IMMUNOPATH

Automized IHC Quantification

WSI slide storage

ROOM 4

Human review of slides prepared using Immunohistochemistry techniques can be time consuming and laborious. Counting cells or estimating the percentage stain on a slide is not something the average pathologist enjoys. Our IHC quantification tool offers a protocol based system that can rapidly complete counting and field fractions type quantification from images obtained from standard microscopy cameras, as well as whole slide imaging systems.

ImmunoPath is designed to provide quantitative information on images obtained from Immunohistochemistry (IHC) images captured using slide scanners and from single images captured with standard microscopy cameras.

The system has been designed so that it is protocol based, initally these can be setup from scratch or customised from existing ones. Once the protocol is set up the same set of image analysis techniques are completed on each image, and the results are presented in a simple workflow. Protocols can be simply transferred from one system to another so allowing throughput to be increased and sharing analysis method(s) with colleagues.
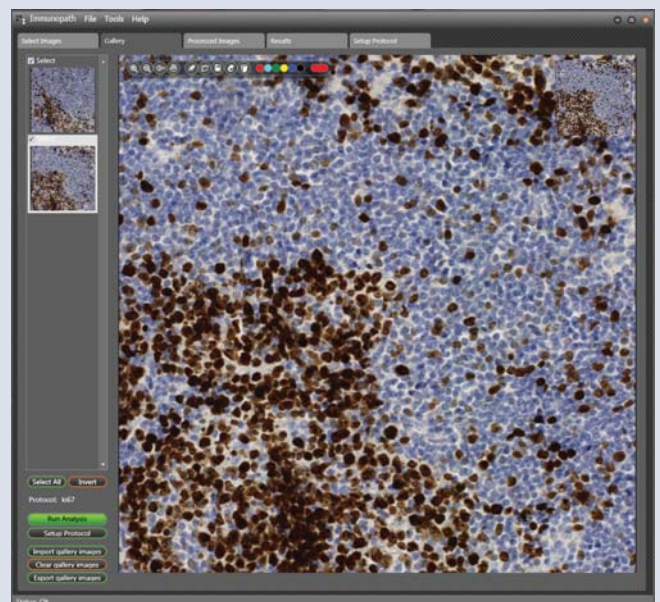
SUPPORTED HARDWARE AND SOFTWARE

- Whole Slide Imaging (WSI) formats including: Hamamatsu (.ndpi, .vms); Aperio (.svs);
- Operating systems supported : XP, Windows 7, Windows 8
- Standard image formats: JPEG, PNG
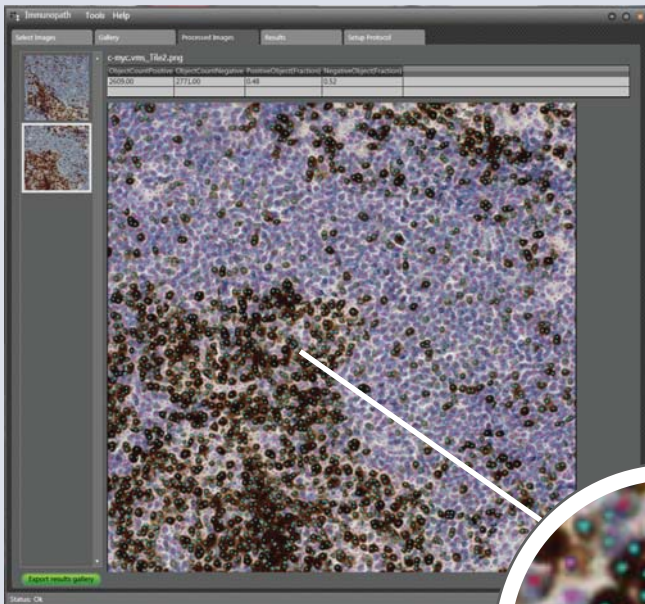
SIMPLE THREE-STEP PROCESS
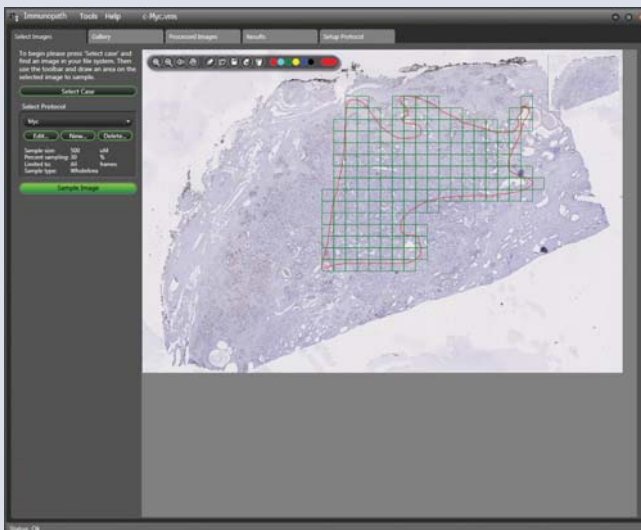
1

Load and select an image. Draw the area to be analyzed.

2

Select one or more samples. Run analysis.

3 Review and save results.

IMMUNOHISTOCHEMISTRY

Immunohistochemistry (IHC) is a test used by pathologists to detect specific molecules on cells.
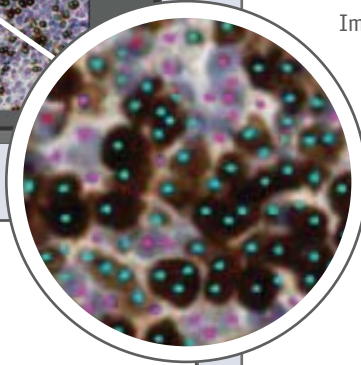
When a tissue sample is passed to a lab to be examined for disease, there are several details that cannot be determined easily. Several diseases or disease sub-types may look alike or appear to have similar size cells under a microscope but have different behaviors and necessary treatments. One way to differentiate them is to detect specific molecules on these cells that act as markers.

Immunohistochemistry is a technique that uses antibodies that can seek out, identify and attach themselves to these markers on cells. The antibodies themselves can be seen under the microscope and quantfied.

IHC is used for numerous applications in medicine, especially in cancer diagnosis and drug discovery.

## SUPPORTED IMAGE ANALYSIS OPERATIONS

POSITIVE/NEGATIVE NUCLEI COUNTING:

The protocol specifies the limits of positivity, the small dots on the images show the location of the cells that the system has identified as positive and negative.
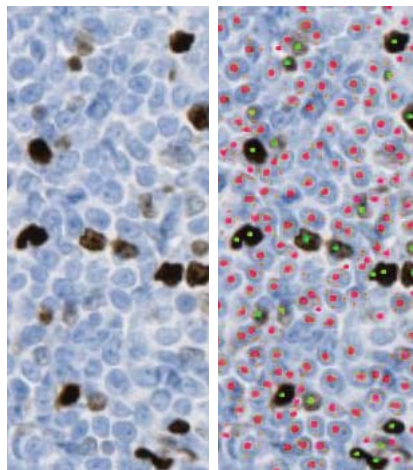
FIELD FRACTION:

The protocol specifies the limts of positivity and the system records both the intensity and the quantity of both positive and negative stains.
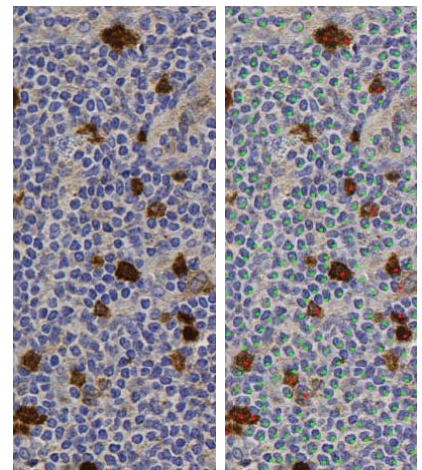
ANALYSIS EXAMPLES
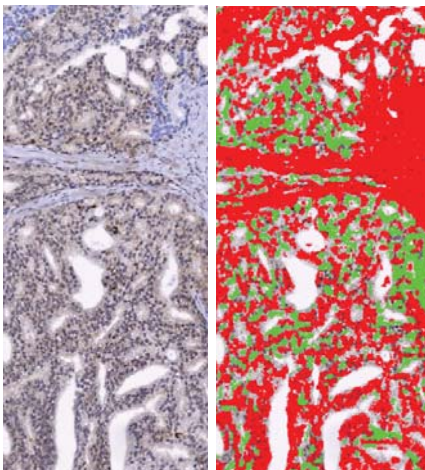
Sample stained with an antibody against PTEN. After running a field fraction analysis the area of positive cytoplasm stain is shown in green and the non-epithelial areas are red.

Based on the automated Immunopath analysis, the Ki-67-positive and negative nuclei are indicated by complementary coloured dots.

Formalin fixed paraffin embedded tumor tissue stained for Polo like kinase 1 (nuclei), counterstained with hematoxilin.

FLEXIBLE PROTOCOL BASED IMAGE ANALYSIS FOR WHOLE SLIDE IMAGES

- *Immunopath automises laborious and repetetive pathology tasks*
- *Full image analysis and sampling options for data reduction*
- *Flexible options for Whole Slide Image support, import from standard imaging devices and common file formats*
- *Protocol based image analysis for repeatable and reliable results*
- *Runs on standard desktop PCs or Notebooks*
- *Also available; Pathtool - a partner application providing tools for grading microscopy images in pathology*
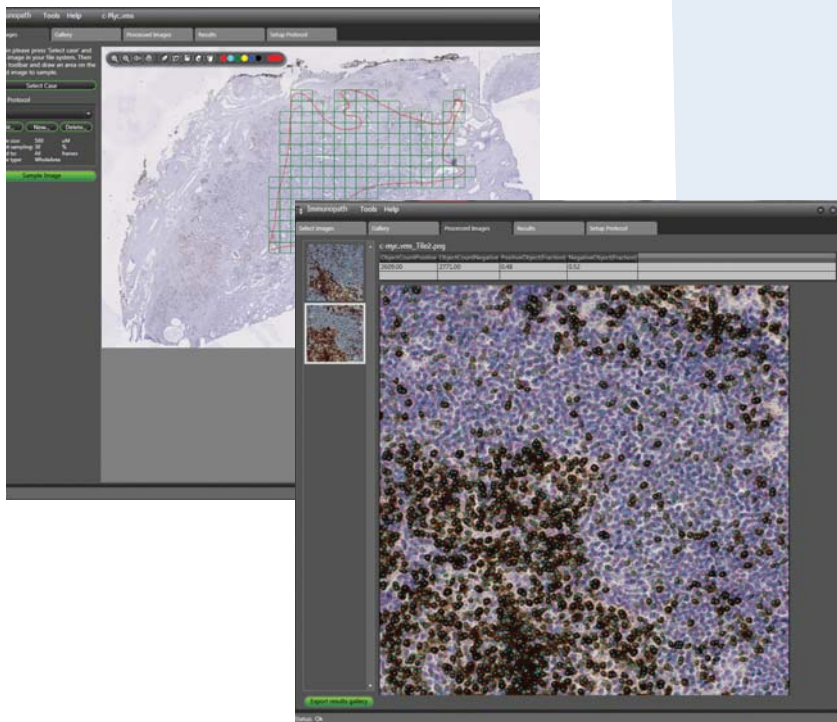
Contact info@room4.eu for more information.