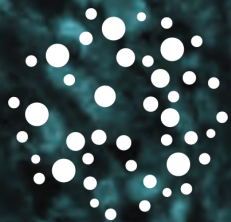


**FOR MORE INFORMATION, PLEASE
CONTACT YOUR AKOYA SALES
REPRESENTATIVE.**



AKOYA
BIOSCIENCES®

indica labs
informed pathology

2469 Corrales Road, Bldg A-3 • Corrales, NM 87048
+1 (505) 492-0979 • www.indicalab.com



**A CUTTING-EDGE IMAGE ANALYSIS
PLATFORM FOR DIGITAL PATHOLOGY**



With uncompromising ease-of-use, powerful analytic capabilities, and fast processing speeds available for digital pathology, HALO™ helps researchers achieve quality image analysis in the shortest time possible.

WWW.INDICALAB.COM

IMAGE ANALYSIS SIMPLIFIED

Spend less time learning software and more time analyzing data. HALO's analysis tuning is fast and easy for experts and novices alike, without sacrificing data quality. No need to "build" analysis algorithms from scratch. HALO's flexible, purpose-built modules provide quick, quantitative results in oncology, neuroscience, metabolism, toxicological pathology, and more.



WWW.INDICALAB.COM

RAPIDLY ANNOTATE SLIDES

Do you dread annotating digital slides using your current system? Cut annotation time in half with HALO's intuitive, flexible annotation tools. Draw free-hand or use the magnet pen tool to automatically 'snap' annotations to your tissues. Easily redraw, amend, move, rotate or copy-paste existing annotations. Better still, teach the classifier module to automatically select tissues of interest for analysis across all images in a study.



WWW.INDICALAB.COM



ACCELERATE YOUR ANALYSIS

Digital slides are large and bog down conventional analysis systems. HALO's parallel processing technology and optimized algorithms yield up to 4 times the analysis rate of competitive solutions using the same standard hardware. Organizations with greater throughput demands can couple HALO with analysis clusters or Hyper-Cluster.



WWW.INDICALAB.COM

Studies

TMA

Annotations

Classifiers

Analysis

Results

8/16/2016 8:12:36 AM - CytoNuclear [field of view]

Result Actions

% Stain 1 Positive Cells

35.9223

% Stain 1 0+ Cells

64.0777

% Stain 1 1+ Cells

0.970874

% Stain 1 2+ Cells

6.79612

% Stain 1 3+ Cells

28.1553

% Stain 2 Positive Cells

66.0194

% Stain 2 0+ Cells

33.9806

% Stain 2 1+ Cells

21.3592

% Stain 2 2+ Cells

43.6893

% Stain 2 3+ Cells

0.970874

% Dual Positive Cells

1.94175

% Dual Negative Cells

0.

Avg Stain 1 Nuclear OD

0.209967

Avg Stain 2 Nuclear OD

0.11562

Avg Stain 1 Cytoplasmic OD

4.89367e-002

Avg Stain 2 Cytoplasmic OD

0.16539

HALO Stain 2 Cell Bins

Object Actions

4 Object(s) Selected

Stain 1 Classification	Stain 1 Nuclear OD	Stain 1 Cytoplasm OD	Stain 2 Classification	Stain 2 Nuclear OD	Stain 2 Cytoplasm OD
2	0.302737	0.0700805	0	0.0354724	
3	0.69897	0.0720863	0	0.0700805	
3	0.574031	0.0905697	0	0.0486052	
3	0.410905	0.0720863	0	0.0373242	
3	0.6072	0.0582354	2	0.0926728	
3	0.690537	0.0700805	0	0.0582354	
2	0.242187	0.0822577	0	0.0410521	
3	0.520049	0.0562921	2	0.0947864	
121	0.0680838	0	0	0.0562921	
89	0.0601871	0	0	0.0621479	
01	0.0621479	0	0	0.0429282	
21	0.101189	0	0	0.0486052	

HALO

✕

✓ [Stain 1 Classification] <> '0'

Edit Filter

EASILY EXPLORE CELLULAR DATA

HALO reports morphological and multiplexed expression data on a cell-by-cell basis across entire tissue sections and maintains an interactive link between cell data and cell image. Click on any cell in the image and immediately see analysis outputs for that specific cell. Sorting and filtering capabilities allow the user to mine millions of cells while visually assessing corresponding cell populations. For example, sort cells according to biomarker intensity and immediately locate cells with highest intensity in the image. Just imagine the endless possibilities.

WWW.INDICALAB.COM



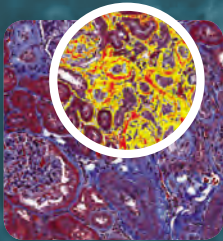
GROW WITH HALO

HALO offers a modular platform that can expand with your needs. Start with a few modules, and add more as your needs change. Use HALO on a single workstation or ramp up to a server-based license for your entire group. HALO is flexible enough for any budget.



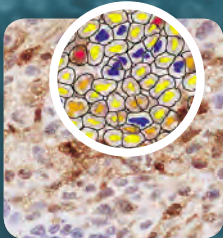
WWW.INDICALAB.COM

GENERAL BRIGHTFIELD APPLICATIONS



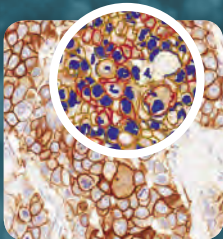
AREA QUANTIFICATION

Measure positive stain area and optical density for up to three stains, categorize pixels according to stain density (negative, weak, moderate, or strong positive), and measure percentage colocalization of stains. **Included free with any HALO bundle.**



SINGLE & DUAL STAIN IHC

Measure cellular positivity for one or two IHC stains, measure stain localization within subcellular compartments, and categorize each cell according to stain optical density (negative, weak, moderate, or strong positive) and co-expression of stains on a per cell basis.



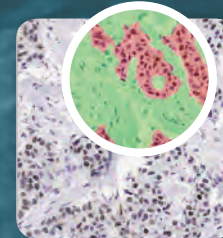
MEMBRANE IHC

Quantify intensity of membrane stains on a per cell basis and categorize cells according to stain optical density (negative, weak, moderate, or strong positive).



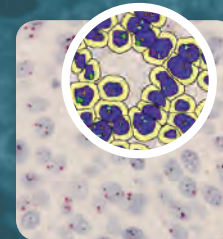
OBJECT QUANTIFICATION

Count microvessels and other macro-cellular objects. Measure one or two differently stained objects in a single tissue, quantify object area, optical density, and colocalization of object(s).



TISSUE CLASSIFICATION

Separate tissues classes, such as tumor and stroma, across whole slides using a learn-by-example approach. Can be used in conjunction with all other modules to select specific tissue classes for further analysis. **Available for both brightfield and fluorescent applications.**



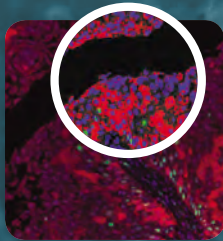
ISH QUANTIFICATION

Analyze CISH, SISH, RNA ISH, or virtually any type of 'spot' within the nucleus and/or cytoplasm. Quantify one or two probes and report number of probe signals per unit area or per cell.



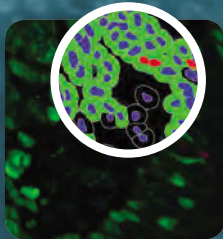
WWW.INDICALAB.COM

GENERAL FLUORESCENCE APPLICATIONS



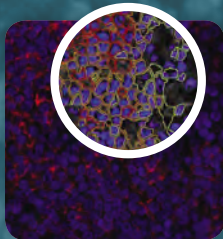
AREA QUANTIFICATION FL

Measure positive dye area and intensity for up to three dyes, categorize pixels according to stain intensity (negative, weak, moderate, or strong positive), and measure percentage colocalization of dyes. **Included free with any HALO bundle.**



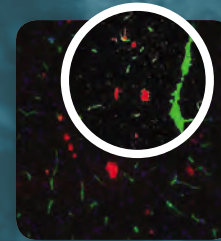
SINGLE & MULTIPLEXED IF

Measure cellular positivity for up to three fluorescently-labeled cytonuclear markers. Measure localization within sub-cellular compartments, categorize cells according to stain intensity (negative, weak, moderate, or strong positive), and measure co-expression of biomarkers on a per cell basis.



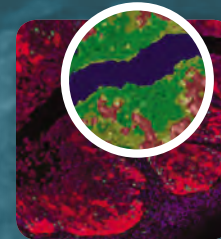
MEMBRANE IF

Measure intensity of fluorescently-labeled membrane markers on a per cell basis and categorize cells according to intensity (negative, weak, moderate, or strong positive).



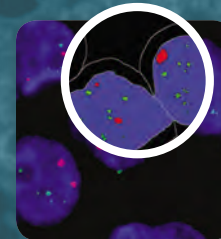
OBJECT QUANTIFICATION IF

Count microvessels and other macro-cellular objects. Measure one or two objects stained with different fluorophores, quantify object area, intensity, and colocalization.



TISSUE CLASSIFICATION

Separate tissue classes, such as tumor and stroma, across whole slides using a learn-by-example approach. Can be used in conjunction with all other modules to select specific tissue classes for further analysis. **Available for both brightfield and fluorescent applications.**



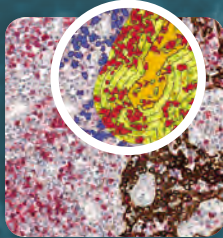
FISH QUANTIFICATION

A collection of modules for quantifying RNA and DNA fluorescence in situ hybridization. Quantify two probes (amplification-deletion FISH and break-apart-fusion FISH) or four probes (multiplexed DNA and RNA FISH) and report number of probe signals per cell.



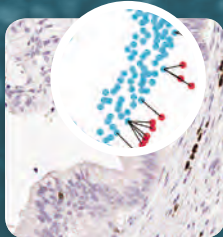
WWW.INDICALAB.COM

ONCOLOGY APPLICATIONS



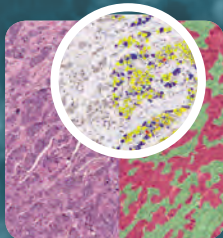
IMMUNE CELL QUANTIFICATION

Quantify cells labeled with common immune cell markers (CD3, CD4, CD8, PD1, PDL1). When used in combination with a second stain, the proximity of immune cells to the second stain can also be measured. For example, proximity of CD8+ immune cells to cytokeratin + tumor area.



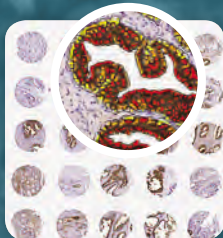
SPATIAL ANALYSIS

Plot cells on the same image or on registered serial sections together to measure nearest neighbor distances, count target cells within a user-defined proximity of reference cells, or count number of cells within a certain distance of a manually annotated interface line.



SERIAL SECTION ANALYSIS

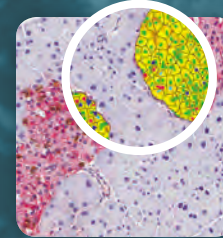
Using registration, serial section analysis allows you to transfer tissue classification masks to serial sections. For example, use H&E to classify tumor from stroma and use resulting classifier mask to quickly select tumor for analysis on registered IHC stained sections.



TISSUE MICROARRAY SEGMENTATION

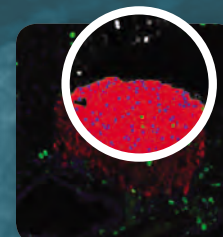
Easily segment TMA slides into individual spots for further analysis. Create TMA maps manually or import from spreadsheet, remove spots with insufficient tissue or artifacts, and run analysis across one or all TMA spots in batch.

METABOLISM APPLICATIONS



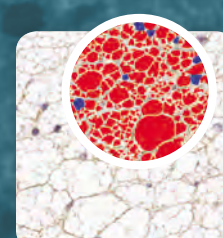
ISLET QUANTIFICATION IHC

Count islets stained with up to two stains in addition to nuclear counterstain, quantify number of stained cells in each islet, and determine area of islets stained with each islet-specific stains. For example, count insulin – and glucagon-positive cells per islet.



ISLET QUANTIFICATION FL

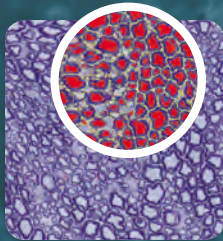
Count islets stained with up to three dyes in addition to nuclear dye, determine number of cells positive for each dye within each islet, and quantify islet area and total tissue area that is positive for each dye. For example, count number of insulin, glucagon, and somatostatin-positive cells per islet.



VACUOLE QUANTIFICATION

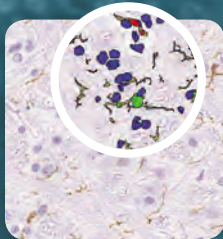
Measure vacuole area, diameter, perimeter and number of vacuoles per cell. Quantify lipid droplets in any tissue, including liver (steatosis) and adipose tissue.

NEURO | MUSCULAR | VASCULAR APPLICATIONS



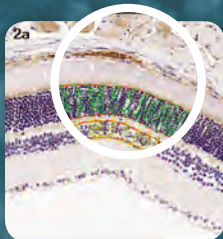
AXON QUANTIFICATION

Quantify axons in cross sections. Calculate axon area, myelin area, myelin thickness, inner and outer axon diameter, and G-ratio.



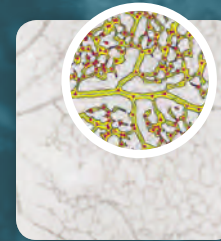
MICROGLIAL QUANTIFICATION

Quantify microglial activation based on length and thickness of microglial processes. Outputs total number of active and inactive microglia, average number of processes per cell and area, length, and thickness of processes per cell.



LAYER THICKNESS

Measure thickness of specific tissues or tissue areas, such as the retinal nuclear layers or the epidermal strata. **Included free with any HALO bundle.**



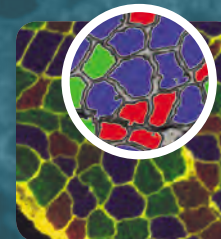
BRANCH STRUCTURE

Quantify labeled branched objects, for example retinal vascularization or nerve branching. Measure number of branch points and end points, length, thickness and area of branches. Available for both brightfield and fluorescent applications.



MUSCLE FIBER QUANTIFICATION

Quantify area, perimeter and mean/median/maximum diameter of muscle fibers stained with laminin or other stain to highlight fiber membrane. Count muscle fibers with central nucleus (indicative of regeneration).



MUSCLE FIBER QUANTIFICATION FL

Count, measure and classify muscle fibers based on expression (or co-expression) of up to three markers.



WWW.INDICALAB.COM

Your
SCIENCE + *Our*
ENGINEERING = *Better*
RESULTS

FOR MORE INFORMATION, PLEASE
CONTACT YOUR AKOYA SALES
REPRESENTATIVE.



WWW.INDICALAB.COM

