# Automatic slide series quantification with preset algorithms

## Cell Recognition

### Segmentation and phenotyping of cells and objects

Cells and more generally biological objects are detected regardless their staining type (HE, IHC, IF, simple or multiplex) using machine learning. The analysis is based on the color, edge, texture, and morphology of the objects and/or their neighborhood.
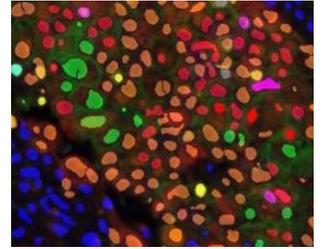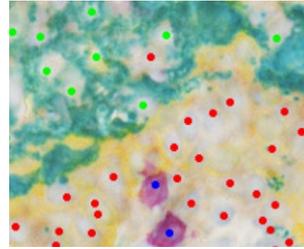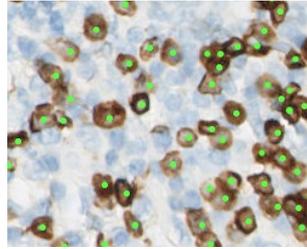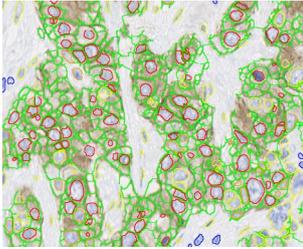


## Tissue Recognition

### Recognition and segmentation of tissue classes

The algorithm maps tissues by identifying anatomical structures and regions. It allows to define the regions of analysis to be quantified and the invasion margin of the tumor.
Tissue Recognition analyzes tissues (e.g. stroma vs tumor, glands vs tissue) by machine learning from learning images. The analysis is based on criteria of colors, contours, shapes and textures.
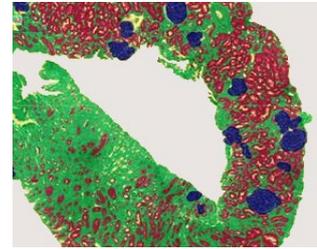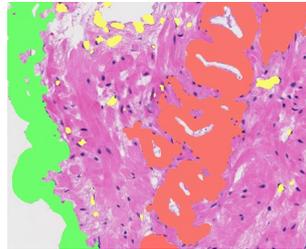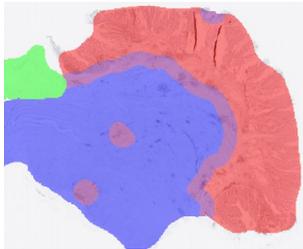


## ISH (CISH/FISH/RNA Scope)

### In situ quantification on digital slides

In CISH/FISH, the algorithm is used to segment the nucleus and detect the gene and its control. The result is a classification of nuclei based on gene amplification signal.

In RNA Scope, the algorithm quantifies the number of points present in each nucleus and classifies the cells according to the expression of the gene of interest.
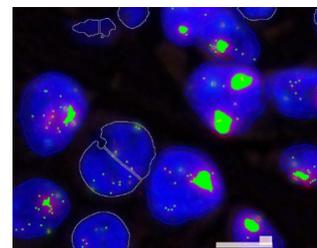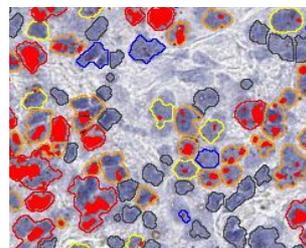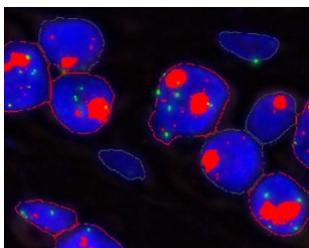
# Morphometry

The image is segmented according to luminance, hue and mathematical morphological criteria leading to an exhaustive description of tissues and cells.

Morphometry allows the creation of various analysis macros. It is commonly used for the quantification of fibrosis, nuclei, histological structures, cellular bodies...
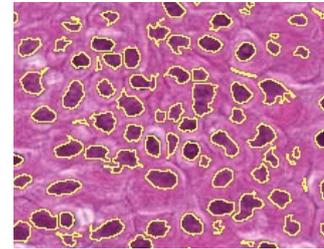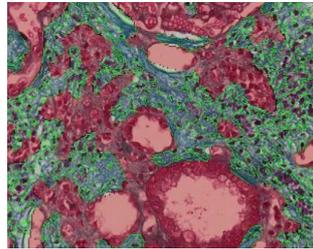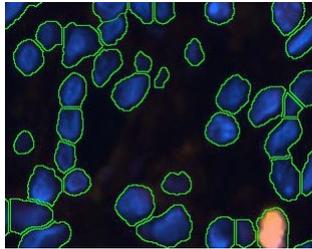


# TMA (Crop & Score)

The cores on a slide are identified and individualized for their analysis:

- Location of cores on the slide using the Arrayer production file
- Manual scoring of each core on a reading template
- Exporting of results on an Excel file
- Combined with the other algorithms, TMA Crop & Score allows automatic reading of biomarkers
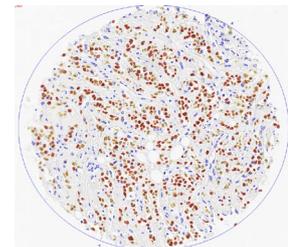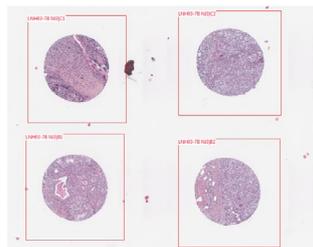


## ImageJ

Module for the integration of image analysis plug-ins developed in ImageJ

It allows the generation of your own image analysis macros and their integration in workstations, in order to benefit from the CaloPix images management system.

**TRIBVN**

**HEALTHCARE**