



Expedite Decision Making with Expert Multiomic RNAscope™ Image Analysis Services

Our Professional Assay Services (PAS) offers end-to-end or *a la carte* services to support your clinical or pre-clinical studies. If you have generated your own RNAscope *in situ* hybridization (ISH) assay data, or have used PAS, our image analysis team can pick up where you left and accurately quantify and interpret your results. The team specializes in annotation and generation of quantitative, cell by cell, and custom data analysis for chromogenic and multiplex fluorescent images.

As the developers of the RNAscope technology, we have vast experience in quantifying cell-by-cell RNA expression within a defined region or the whole tissue.

Key Highlights

RNA Imaging Experts - Guaranteed Performance

Rely on RNAscope experts to obtain accurate and reliable results.

Work in Tandem & Save Time - Faster Path to Results

Accelerate your time to results with end-to-end RNAscope services from slide staining to image analysis.

Comprehensive Suite of Image Analysis Offerings - Customize Your Options

Access multiomic results from platforms including HALO®, QuPath, Visiopharm using secure online data sharing.

AI-Powered - Complex Image Analysis

Easily analyze a wide range of tissues from simple to highly complex, define regions of interest (ROI), obtain custom H-scores, and heat maps.

Custom Options for Data Analysis Based on Your Applications

Gene Therapy

- Visualize and spatially quantify the biodistribution of AAV vectors or small therapeutic RNAs.
- Measure the performance of your engineered cargo *in vivo* and analyze transgene expression with cell-specific marker genes in the target tissue.

Biomarker or Target Validation

- Quantify biomarker expression across a wide range of cells and tissues.
- Measure the upregulation or downregulation of biomarkers.

Neuroscience

- Spatially interrogate neuronal cell subtypes and networks.
- Easily visualize GPCR target genes, pain and ion channel receptors with high specificity.

Oncology

- Characterize biomarker expression in the context of the tumor microenvironment.
- Quantify change in cellular abundance, spatial localization, and activation including cytokine and chemokine expression.

Streamlined End-to-End Workflow for Quantitative Image Analysis

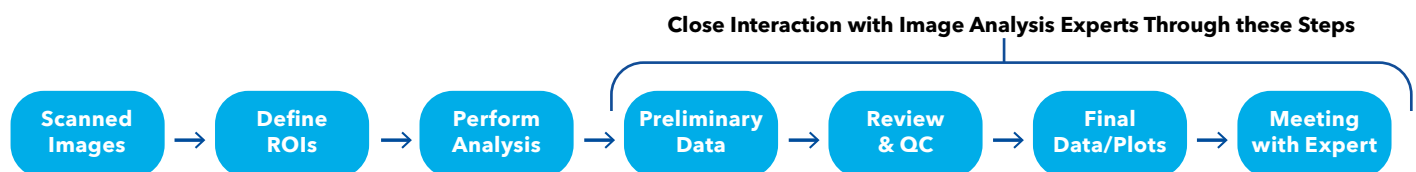


Fig. 1. All-Inclusive Workflow: Multiple steps in the image analysis workflow to ensure comprehensive data analysis.

Classify Cellular Subtypes Within Target Tissues

Image analysis is performed using HALO (Indica Labs) software, the digital pathology tool for quantitative gene expression analysis. HALO reports gene expression data on a cell-by-cell basis.

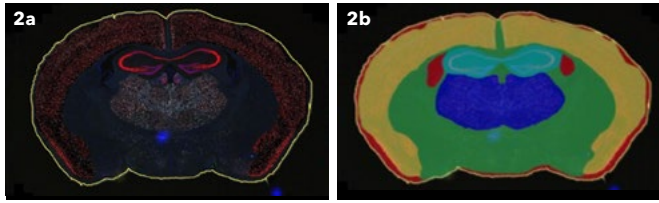
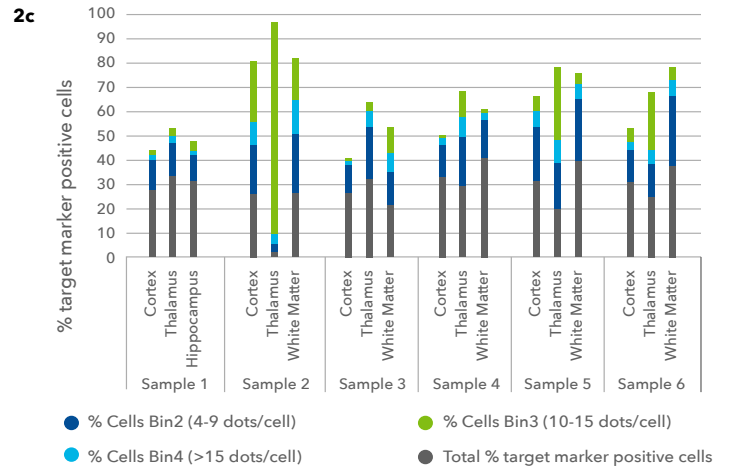


Fig 2. Definition of the Brain Tissue for Analysis. **2a.** Multiplex image of the coronal section of mouse brain. **2b.** Different regions of the brain were defined for analysis using HALO FISH Tissue Classifier. **2c.** Detailed data of cellular subtypes for each ROI.



Quantify Gene Expression within Selected Cells and Tissue Regions

HALO-FISH Tissue Classifier enables in marking the regions of interest across the tissue, for example: tumor vs. stroma without manually identifying each foci separately.

Using the HALO-FISH module, each multiplex fluorescent assay can be quantified, and spatial plots generated for any specific region of interest.

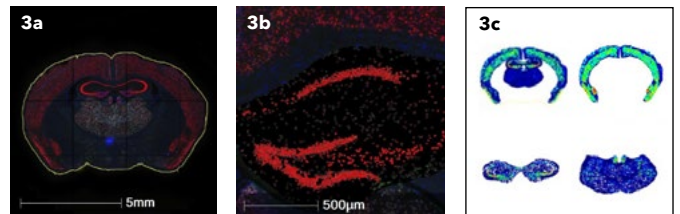


Fig 3. Quantify Expression from the Entire Section with HALO-FISH Module Image Processing Algorithm: **3a.** Software based quantification of the entire brain section with cell-by-cell data and spatial plot of each ROI. **3b.** Analysis of each ROI - data from the hippocampus. **3c.** Spatial plots showing target distribution and expression levels within each ROI.

Identify Spatial Biomarker Signatures

Proximity Analysis: Determine the number of objects or cells within a certain distance of another object or cell.

Nearest Neighbor Analysis: Determine the average distance and number of unique neighbors between any two cells or object populations.

Tumor Infiltration Module: Determine the number of objects or cells within a set range of an annotated region of interest.

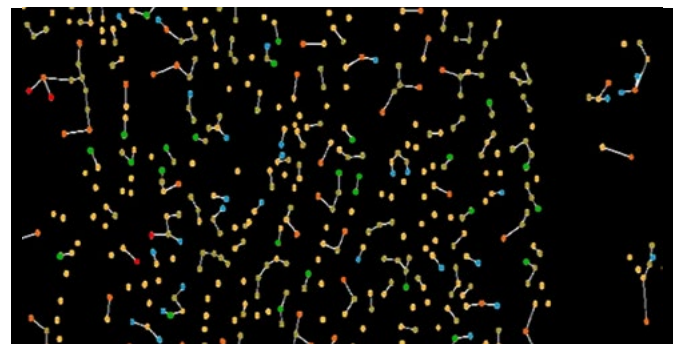


Fig 4. Spatial Signatures for In-depth Analysis: Plots showing proximity analysis within the TME. ● CD8+ cells (>12 micron); ● CD8+ cells (<12 micron); ● Tumor cells (Pan-CK positive).



Request a Free Consultation from
Digital Image Analysis Services

Need to analyze your images fast? Outsource your study to the experts and obtain comprehensive high quality data!

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