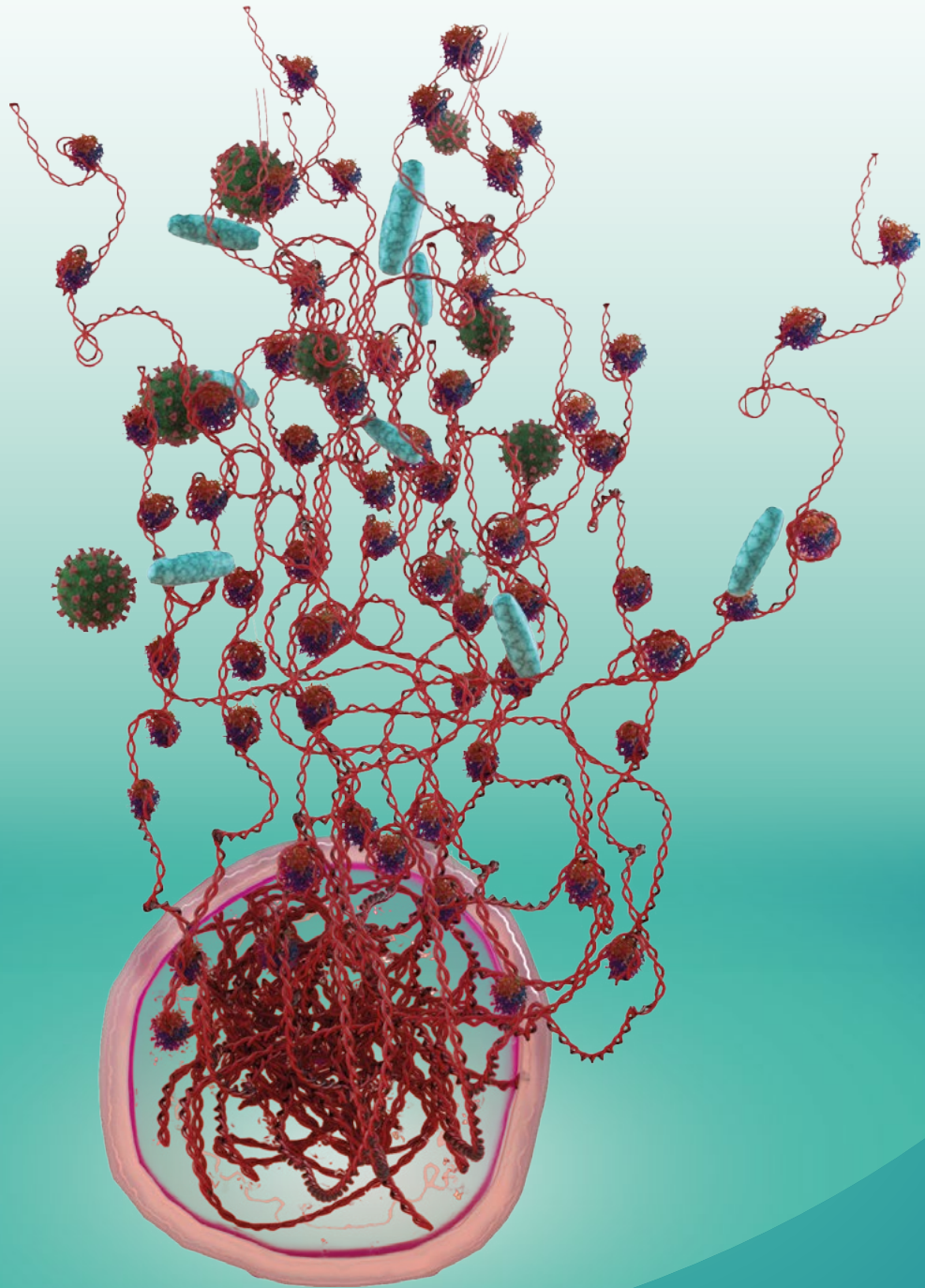
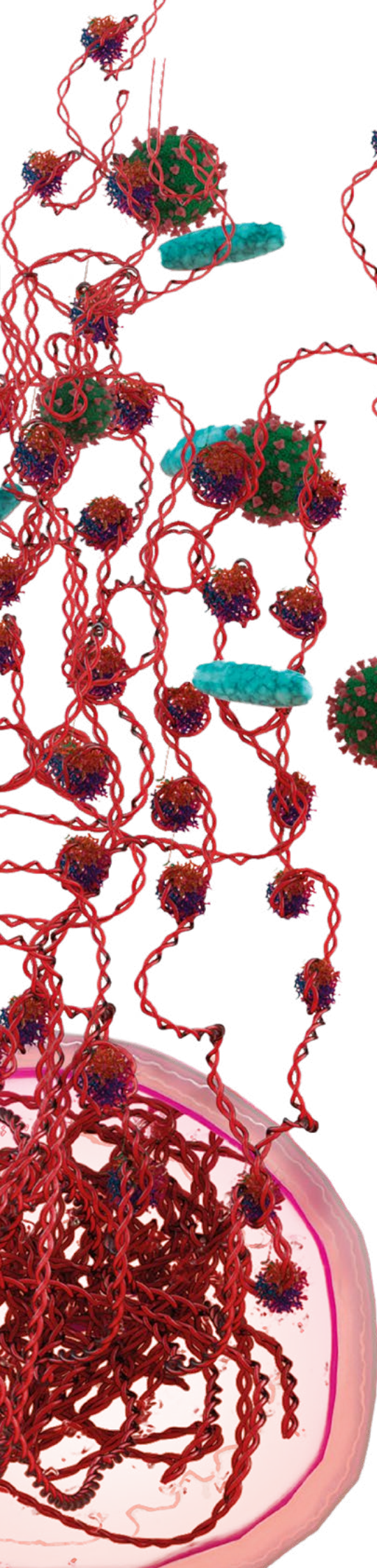


Introducing
nu·q
nets

Monitoring the immune system to save lives.



Volition



Understanding NETs and NETosis.

As part of our normal response to a pathogen infection, neutrophils (the main white blood cell) produce a web of decondensed chromatin to trap and kill bacteria, fungi and viruses. These are called neutrophil extracellular traps (NETs).

If the cell dies when NETs are released, this unique form of cell death is called NETosis. NETs released into the blood stream, contain nucleosomes, which can be detected by our Nu.Q®NETs assay – the only analytically validated assay to quantify the level of NETs.

Although NETs play a critical role in our normal immune response, some people have elevated levels of NETs which can lead to tissue damage and, in severe cases, sepsis, organ failure, and death.

Rapid detection of sepsis is vital.



The **rapid identification** and treatment of sepsis significantly improves patient outcomes and **reduces complications and long-term morbidity.**⁵



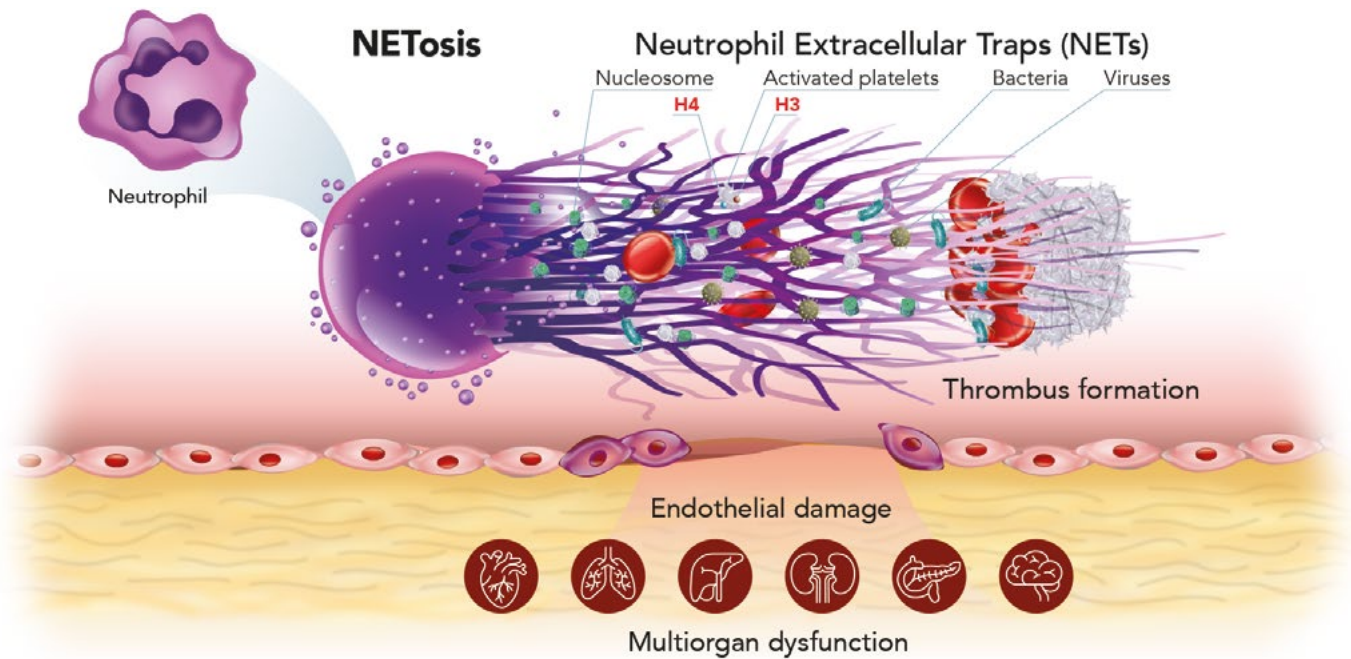
Risk of death
7.6% every hour of delay⁶

Current methods to detect sepsis are complex and slow (SOFA and APACHE II)

5. Singer et al. (2016). The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). JAMA, 315(8), 801-810.

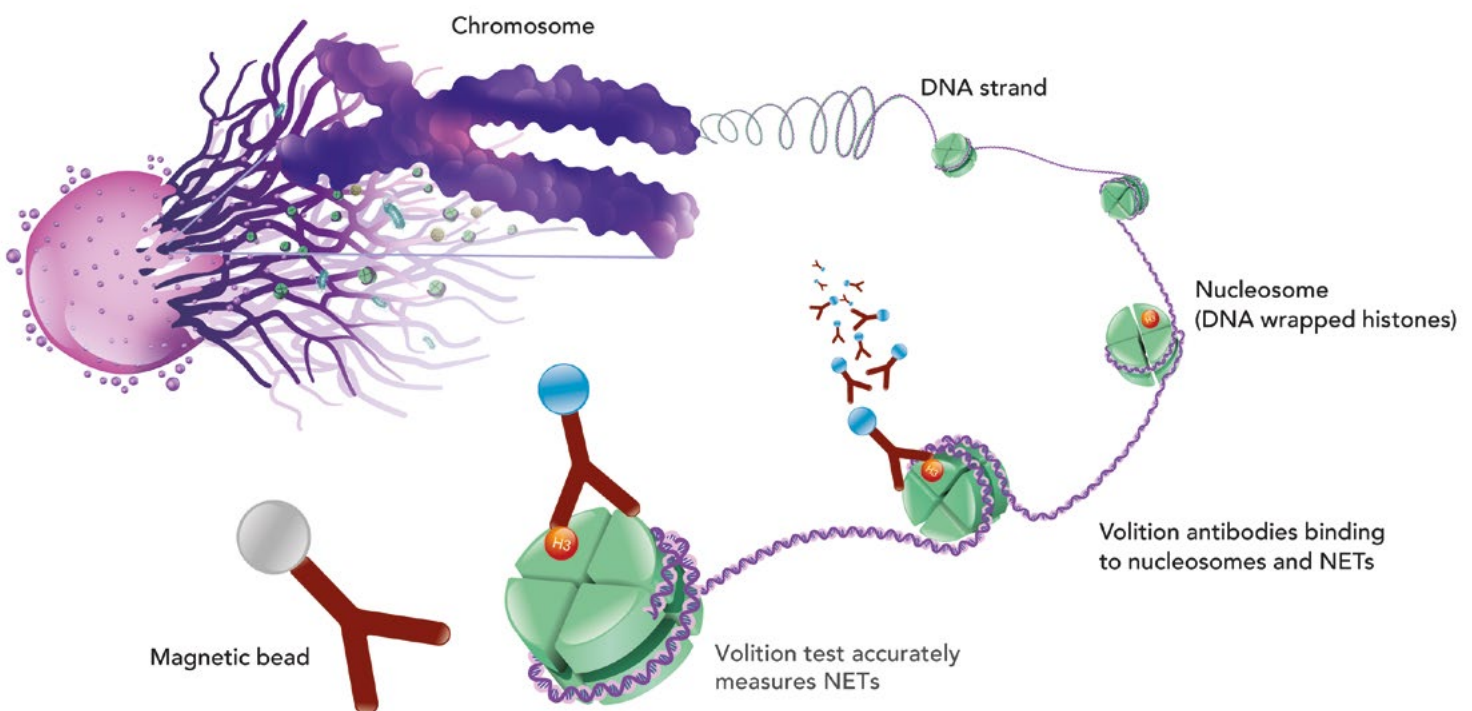
6. Kumar et al. (2006). Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. Critical care medicine, 34(6), 1589-1596.

The role of NETs in endothelial damage and the formation of microthrombi and resultant multiorgan failure.



Adapted from Henry Ng. Arteriosclerosis, Thrombosis, and Vascular Biology. Circulating Markers of Neutrophil Extracellular Traps Are of Prognostic Value in Patients With COVID-19, Volume: 41, Issue: 2, Pages: 988-994, DOI: (10.1161/ATVBAHA.120.315267) and Vélez-Páez JL, Rueda-Barragán FE, Dueñas-Andrade S, Rodríguez-Morales A, Kyriakidis NC. The role of platelets and neutrophil extracellular traps (NETs) in sepsis: A comprehensive literature review. *Microbes Infect Chemother.* 2023; 3: e1595

Chromosome and NETs are made of nucleosomes.



Nu.Q[®] Discover H3.1 Research Use Only Assay.



Convenience:

- cf-nucleosome quantification technology run manually on ELISA sandwich immunoassay platform.
- No assay development required, assay ready to run.



Sensitivity & Specificity:

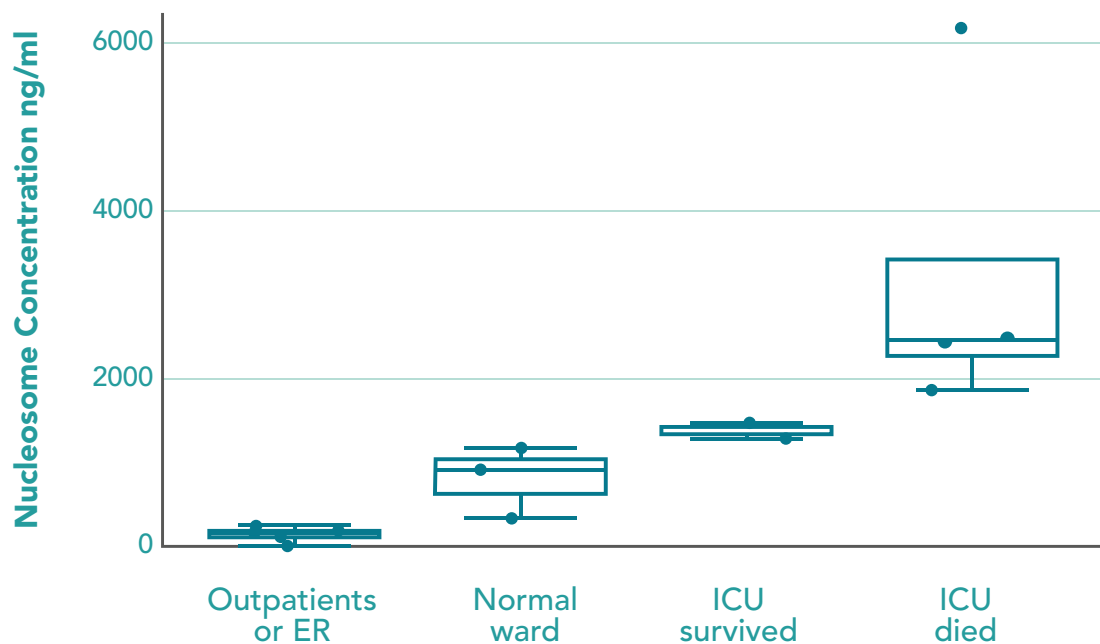
- Low sample volumes. Use with EDTA plasma, cell culture extract, supernatant.
- Detection antibody recognizes a nucleosome specific epitope ensuring detection of only intact nucleosomes.
- Typical reproducibility:
 - Precision for Nu.Q[®] H3.1 intra-run less than 15%CV.
 - Precision for Nu.Q[®] H3.1 inter-run less than 20%CV.
- The reportable range of the Nu.Q[®] Discover H3.1 ELISA Assay - RUO is 22.7 ng/mL to 650 ng/mL.



Quality:

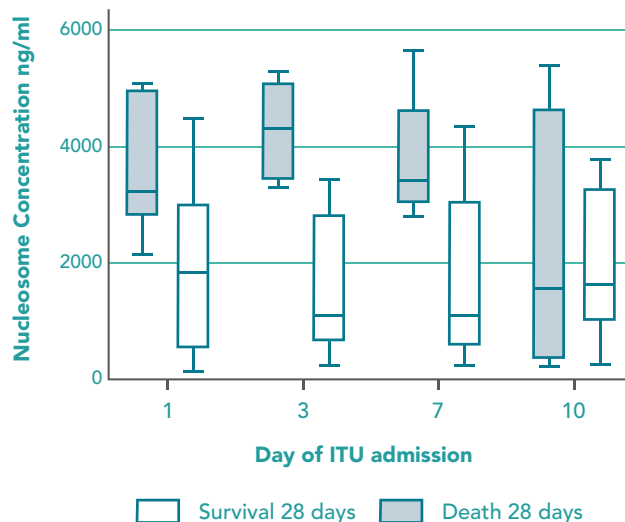
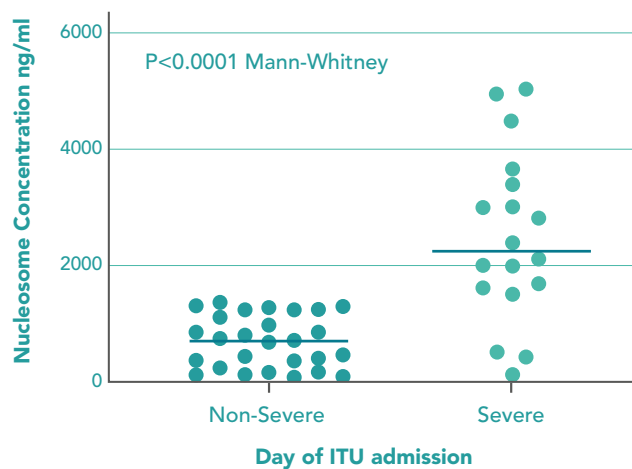
- Assay developed based on CLSI guidelines.
- Expert support for your research needs.

Elevated NETs are an indicator of a dysregulated inflammatory response¹.



Nu.Q[®] NETs on hospital admission are predictive of severity of COVID-19 sepsis².

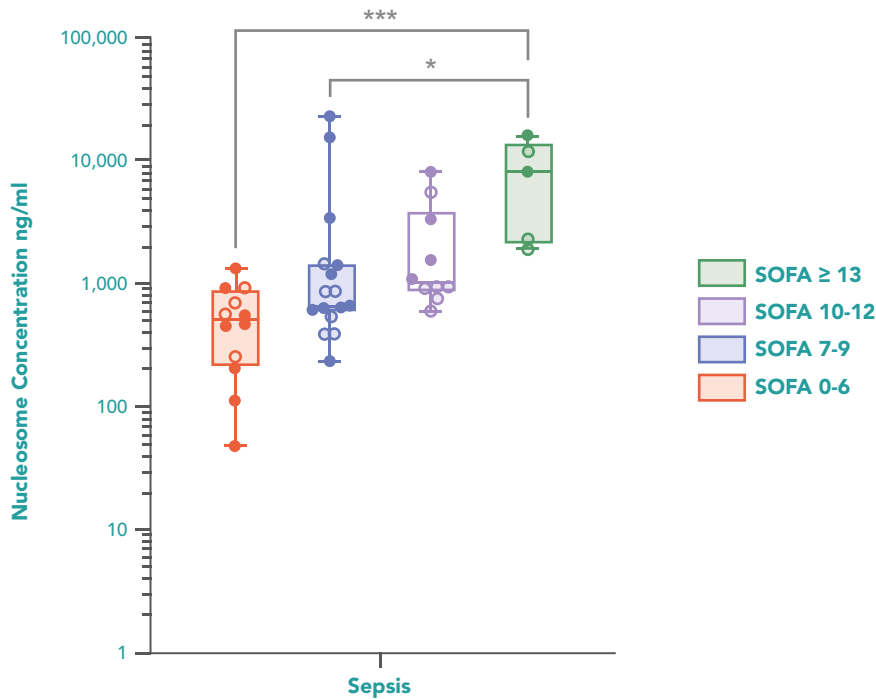
Plasma samples on admission, day 3, 7 and 10 were evaluated from 20 patients with severe COVID-19 **requiring organ support** (severe cohort) and compared with 28 samples from COVID-19 patients **requiring hospitalization, but not organ support** (non-severe cohort).



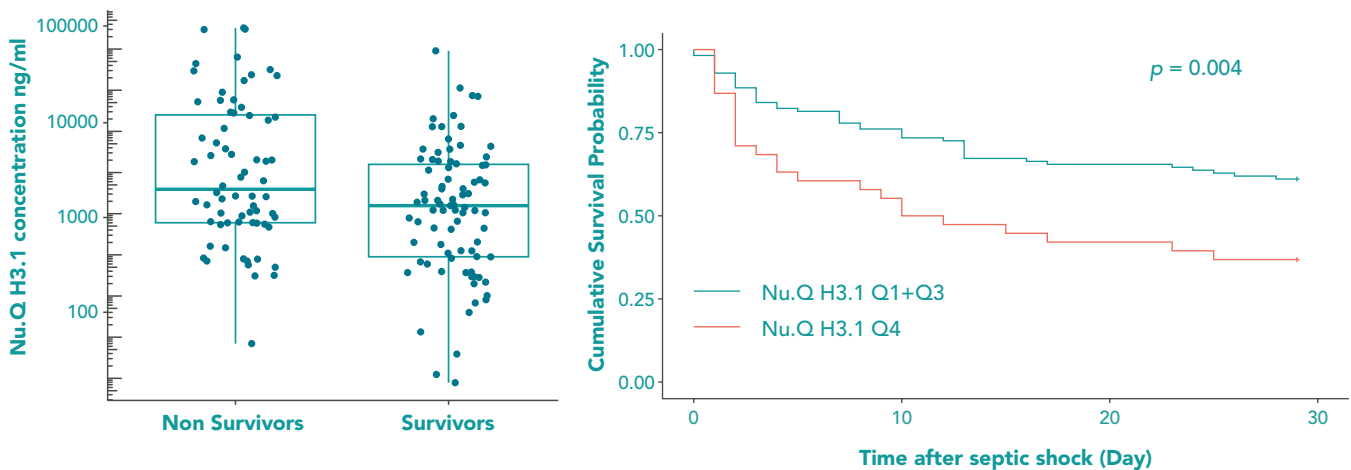
Illustrates H3.1 nucleosome levels (ng/ml) in non-severe versus severe COVID-19 patients and the group median.

Charts the median and range of values for H3.1 nucleosome levels (ng/ml) over the first 10 days of ITU admission in severe patients who survived versus those who died up to 28 days.

Nu.Q® NETs levels in ICU patients with sepsis correlates with SOFA score³.



Nu.Q® NETs associated with early mortality and 28-day morbidity⁴.



1. Cavalier et al. (2021). Circulating Nucleosomes as Potential Markers to Monitor COVID-19 Disease Projection. *Front. Mol. Biosci.* 8:600881. doi: 10.3389/fmolb.2021.600881
2. Rea C, et al. Circulating Nucleosome Immunoassay: Evaluating a Clinically-applicable Test to Risk Stratify COVID-19 and Target Anticoagulation [abstract]. *Res Pract Thromb Haemost.* 2021; 5 (Suppl 2).
3. Morimont et al. (2022). NETosis and nucleosome biomarkers in septic shock and critical COVID-19 patients: An observational study. *Biomolecules* 12:1038
4. Rahimi et al. Association of Significant Elevation of NETosis and Nucleosome Biomarkers measured by Volition Nu.Q® NETs assay with Mortality in Patients with Septic Shock [abstract]. In: *ESICM October 21-25, 2023; Milan, Italy.* Abstract number: 000966

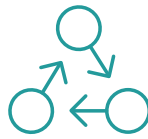
We are dedicated to revolutionizing the diagnosis and monitoring of life-altering disease by advancing the science of epigenetics.

Our mission is to save lives and improve outcomes for millions of people and animals worldwide.

Nu.Q® NETs Assay:



Simple, routine
blood test



Correlates with
SOFA³, APACHE II



The only analytically
validated assay to quantify
the level of NETs

Potential to:

Detect NETosis

Predict disease severity

Support risk stratification

Monitor disease progression

Get in touch for more information:



asknu.qnets@volition.com



<https://volition.com/nu-q-nets>

