanosine-5′-triphosphate (Sodium salt)



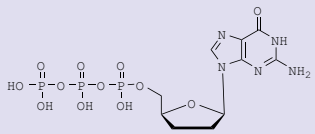
$C_{14}H_{20}N_5O_{12}P_3$ (Free Triphosphate)
Mol. Wt.: 543.26

Catalog#	Pricing
NTP-6313	$300.00 / 1 mg
	$540.00 / 2 mg
	$1,215.00 / 5 mg

Purity: 98% +

2′,3′-Dideoxyguanosine-5′-triphosphate (Sodium salt)

CAS No. 68726-28-3

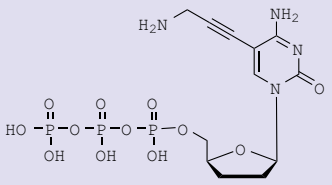


$C_{10}H_{16}N_5O_{12}P_3$ (Free Triphosphate)
Mol. Wt.: 491.18

Catalog#	Pricing
NTP-6316	$280.00 / 1 mg
	$500.00 / 2 mg
	$1,125.00 / 5 mg

Purity: 98% +

5-Propargylamine-2′, 3′-dideoxycytidine-5′-triphosphate (Sodium salt) (NTP-5316)
5-Propargylamine-2′, 3′-dideoxycytidine-5′-triphosphate (NTP-5318)

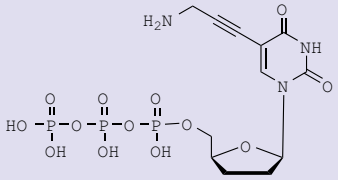


$C_{12}H_{19}N_4O_{12}P_3$ (Free Triphosphat
Mol. Wt.: 504.22

Catalog#	Pricing
NTP-5316	$300.00 / 1 mg
NTP-5318	$540.00 / 2 mg
	$1,215.00 / 5 mg

Purity: 98% +

5-Propargylamine-2′,3′-dideoxy-uridine-5′-triphosphate (Sodium salt)



$C_{12}H_{18}N_3O_{13}P_3$ (Free Triphosphat
Mol. Wt.: 505.20

Catalog#	Pricing
NTP-5317	$300.00 / 1 mg
	$540.00 / 2 mg
	$1,215.00 / 5 mg

Purity: 98% +

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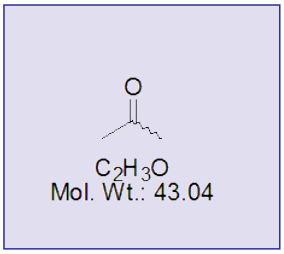
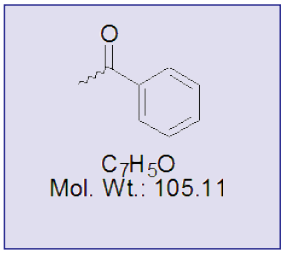
Common Abbreviations

Ac
Acetyl



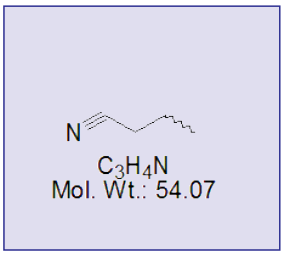
C_2H_3O
Mol. Wt.: 43.04

Bz
Benzoyl



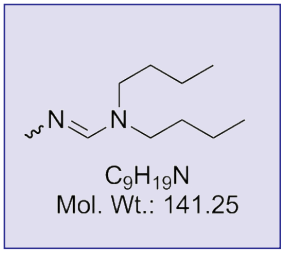
C_7H_5O
Mol. Wt.: 105.11

CE
Cyanoethyl



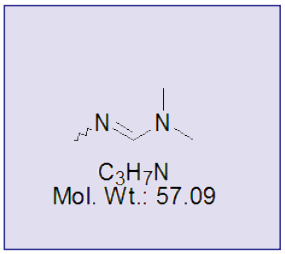
C_3H_4N
Mol. Wt.: 54.07

DBF
Di-N-butylformamidyl



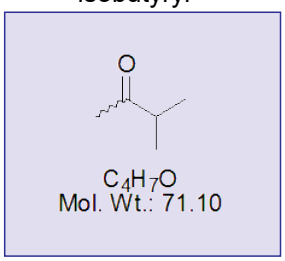
$C_9H_{19}N$
Mol. Wt.: 141.25

DMF
Dimethylformamidyl



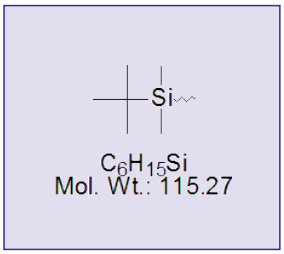
C_3H_7N
Mol. Wt.: 57.09

*i*Bu
isobutyryl



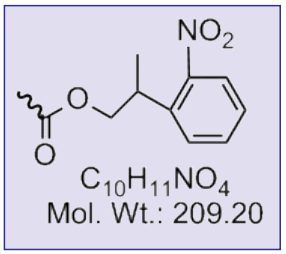
C_4H_7O
Mol. Wt.: 71.10

TBDMS
tertbutyldimethylsilyl



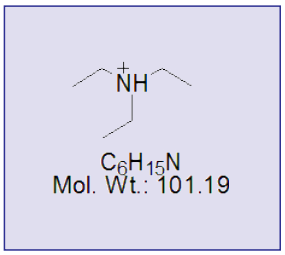
$C_6H_{15}Si$
Mol. Wt.: 115.27

NPPOC
2-(2-Nitrophenyl) propoxycorbonyl



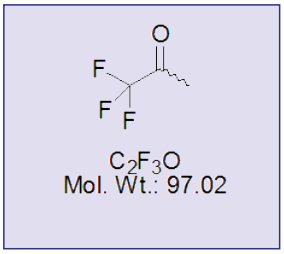
$C_{10}H_{11}NO_4$
Mol. Wt.: 209.20

TEA
triethylammonium



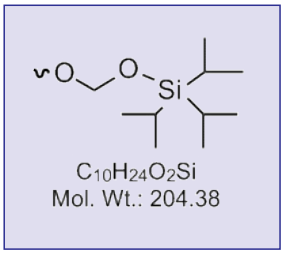
$C_6H_{15}N$
Mol. Wt.: 101.19

TFA
Trifluoracetyl



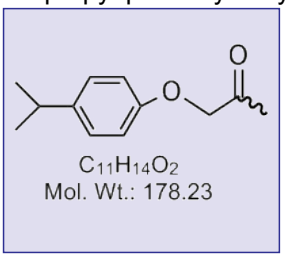
C_2F_3O
Mol. Wt.: 97.02

TOM
[(triisopropylsilyl)oxy]methyl



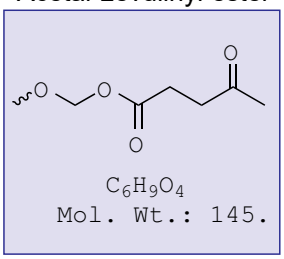
$C_{10}H_{24}O_2Si$
Mol. Wt.: 204.38

*i*PrPAC
Isopropyl-phenoxyacetyl



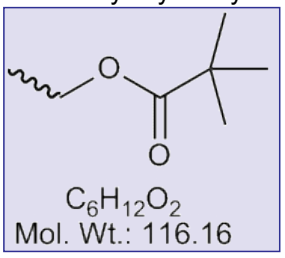
$C_{11}H_{14}O_2$
Mol. Wt.: 178.23

ALE
Acetal Levulinyl ester



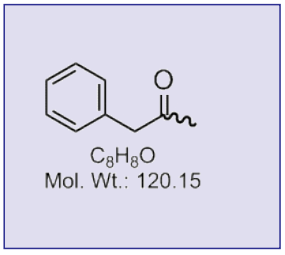
$C_6H_9O_4$
Mol. Wt.: 145.

Pivom
Pivaloyloxymethyl



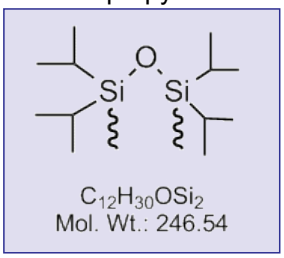
$C_6H_{12}O_2$
Mol. Wt.: 116.16

Ph-Ac
Phenyl Acetyl



C_8H_8O
Mol. Wt.: 120.15

Bis Silyl
Tetra-isopropyl-disiloxane



$C_{12}H_{30}OSi_2$
Mol. Wt.: 246.54

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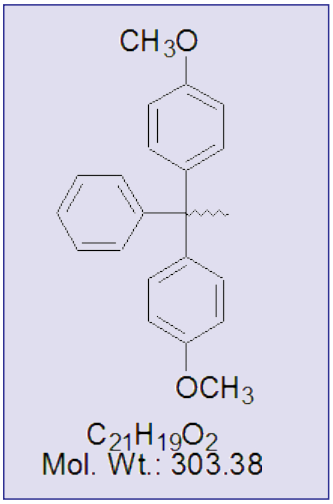
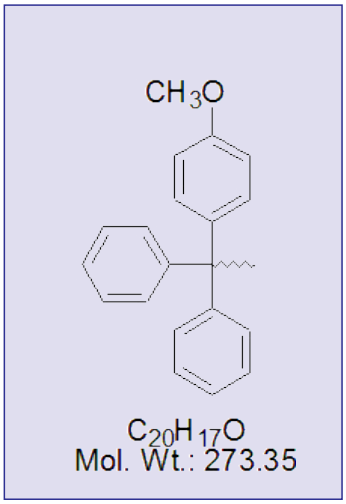
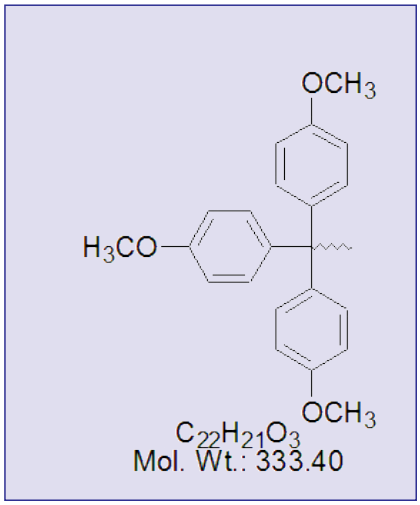
DMTr
Dimethoxytrityl



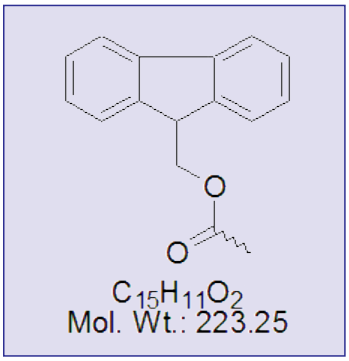
MMTr
Monoimethoxytrityl



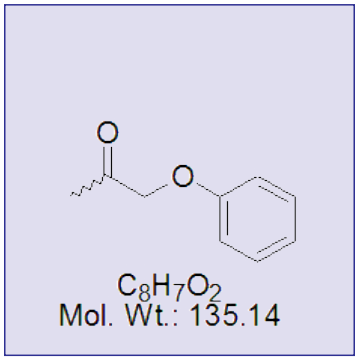
TMTr
Trimethoxytrityl



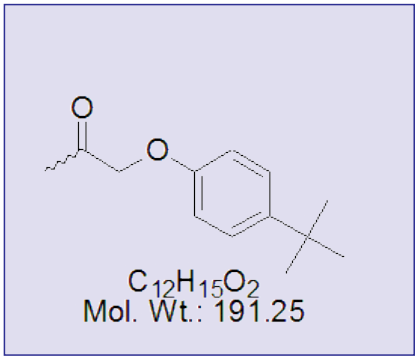
Fmoc
Fluorenylmethoxycarbonyl



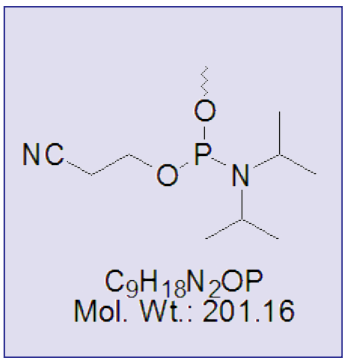
PAC
Phenoxyacetyl



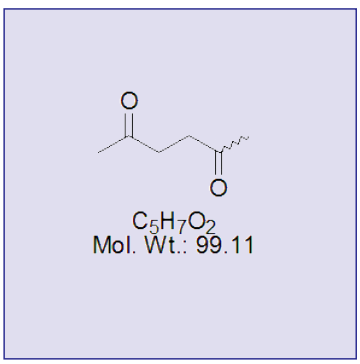
*t*BPAC
tert-butylphenoxyacetyl



CEP
Cyanoethyl *N,N'*-diisopropyl phosphoramidite



Levulinyl



THF-tetrahydrofuran
lcaa= long chain allkylamino
CPG=Control Pore Glass
AMA=ammonium methyl amine(aq)

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Product Name	Catalog#	Page#
DNA Synthesis		
A: CE Phosphoramidites		
(1)-Std base protection (DNA Synthesis)		
Deoxyadenosine (*N*-Bz)-DMTr-3'-CEP	ANP-5551	3
Deoxyadenosine (*N*-Bz)-MMTr-3'-CEP	ANP-5556	3
Deoxycytidine (*N*-Ac)-DMTr-3'-CEP	ANP-5560	3
Deoxycytidine (*N*-Bz)-DMTr-3'-CEP	ANP-5552	3
Deoxycytidine (*N*-Bz)-MMTr-3'-CEP	ANP-5558	3
Deoxycytidine (*N*-iBu)-DMTr-3'-CEP	ANP-5559	3
Deoxyguanosine (*N*-iBu)-DMTr-3'-CEP	ANP-5553	3
Deoxyguanosine (*N*-iBu)-MMTr-3'-CEP	ANP-5557	
Mix bases (equimolar) (dA+dC+dG+dT)	ANP-1070	3
Thymidine-DMTr-3'-CEP	ANP-5554	3
Thymidine-MMTr-3'-CEP	ANP-5561	3
(2)-Mild base protection (DNA Synthesis)		
Deoxyadenosine (N^6-diBz)-DMTr-3'-CEP	ANP-6767	5
Deoxyadenosine (N^6-DMA)-DMTr-3'-CEP	ANP-6565	5
Deoxyadenosine (*N*-PAC)-DMTr-3'-CEP	ANP-6661	5
Deoxyadenosine (*N*-PAC)-MMTr-3'-CEP	ANP-5116	5
Deoxyadenosine (*N*-tBPAC)-DMTr-3'-CEP	ANP-5569	5
Deoxycytidine (*N*-PAC)-DMTr-3'-CEP	ANP-6662	5
Deoxyguanosine (*N*-DMF)-DMTr-3'-CEP	ANP-6769	5
Deoxyguanosine (*N*-iPr-PAC)-DMTr-3'-CEP	ANP-5568	5
Deoxyguanosine (*N*-PAC)-MMTr-3'-CEP	ANP-5118	5
Deoxyguanosine (*N*-phenyl acetyl)-DMTr-3'-CEP	ANP-5518	5
Deoxyguanosine (*N*-tBPAC)-DMTr-3'-CEP	ANP-5668	5
Deoxyguanosine (*N*-tBPAC)-MMTr-3'-CEP	ANP-5117	5
Thymidine-DMTr-3'-CEP	ANP-5554	5
(3)-Fast base protection (DNA Synthesis)		
Deoxyadenosine (*N*-PAC)-DMTr-3'-CEP	ANP-6661	7
Deoxycytidine (*N*-Ac)-DMTr-3'-CEP	ANP-5560	7
Deoxyguanosine (*N*-tBPAC)-DMTr-3'-CEP	ANP-5668	7
Thymidine-DMTr-3'-CEP	ANP-5554	7
(4)-Base unprotected Phosphoramidites (DNA Synthesis)		
Deoxyadenosine-DMTr-3'-CEP	ANP-7771	7
Deoxycytidine-DMTr-3'-CEP	ANP-7772	7
Deoxyguanosine-DMTr-3'-CEP	ANP-7773	7
(5)-5'-*O*-Levulinyl Phosphoramidites (DNA Synthesis)		
5'-O-Levulinyl-deoxyadenosine (*N*-Bz)-3'-CEP	ANP-5001	12
5'-O-Levulinyl-deoxycytidine (*N*-Bz)-3'-CEP	ANP-5002	12
5'-O-Levulinyl-deoxyguanosine (*N*-iBu)-3'-CEP	ANP-5003	12
5'-O-Levulinyl-Thymidine-3'-CEP	ANP-5004	12
B: Supports		
(1)-3'-CPG (std base protection) (DNA Synthesis)		
Deoxyadenosine (*N*-Bz)-DMTr-3'-lcaa CPG	N-5101-05/10/20	4
Deoxycytidine (*N*-Ac)-DMTr-3'-lcaa CPG	N-5212-05/10/20	4

INDEX-1: Common Name

DNA Synthesis

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DNA Synthesis

INDEX-1: Common Name

DNA Synthesis

Product Name	Catalog#	Page#
P-Methyl-deoxyguanosine (*N*-tBPAC)-MMTr-3'-CEP	ANP-5537	107
P-Methyl-deoxyguanosine (*N*-tBPAC)-DMTr-3'-CEP	ANP-5533	107
G: Methyl Phosphoramidites (DNA Synthesis)		
P-*O*-Methyl-deoxyadenosine (*N*-Bz)-DMTr-3'-CEP	ANP-3761	8
P-*O*-Methyl-deoxyadenosine (*N*-Bz)-MMTr-3'-CEP	ANP-3766	8
P-*O*-Methyl-deoxycytidine (*N*-Ac)-DMTr-3'-CEP	ANP-3769	8
P-*O*-Methyl-deoxycytidine (*N*-Bz)-DMTr-3'-CEP	ANP-3762	8
P-*O*-Methyl-deoxyguanosine (*N*-DMA)-DMTr-3'-CEP	ANP-3768	8
P-*O*-Methyl-deoxyguanosine (*N*-iBu)-DMTr-3'-CEP	ANP-3763	8
P-*O*-Methyl-deoxyguanosine (*N*-iBu)-MMTr-3'-CEP	ANP-3767	8
P-*O*-Methyl-thymidine-DMTr-3'-CEP	ANP-3764	8
DNA:Duplex Stabilization		
A: DNA Bases affecting Duplex Stability		
5-Methyl-deoxycytidine (*N*-Bz)-DMTr-3'-CEP	ANP-6421	28
5-Methyl-deoxycytidine (*N*-Bz)-DMTr-3'-Icaa CPG	N-1353-05/10/20	28
5-Methyl-deoxycytidine (*N*-DMF)-DMTr-3'-CEP	ANP-6422	28
5-Methyl-deoxycytidine (*N*-DMF)-DMTr-3'-Icaa CPG	N-1355-05/10/20	28
DNA:PCR/Sequence Utility		
A: DNA Chain Terminator		
2',3'-Dideoxyadenosine (*N*-Bz)-DMTr-5'-CEP	DDN-7051	48
2',3'-Dideoxyadenosine (*N*-Bz)-DMTr-*N*-succinyl-Icaa CPG	N-7368-05	48
2',3'-Dideoxycytidine (*N*-Bz)-DMTr-5'-CEP	DDN-7052	48
2',3'-Dideoxycytidine (*N*-Bz)-DMTr-*N*-succinyl-Icaa CPG	N-7369-05	48
2',3'-Dideoxyguanosine (*N*-iBu)-DMTr-5'-CEP	DDN-7053	48
2',3'-Dideoxythymidine-DMTr-5'-CEP	DDN-7054	48
2'-*O*-Trifluoroacetamidopropyl-deoxycytidine (*N*-Bz)-DMTr-3'-CEP	ANP-7116	31
2'-*O*-Trifluoroacetamidopropyl-deoxyuridine-DMTr-3'-CEP	ANP-7115	31
3'-Amino(MMTr)-thymidine-5'-CEP	ANP-8454	31
3'-Amino(TFA)- deoxycytidine (*N*-Bz)-5'-CEP	ANP-1242	31
3'-Amino(TFA)-deoxyuridine-5'-CEP	ANP-1245	31
5'-Amino(MMTr)-Thymidine-3'-CEP	ANP-9402	31
5'-Amino-thymidine 3'-Icaa CPG	N-9506-05/10	31
5'-*O*-Methyl Oligonucleotides		
5'-*O*-Methyl-deoxyadenosine (*N*-Bz)-3'-CEP	ANP-5511	49
5'-*O*-Methyl-deoxycytidine (*N*-Bz)-3'-CEP	ANP-5512	49
5'-*O*-Methyl-deoxyguanosine (*N*-iBu)-3'-CEP	ANP-5513	49
5'-*O*-Methyl-thymidine-DMTr-3'-CEP	ANP-5514	49
B: DNA Duplex Effect		
Deoxyinosine-DMTr-3'-CEP	ANP-6411	28
Deoxyinosine-DMTr-3'-Icaa CPG	N-5108-05/10/20	28
Deoxynebularine (Deoxypurine-DMTr-3'-CEP)	ANP-7601	42
Deoxynebularine-3'-Icaa CPG; Deoxypurine-DMTr-3'-Icaa CPG	N-9503-05/10	42
Deoxyuridine-DMTr-3'-CEP	ANP-6131	28
Deoxyuridine-DMTr-3'-Icaa CPG	N-5107-05/10/20	28
Iso-deoxycytidine (*N*-DBF)-DMTr-3'-CEP	ANP-4269	43

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INDEX-1: Common Name

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DNA Synthesis / RNA Synthesis

Product Name	Catalog#	Page#
Empty Columns & Filters-DNA Synthesis		
A: Empty Columns & Filters		
Empty Column, Aluminium Caps, ABI 392/394	E-1007-AB30	18
Empty Column, Aluminium Caps, ABI 392/394	E-1007-15-AB30	18
Empty Synthesis Column, Aluminium Caps, Expedite Style	E-1007-02-EX	18
Empty Synthesis Column, Aluminium Caps, Expedite Style	E-1007-10-EX	18
Empty Synthesis Column, Aluminium Caps, Expedite Style	E-1007-100-EX	18
Empty Synthesis Column, mermade style,	E-1007-AB39	18
Replacement filters	EPC-1008	18
DNA purification		
B: DNA purification Barrels		
Barrel-4 ml	CSS-3940-S	54
Barrel-4 ml	CSS-3940-M	54
Barrel-4 ml	CSS-3940-L	54
Barrel-8 ml	CSS-3960-S	54
Barrel-8 ml	CSS-3960-M	54
Barrel-8 ml	CSS-3960-L	54
C: DNA purification Cartridges		
Cartridge-L	CSS-3920-L	54
Cartridge-M	CSS-3920-M	54
Cartridge-S	CSS-3920-S	54
D: DNA purification Plates		
DNA Purification, 96 Well Collection Plate (Pack of 12)	GS-3280	51
DNA Purification, 96 Well Oligonucleotide Synthesis plate	GS-8361	51
DNA Purification, Puri-Pak Plate™ (Not Shown)	GS-1154	51
DNA Purification, 96 Well Collection Plate (1 Plate)	GS-3280	51
DNA Purification, Genesys Manifold for 96-well Format GeneSys-1	GS-8366	51
DNA Purification, Genesys-24 (Not Shown)	GS-1158	51
DNA Purification, Puri-Pak Plate™	GS-3249	51
E: DNA purification Traps		
Drying Traps, Extra Large	DMT-1972	52
Drying Traps, Large	DMT-1973	52
Drying Traps, Medium	DMT-1974	52
Drying Traps, Small	DMT-1975	52
RNA Synthesis		
A: CE Phosphoramidites: TBDMS Protected (RNA synthesis)		
(1)-TBDMS Protected (RNA synthesis)		
Adenosine (*N*-Ac)-DMTr-3'-CEP	ANP-4546	57
Adenosine (*N*-Bz)-DMTr-3'-CEP	ANP-5671	57
Adenosine (N-Bz)-MMTr-3'-CEP	ANP-5676	57
Cytidine (*N*-Ac)-DMTr-3'-CEP	ANP-6676	57
Cytidine (*N*-Bz)-DMTr-3'-CEP	ANP-5672	57
Cytidine (*N*-Bz)-MMTr-3'-CEP	ANP-5685	57
Guanosine (*N*-Ac)-DMTr-3'-CEP	ANP-4547	57
Guanosine (*N*-DMF)-DMTr-3'-CEP	ANP-5678	57
Guanosine (*N*-iBu)-DMTr-3'-CEP	ANP-5673	57

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O-Alkyl & Antisenses Oligonucleotide Modifications

O-Alkyl & Antisenses Oligonucleotide Modifications/Combiclick Chemistry

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O-Alkyl & Antisenses Oligonucleotide Modifications/Combiclick Chemistry

Product Name	Catalog#	Page#
B: 2'-*O*-Propargyl RNA:Minor Phosphoramidites (Combiclick™ Chemistry)		
2'-*O*-Propargyl-abasic-DMTr-3'-CEP; 2'-*O*-Propargyl-1,1 dihydro-β-D-ribose-DMTr-3'-CEP	ANP-9782	114
2'-*O*-Propargyl-abasic-DMTr-3'-Icaa CPG	N-9784-05/10	114
Ara-Propargyl-inosine-DMTr-3'-CEP	ANP-9851	114
C: Supports-2'-*O*-Propargyl RNA 3'-CPG (Combiclick™ Chemistry)		
2'-*O*-Propargyl-adenosine (*N*-Bz) DMTr 3'-Icaa CPG	N-8910-05/10	112
2'-*O*-Propargyl-cytidine (*N*-Ac) DMTr 3'-Icaa CPG	N-8960-05/10	112
2'-*O*-Propargyl-cytidine (*N*-Bz) DMTr 3'-Icaa CPG	N-8920-05/10	112
2'-*O*-Propargyl-guanosine (*N*-iBu) DMTr 3'-Icaa CPG	N-8930-05/10	112
2'-*O*-Propargyl-inosine DMTr 3'-Icaa CPG	N-8970-05/10	112
2'-*O*-Propargyl-uridine DMTr 3'-Icaa CPG	N-8940-05/10	112
RNA:2'-O-Hexyne RNA Synthesis (Combiclick™ Chemistry)		
A: 2'-*O*-Hexyne RNA Phosphoramidites (Combiclick™ Chemistry)		
2'-*O*-Hexyne-inosine-DMTr-3'-CEP	ANP-9852	112
2'-*O*-Hexyne-1,1 dihydro-β-D-ribose-DMTr-3'-CEP	ANP-9781	112
RNA:3'-O-Alkyl RNA Synthesis		
A: 3'-*O*-Alkyl RNA phosphoramidites		
(1)-3'-*O*-Methyl-RNA Phosphoramidites (*O*-Alkyl & Antisenses Oligonucleotide Modifications)		
3'-*O*-Methyl-adenosine (*N*-Bz)-DMTr-2'-CEP	ANP-2901	102
3'-*O*-Methyl-cytidine (*N*-Ac)-DMTr-2'-CEP	ANP-2906	102
3'-*O*-Methyl-cytidine (*N*-Bz)-DMTr-2'-CEP	ANP-2902	102
3'-*O*-Methyl-guanosine (*N*-iBu)-DMTr-2'-CEP	ANP-2903	102
3'-*O*-Methyl-inosine-DMTr-2'-CEP	ANP-2905	102
3'-*O*-Methyl-thymidine-DMTr-2'-CEP	ANP-2907	102
3'-*O*-Methyl-uridine-DMTr-2'-CEP	ANP-2904	102
(2)-3'-*O*-Propargyl RNA Phosphoramidites (Combiclick™ Chemistry)		
3'-*O*-Propargy-cytidine (*N*-Ac)-DMTr-2'-CEP	ANP-9759	113
3'-*O*-Propargyl-adenosine (*N*-Bz)-DMTr-2'-CEP	ANP-9751	113
3'-*O*-Propargyl-cytidine (*N*-Bz)-DMTr-2'-CEP	ANP-9752	113
3'-*O*-Propargyl-guanosine (*N*-iBu)-DMTr-2'-CEP	ANP-9753	113
3'-*O*-Propargyl-uridine-DMTr-2'-CEP	ANP-9754	113
B:3'-O-Alkyl RNA Supports		
(1)-Supports:3'-*O*-ME-RNA 2'-CPG (*O*-Alkyl & Antisenses Oligonucleotide Modifications)		
3'-*O*-Methyl-adenosine (*N*-Bz)-DMTr-2'-Icaa CPG	N-8810-05/10	102
3'-*O*-Methyl-cytidine (*N*-Bz)-DMTr-2'-Icaa CPG	N-8811-05/10	102
3'-*O*-Methyl-guanosine (*N*-iBu)-DMTr-2'-Icaa CPG	N-8812-05/10	102
3'-*O*-Methyl-inosine-DMTr-2'-Icaa CPG	N-8814-05/10	102
3'-*O*-Methyl-uridine-DMTr-2'-Icaa CPG	N-8813-05/10	102
(2)-Supports:3'-*O*-Propargyl RNA 2'-CPG (Combiclick™ Chemistry)		
3'-*O*-Propargyl-adenosine (*N*-Bz)-DMTr-2'-Icaa CPG	N-9881-05/10	113
3'-*O*-Propargyl-cytidine (*N*-Ac)-DMTr-2'-Icaa CPG	N-9889-05/10	113
3'-*O*-Propargyl-cytidine (*N*-Bz)-DMTr-2'-Icaa CPG	N-9882-05/10	113
3'-*O*-Propargyl-guanosine (*N*-iBu)-DMTr-2'-Icaa CPG	N-9883-05/10	113
3'-*O*-Propargyl-uridine-DMTr-2'-Icaa CPG	N-9884-05/10	113

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RNA Synthesis

Product Name	Catalog#	Page#
P-*O*-Ethyl-adenosine (*N*-PAC)-DMTr-3'-CEP	ANP-4131	89
P-*O*-Ethyl-cytidine (*N*-PAC)-DMTr-3'-CEP	ANP-4132	89
P-*O*-Ethyl-guanosine (*N*-PAC)-DMTr-3'-CEP	ANP-4133	89
P-*O*-Ethyl-uridine-DMTr-3'-CEP	ANP-4134	89
Pseudo-uridine-DMTr-3'-CEP	ANP-8612	76
β-L-RNA-Spiegelmers		
β-L-Adenosine (*N*-Bz)-DMTr-3'-CEP	ANP-4841	88
β-L-Cytidine (*N*-Ac)-DMTr-3'-CEP	ANP-4846	88
β-L-Cytidine (*N*-Bz)-DMTr-3'-CEP	ANP-4842	88
β-L-Guanosine (*N*-iBu)-DMTr-3'-CEP	ANP-4843	88
β-L-Thymidine-DMTr-3'-CEP	ANP-4844	88
β-L-Uridine-DMTr-3'-CEP	ANP-4845	85
(2)Amino TFA Protected RNA Phosphoramidites		
2'-Amino(TFA)-cytidine (*N*-Bz)-DMTr-3'-CEP	ANP-5322	82
2-Amino-2'-Amino (TFA)-uridine-DMTr-3'-CEP	ANP-9403	82
5'-Amino (TFA)-cytidine (*N*-Ac)-3'-CEP	ANP-9405	82
(3)-Acetyl Protected RNA Phosphoramidites		
2',3'-Diacetyl-guanosine (*N*-iBu)-5'-CEP	ANP-6156	87
2',3'-Diacetyl-uridine-5'-CEP	ANP-6155	87
B: Supports-Minor-RNA-TBDMS Protected 3'-CPG		
(1)-TBDMS Protected RNA 3'-CPG		
2,2'-Anhydro-uridine-DMTr-3'-Icaa CPG	N-9810-05/10	74
2-Amino-adenosine-DMTr-3'-Icaa CPG	N-9040-05/10	81
2-Amino-purine-DMTr-3'-Icaa CPG	N-9070-05/10	81
2-One-pyridine-DMTr-3'-Icaa CPG; Zebularine CPG	N-9020-05/10	76
5-Bromo-cytidine (*N*-Bz)-DMTr-3'-Icaa CPG	N-9844-05/10	85
5-Bromo-uridine-DMTr-3'-Icaa CPG	N-9818-05/10	85
5-Fluoro-uridine-DMTr-3'-Icaa CPG	N-9832-05/10	85
5-Iodo-cytidine (*N*-Bz)-DMTr-3'-Icaa CPG	N-9893-05/10	85
5-Iodo-uridine-DMTr-3'-Icaa CPG	N-9809-05/10	85
5-Methyl-cytidine (*N*-Bz)-DMTr-3'-Icaa CPG	N-9822-05/10	74
7-Deaza-adenosine (*N*-Bz)-DMTr-3'-Icaa CPG; Tubercidin CPG	N-9897-05/10	83
7-Deaza-guanosine (*N*-iBu)-DMTr-3'-Icaa CPG	N-9895-05/10	83
8-Bromo-adenosine (*N*-DBF)-DMTr-3'-Icaa CPG	N-9812-05/10	85
8-Methyl-guanosine (*N*-iBu)-DMTr-3'-Icaa CPG	N-9909-05/10	73
Adenosine (*N*-Ac)-DMTr-3'-Icaa CPG	N-6681-05/10/20	58
Adenosine (*N*-Bz)-DMTr-3'-Icaa CPG	N-6101-05/10/20	58
Cytidine (*N*-Ac)-DMTr-3'-Icaa CPG	N-6106-05/10/20	58
Cytidine (*N*-Bz)-DMTr-3'-Icaa CPG	N-6102-05/10/20	58
Guanosine (*N*-iBu)-DMTr-3'-Icaa CPG	N-6103-05/10/20	58
Inosine-DMTr-3'-Icaa CPG	N-8370-05/10	74
Iso-Cytidine (*N*-DBF)-DMTr-3'-Icaa CPG	N-9712-05/10	86
Iso-Guanosine (*N*-DBF)-DMTr-3'-Icaa CPG	N-9827-05/10	86
N^3-Methyl-thymidine-DMTr-3'-Icaa CPG	N-9816-05/10	73

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Modifiers & Labelling/Nucleosides

Product Name	Catalog#	Page#
D: DNP Labelling		
DNP-TEG CEP	CLP-9907	132
DNP-TEG-lcaa-CPG	N-9127-05	132
Naphthyl Red phosphoramidite	CLP-6643	132
E: Rhodamine (Tamra) labelling		
5'-TAMRA CEP	CLP-9066	137
6-TAMRA Supports & Columns	N-2255-05	137
Cocktail for TAMRA	RN-8561	137
*N*4-6-TAMRA Cytidine-3'- lcaa CPG	N-2145-05	137
Rox Supports & Columns	N-2246-05	137
F: Dabcyl Labelling		
3'-Dabcyl CEP	CLP-1522	132
3'-Dabcyl CPG	N-9756-05/10	132
Dabcyl Succinyl diamido Polymeric Support	N-9756-PF	132
Dabsyl-dT CEP	CLP-9906	132
G: Cholesterol		
Cholesterol (Plant) TEG CEP	CLP-2795	131
Cholesterol (TEG) CEP (Will Generate DMT color)	CLP-2703	131
Cholesterol C4 lcaa CPG	N-9267-05	131
Cholesterol TEG lcaa CPG	N-9166-05	131
TEG Cholesterol (Tetra Ethylene Glycol) CEP	CLP-2704	131
TEG Cholesterol (Tetra Ethylene Glycol) Phosphonate TEG Cholesterol (Tetra Ethylene Glycol) -H- Phosphonate TEA Salt"	CLP-2705	131
H: Tocopherol		
(+)-a-Tocopherol-Phosphoramidite	CLP-2706	130
I: Carboxyl Generating reagents		
5'-Carboxyl Group Generating Reagent; Thymidine-Succinyl Hexamide CEP	CLP-2244	130
C-5 Carboxy Introducing Amidite; Deoxy Uridine 5-Methylacrylate CEP	CLP-2842	130
Hexane-6-Carboxyamido (p-benzaldehyde)- 1-ol CEP	CLP-2243	130
Undecanoic CEP	CLP-8146	130
J: Puromycin Labelling		
Puromycin-2'-Succinyl lcaa CPG	N-1971-05/10	76
Nucleoside		
Unprotected mononucleosides		
I-Unprotected deoxy mononucleosides		
A: Deoxy Nucleosides		
2'-β-D-Deoxyadenosine Monohydrate	DN-1001	140
2'-β-D-Deoxycytidine (Free Base)	DN-1002fb	140
2'-β-D-Deoxycytidine Monohydrate	DN-1002	140
2'-β-D-Deoxyguanosine Monohydrate	DN-1003	140
2'-β-D-Deoxyinosine	DN-4002	142
2'-β-D-Deoxyuridine	DN-6373	142
Thymidine Monohydrate	DN-1004	140
B: Dideoxy nucleosides		
2',3'-β-D-Dideoxyadenosine	DDN-1844	141
2',3'-β-D-Dideoxycytidine	DDN-1868	141

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Nucleosides

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Reagents for Nucleic acid Chemistry

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NHS ester/Monophosphate/Diphosphate

Product Name	Catalog#	Page#
NHS esters		
A: Fluorescein		
5-Fluorescein-Dipivalate-NHS Ester (5-FAM Dipivalate NHS Ester)"	RN-9652	182
5-Fluorescein-NHS Ester (5-FAM NHS Este"	RN-9662	182
6-Fluorescein-Dipivalate-NHS Ester (6-FAM Dipivalate NHS Ester)"	RN-9651	182
6-Fluorescein-NHS Ester (6-FAM NHS Ester)"	RN-9661	182
B: Biotin		
Biotin-Amido-Caproate-*N*-Hydroxy	RN-1449	183
Biotin-Ester (*N*-Hydroxysuccinimide)	RN-1500	183
Biotin-X-Y-SSE (Biotinamidohexanoyl-amidobutanoyl Succinimidyl ester)	RN-1508	183
Monophosphates		
A: Deoxy *N*-Alkylated monophosphates		
N^1-Methyl-deoxyadenosine-5'-monophosphate	NMP-8431	186
N^3-Methyl-deoxycytidine-5'-monophosphate	NMP-8432	186
N^6-Methyl-deoxyadenosine-5'-monophosphate	NMP-8433	186
B: Etheno deoxy & ribo monophosphates		
Etheno-deoxycytidine-5'-monophosphate	NMP-8434	186
Etheno-ribocytidine-5'-monophosphate	NMP-8317	185
C: 7-Deaza deoxymonophosphate		
7-Deaza-deoxyadenosine-5'-monophosphate	NMP-8435	186
D: 2'-*O*-Methyl-ribo monophosphates		
2'-*O*-Methyl-adenosine (N^6-Benzyl)-5'-monophosphate	NMP-8313	184
2'-*O*-Methyl-cytidine-5'-monophosphate	NMP-8311	184
2'-*O*-Methyl-guanosine-5'-monophosphate	NMP-8312	184
E: β-L-ribo monophosphates		
β-L-Adenosine-5'-monophosphate sodium salt	NMP-8314	184
β-L-Uridine-5'-monophosphate sodium salt	NMP-8315	184
F: 3'-Substituted-ribo monophosphates		
3'-Amino-guanosine-5'-monophosphate	NMP-8316	185
3'-Methyl-guanosine-5'-monophosphate	NMP-8319	185
G: ribo monophosphate		
Thymidine-5'-monophosphate	NMP-8310	185
H: Iso ribo monophosphate		
Iso-guanosine (*N*-iBu)-5'-monophosphate	NMP-8318	185
Diphosphates		
A: 2'-*O*-Methyl ribo 3',5'-diphosphates		
2'-*O*-Methyl-adenosine-3',5'-diphosphate disodium salt	NDP-7311	187
2'-*O*-Methyl-cytidine-3',5'-diphosphate disodium salt	NDP-7312	187
2'-*O*-Methyl-guanosine-3',5'-diphosphate disodium salt	NDP-7313	187
2'-*O*-Methyl-uridine-3',5'-diphosphate disodium salt	NDP-7314	187
B: Ribo U 5'-diphoosphates		
Uridine-5'-diphosphate	NDP-7316	187
Uridine-5'-diphosphate disodium salt	NDP-7315	187

Triphosphate

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INDEX-2: IUPAC Name, A

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INDEX-2: IUPAC Name, B

Product Name	Catalog#	Page#
8-Bromo-adenosine	RP-1214	151
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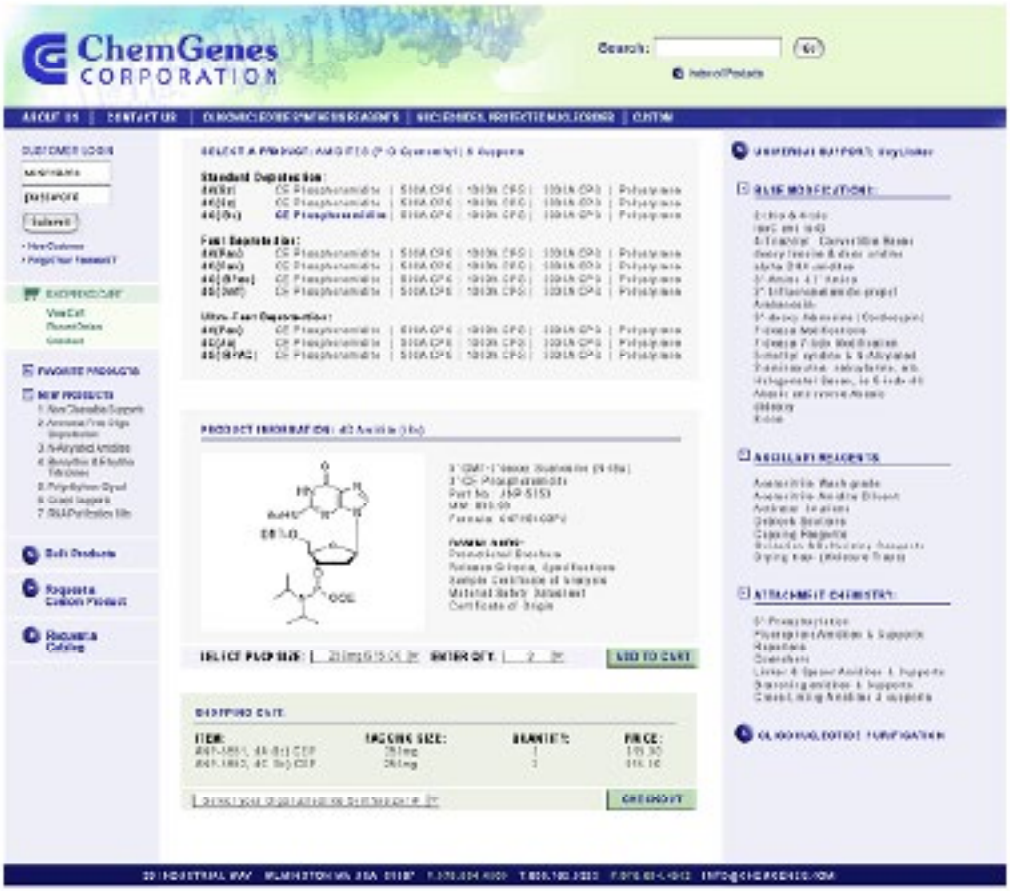

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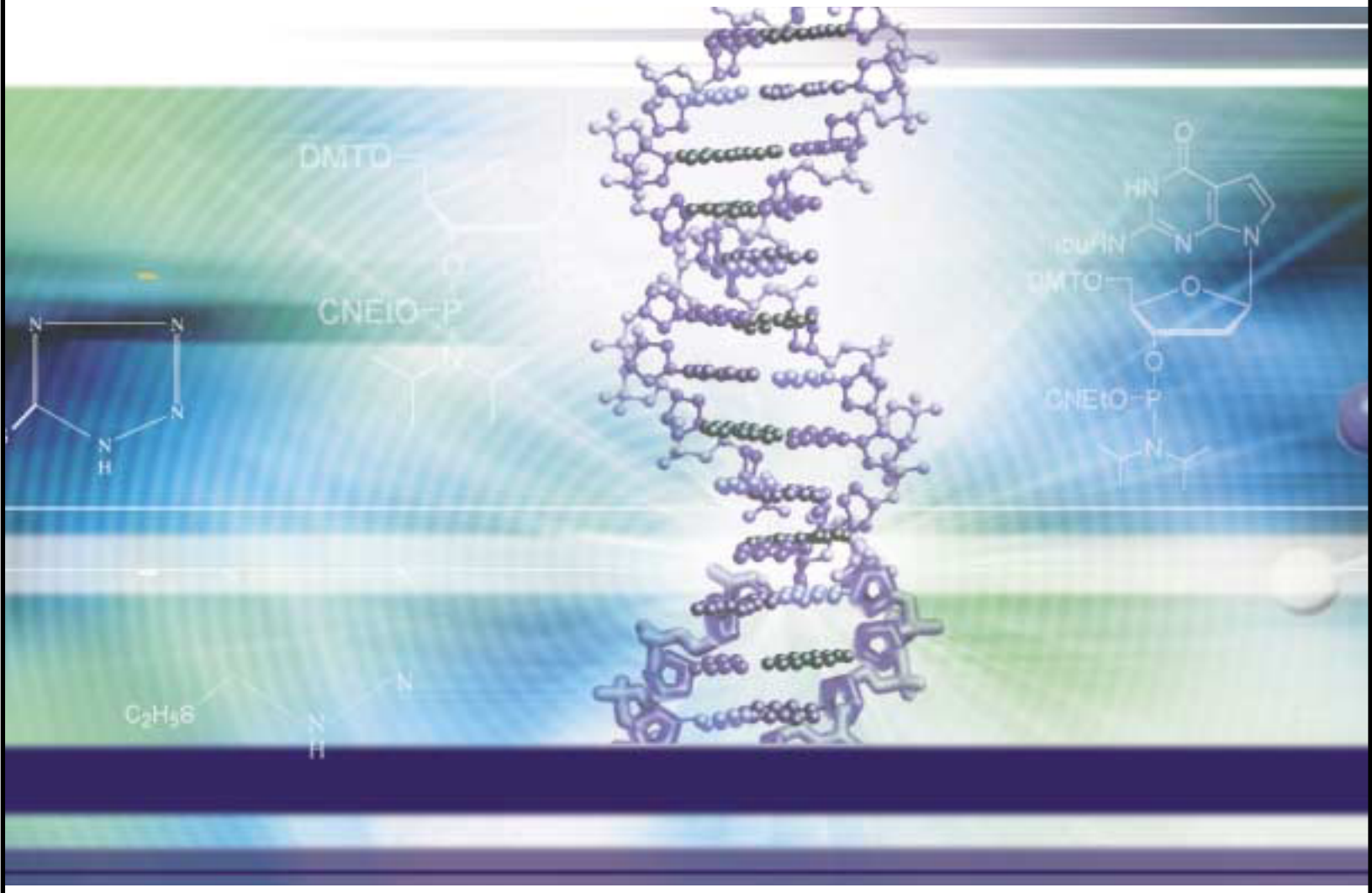

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