

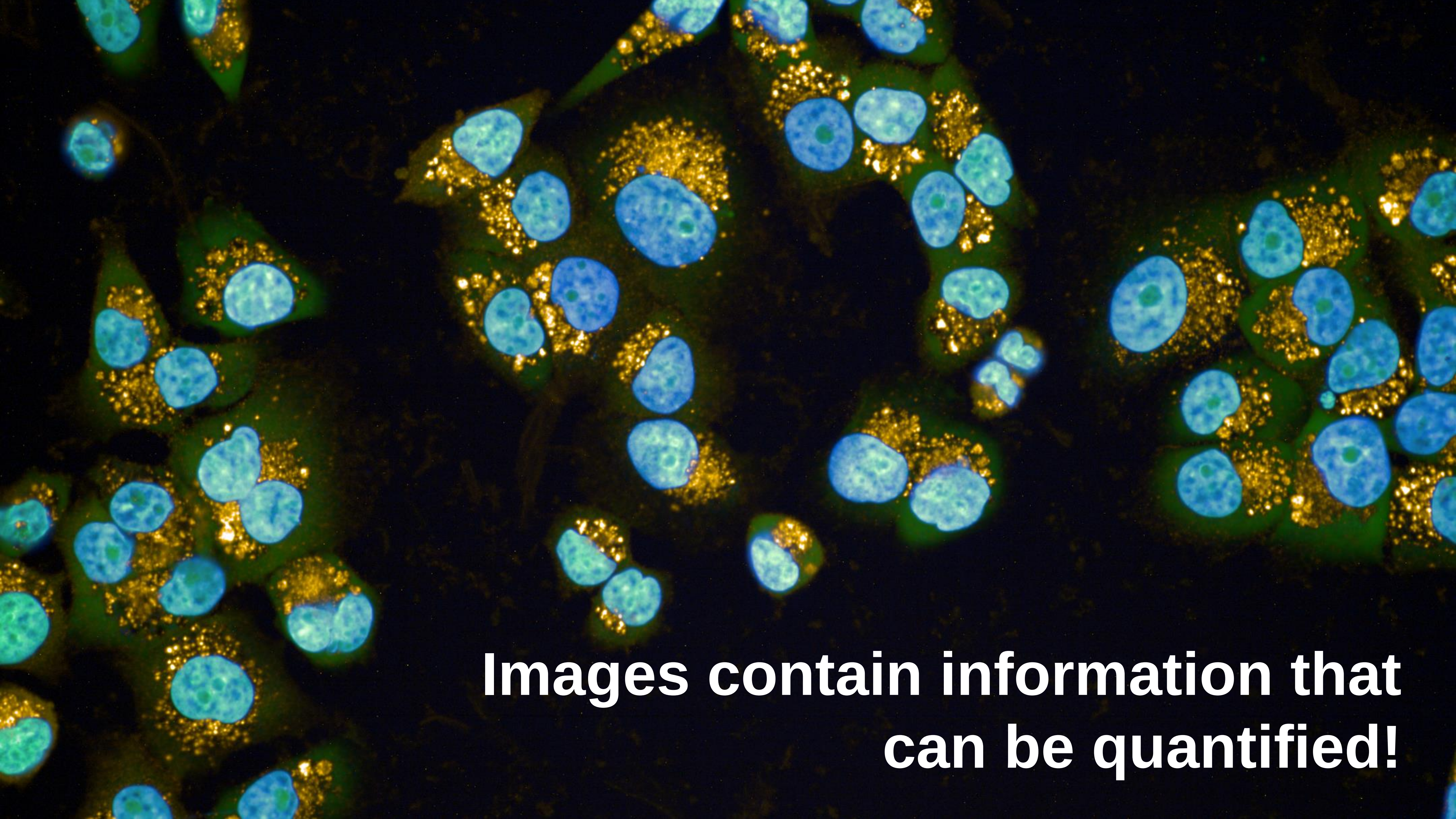
Imagerie quantitative in vitro :
développements



Operetta® CLS™ High-Content Analysis System

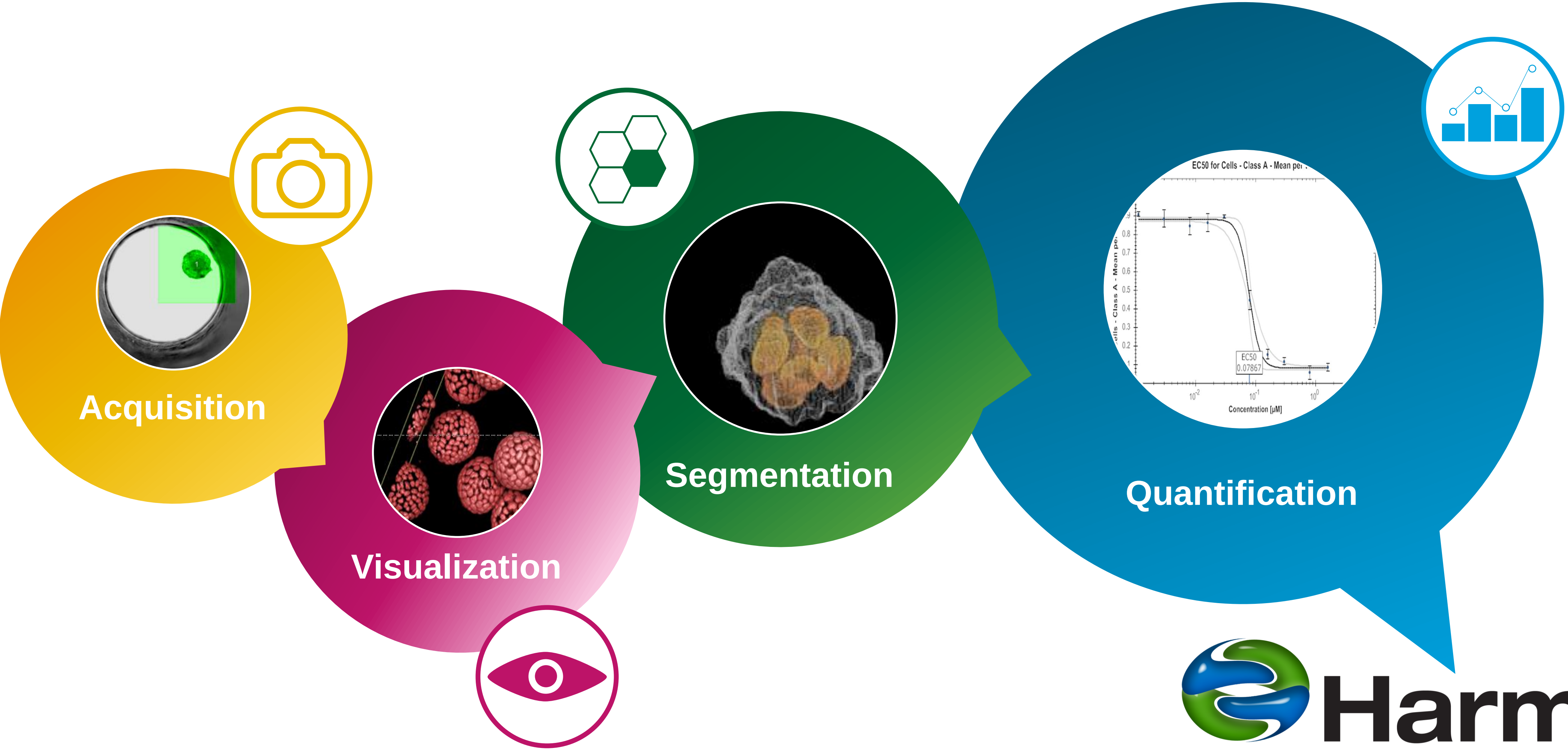
ADEBIOTECH CAMPUS 2023

Julian Bursztyka, PhD, Sr Sales Specialist



**Images contain information that
can be quantified!**

2D, 3D & 4D High Content Analysis / High Content Screening Workflow



It all comes together in Harmony

PerkinElmer HCS Product Line History



Opera
2003
High-end HCS,
laser-based
confocal
Acapella
image analysis



Operetta
2009
Mid-range HCS,
Xenon lamp-based
wide field & confocal
Harmony
software suite



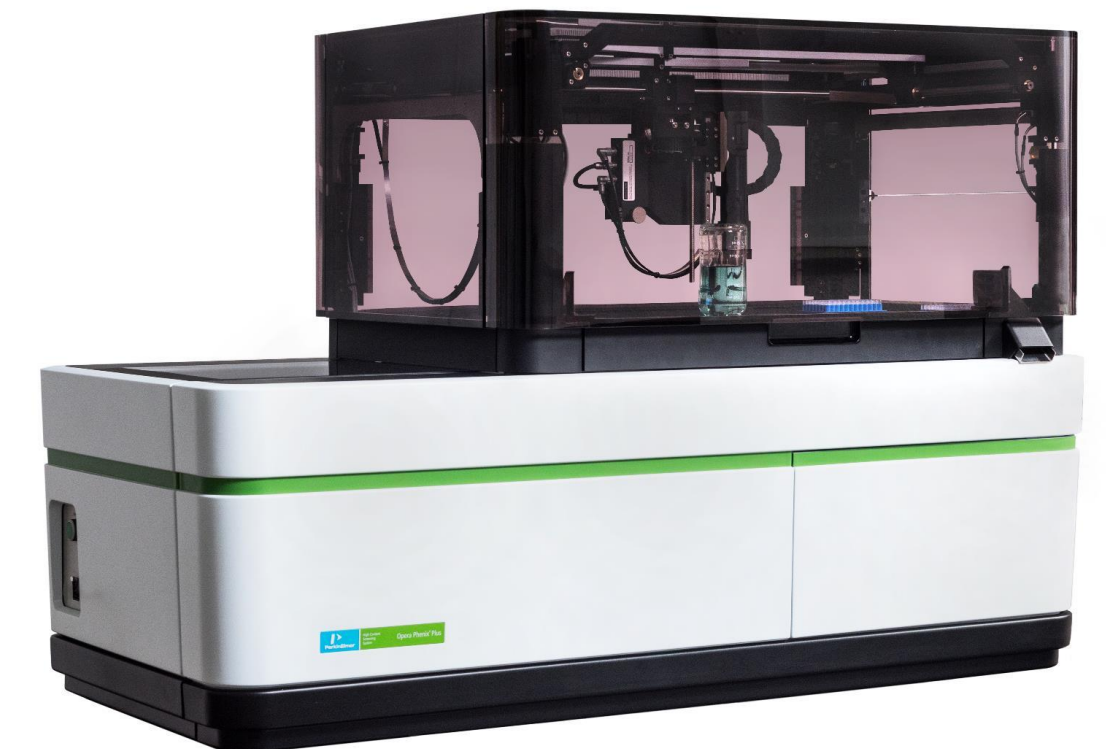
Opera Phenix
2014
High-end HCS,
laser-based
widefield & confocal
1 - 4 sCMOS cameras



Operetta CLS
2016
Mid-range HCS,
LED based
widefield & confocal
1 sCMOS camera



MuviCyte
2019
Live Cell Imaging System



Opera Phenix Plus
2020
Pipettor
Humidity Control
Narrow band emission filters

PerkinElmer Instruments for HCS



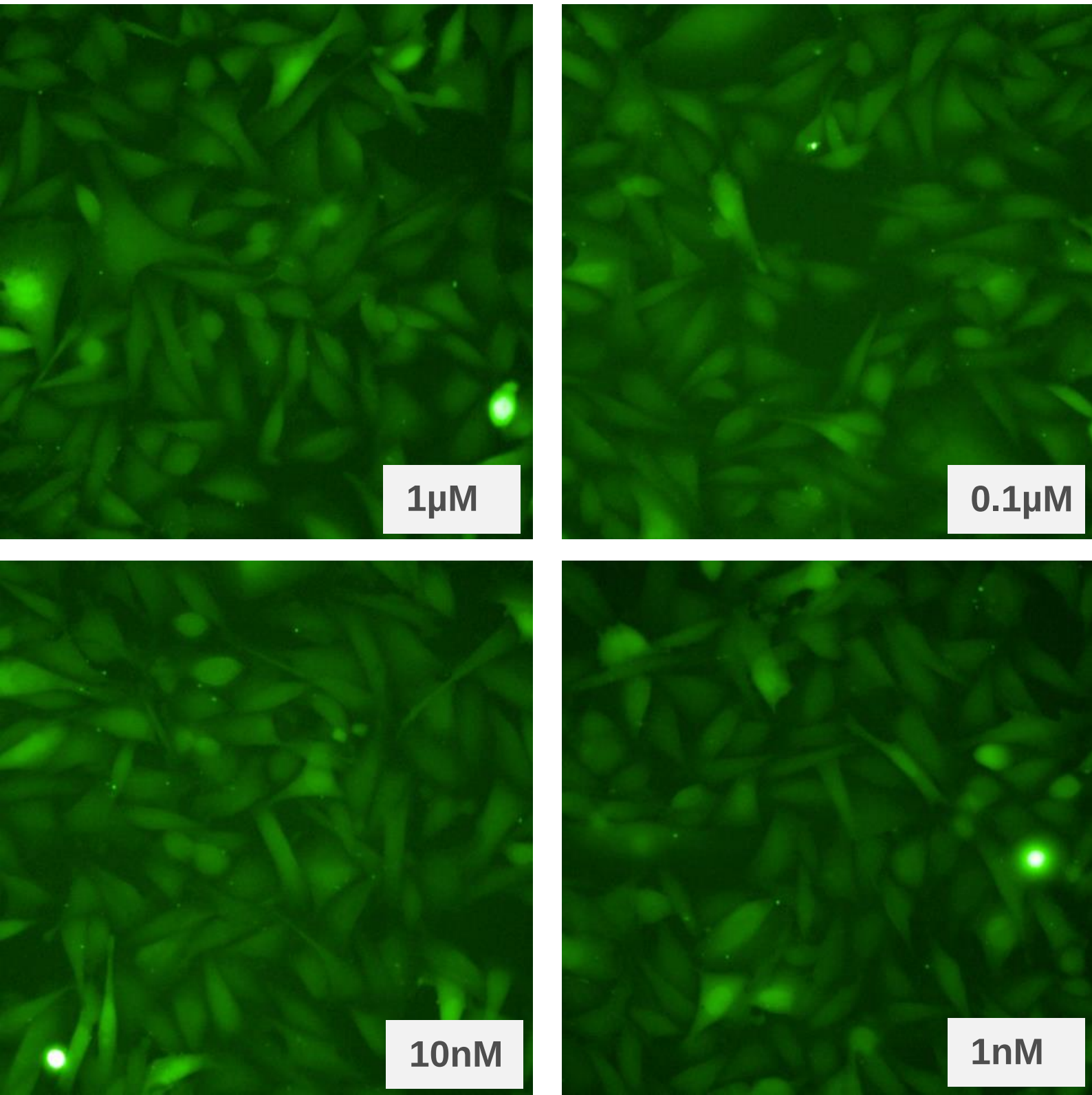
Opera Phenix Plus



Operetta CLS

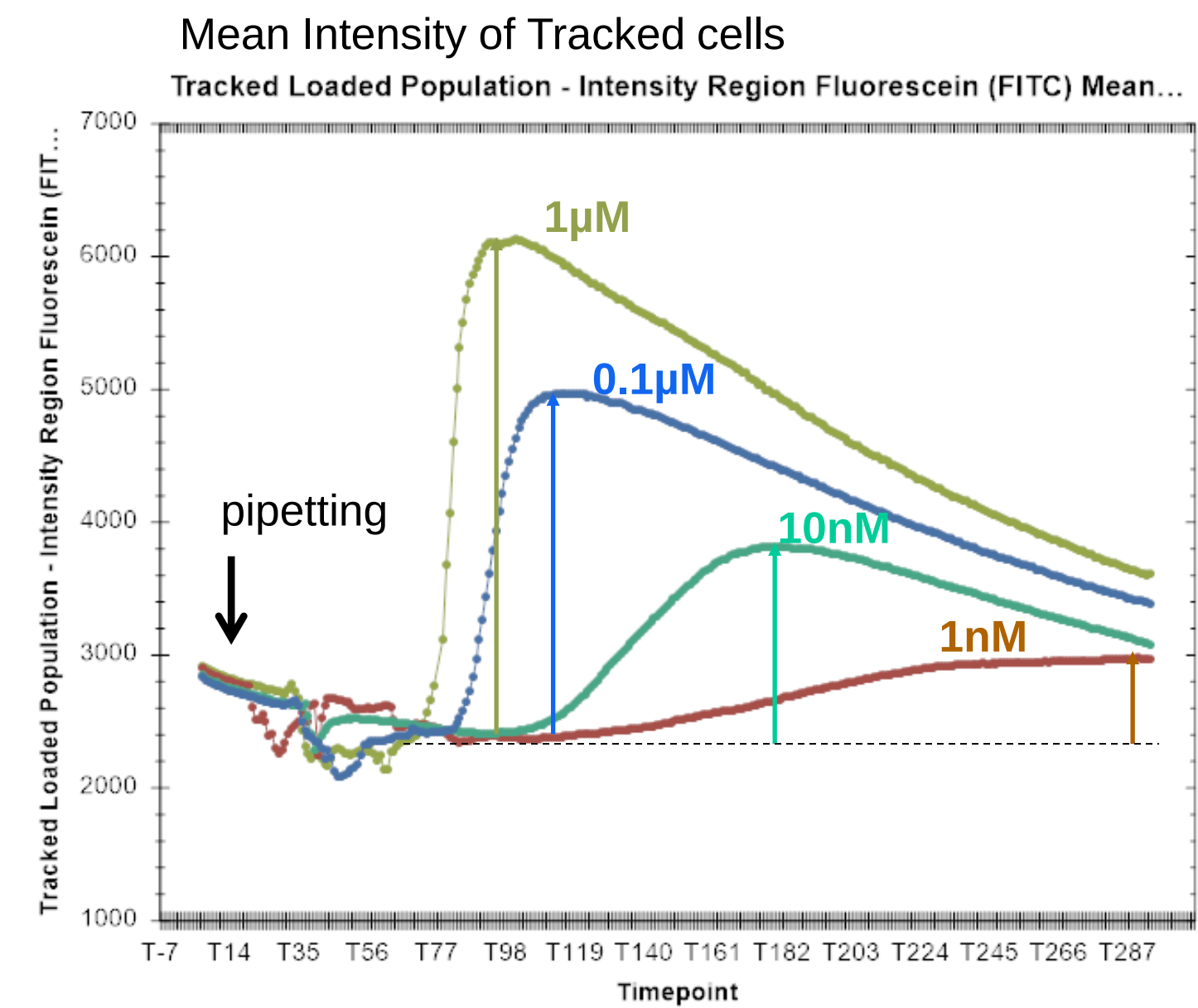
Calcium Imaging Example Workflow

Different Histamine concentrations



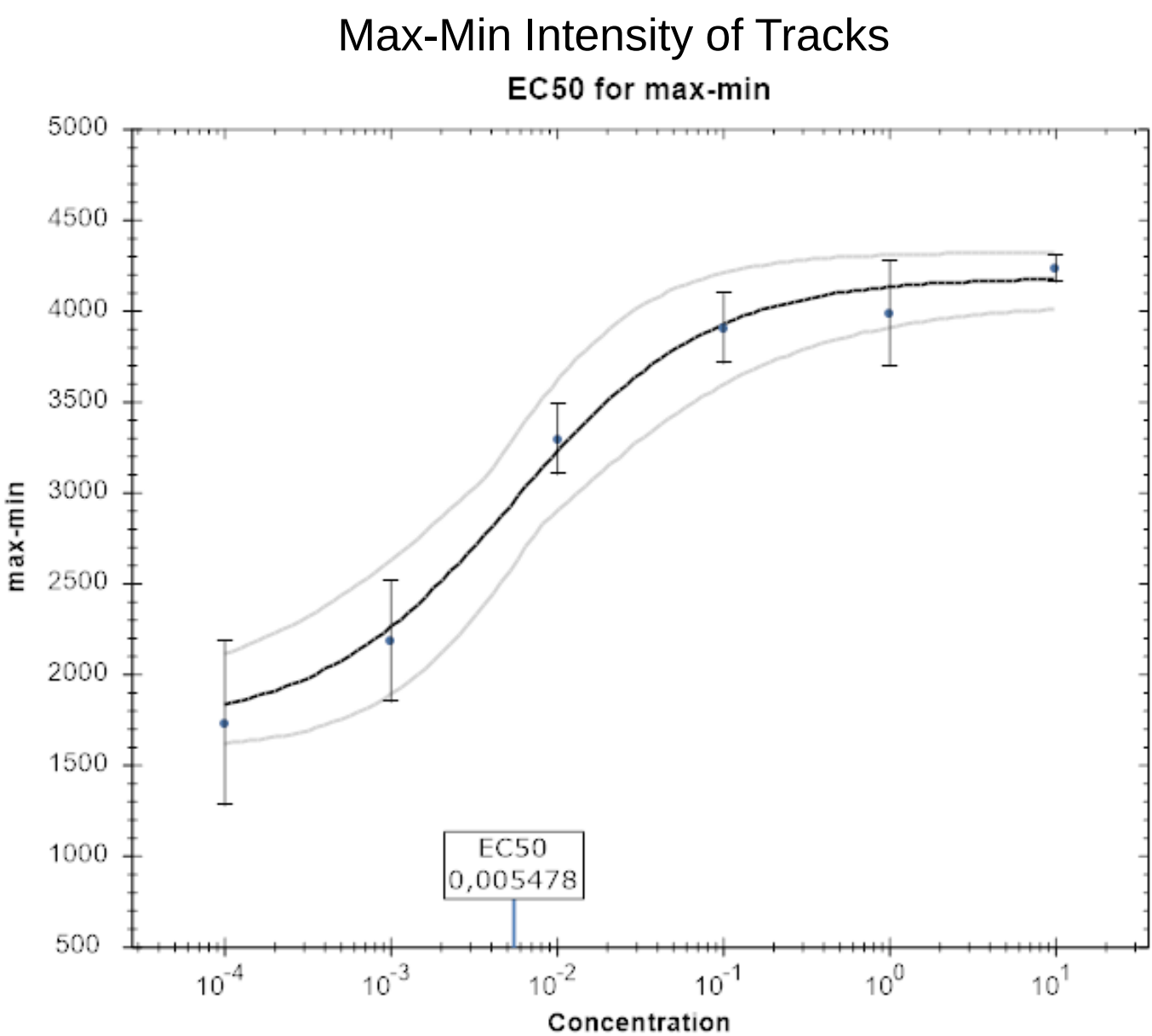
Flux calcique

➔ Track single cells and calculate mean Intensity of Tracks

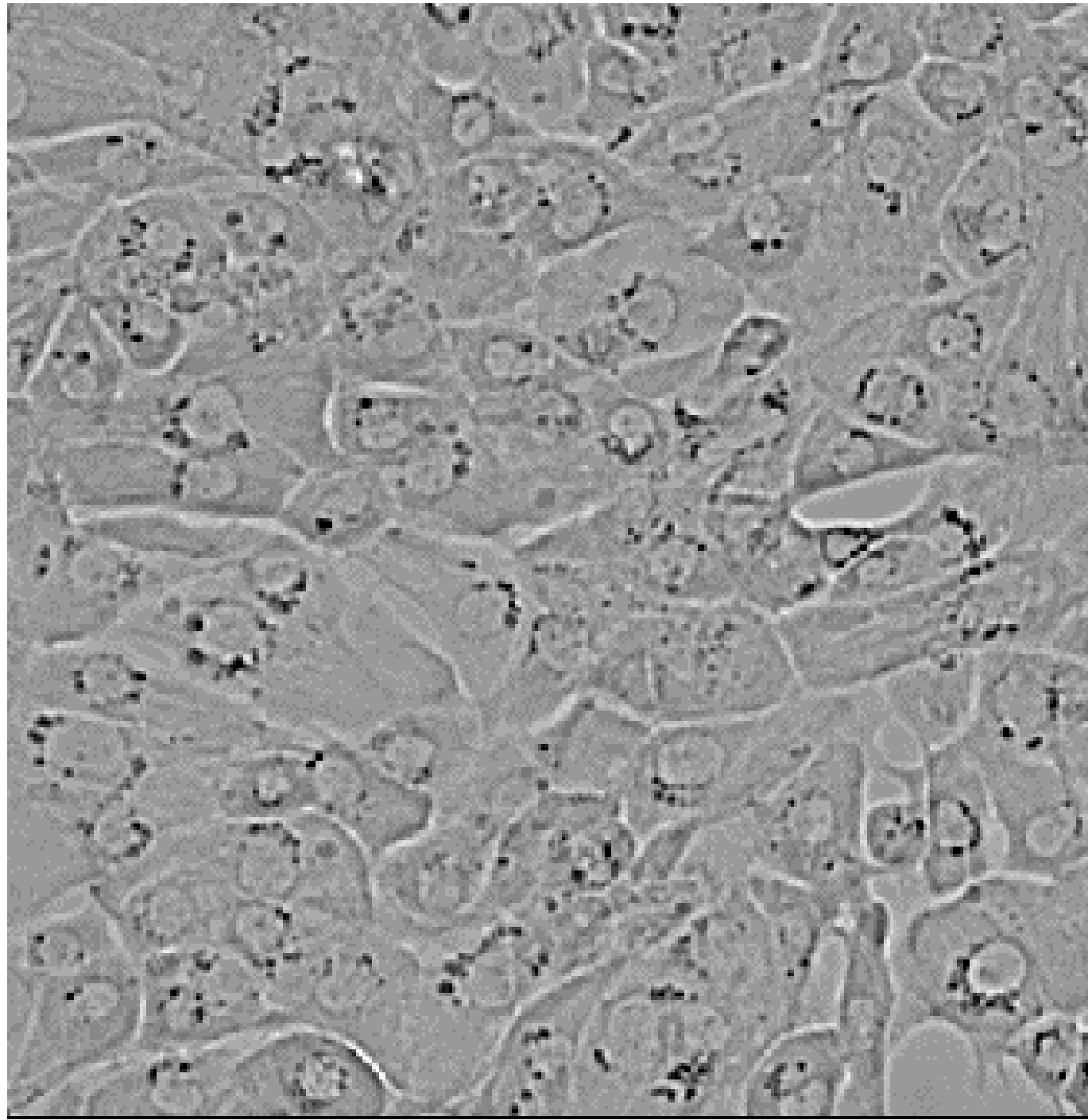


➔ Determine Max-Min Int value of each Track

➔ Determine EC50 of Histamine



NEW: Improved Live Cell Capabilities



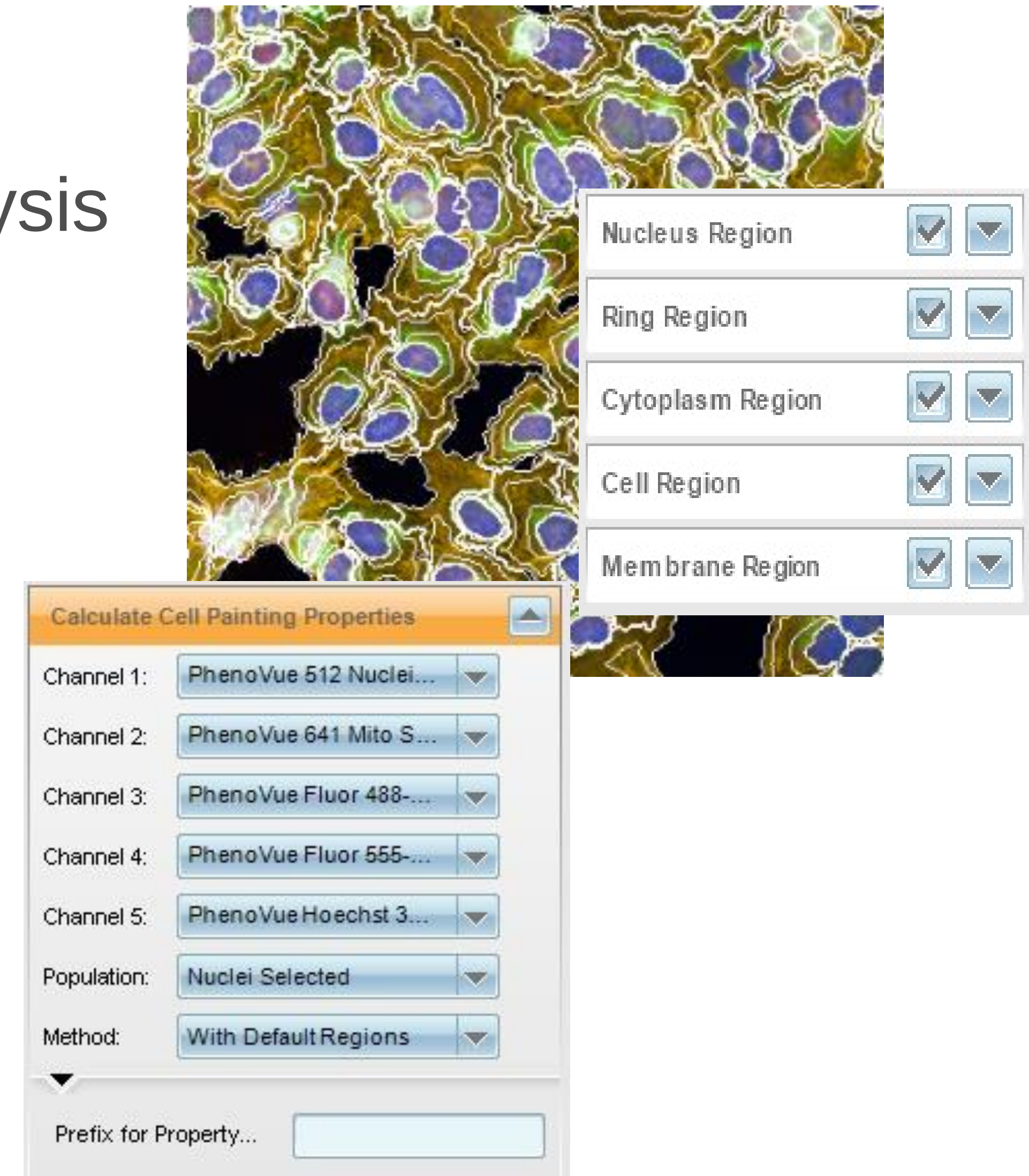
Contractions de cellules cardiaques

- **Fast Frame Rate Imaging**
 - Up to 105 fps with max. 948*948



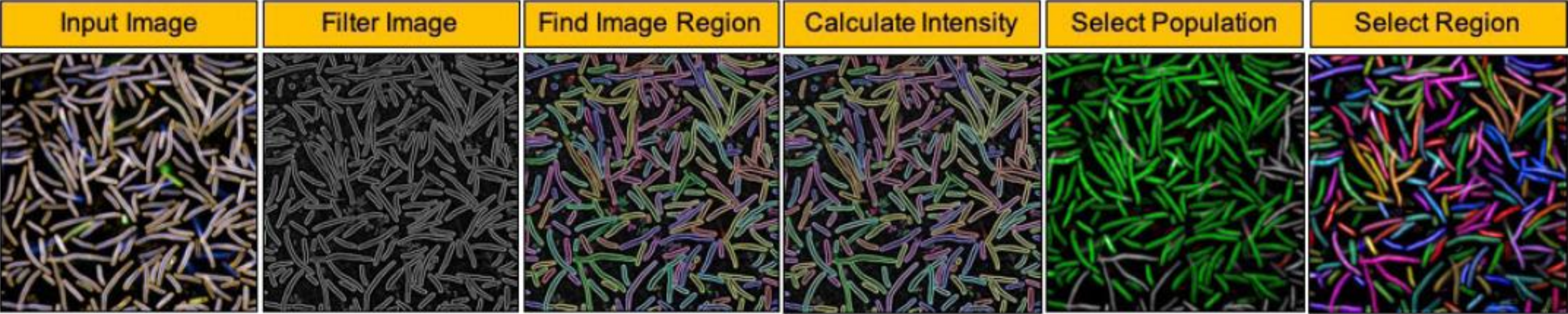
NEW: Calculate Cell Painting Properties Building Block

- Dedicated Image Analysis Routine for analysis of Cell Painting assays
- Up to five channels
- Up to five pre-defined cell regions
- Three pre-defined property sets including Intensity, Morphology and Texture features

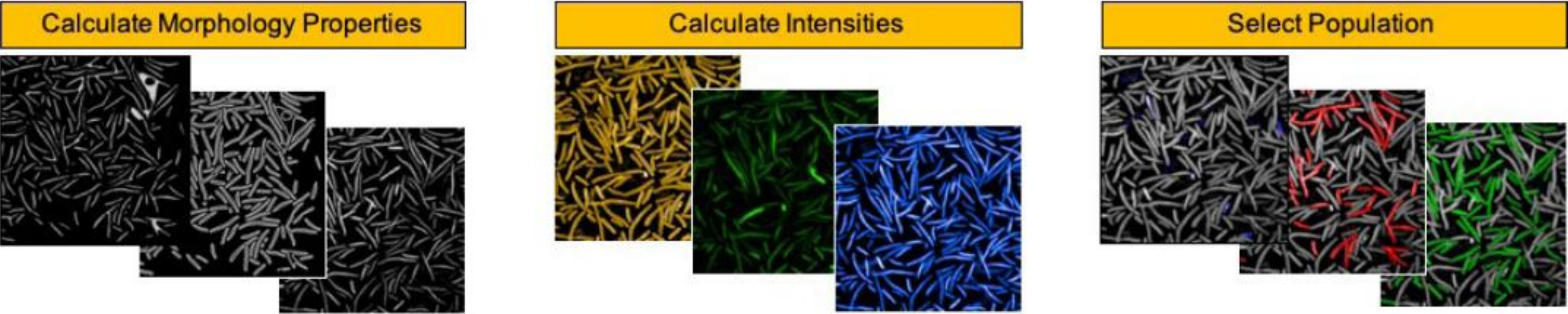


Depuis la bactérie...

2A



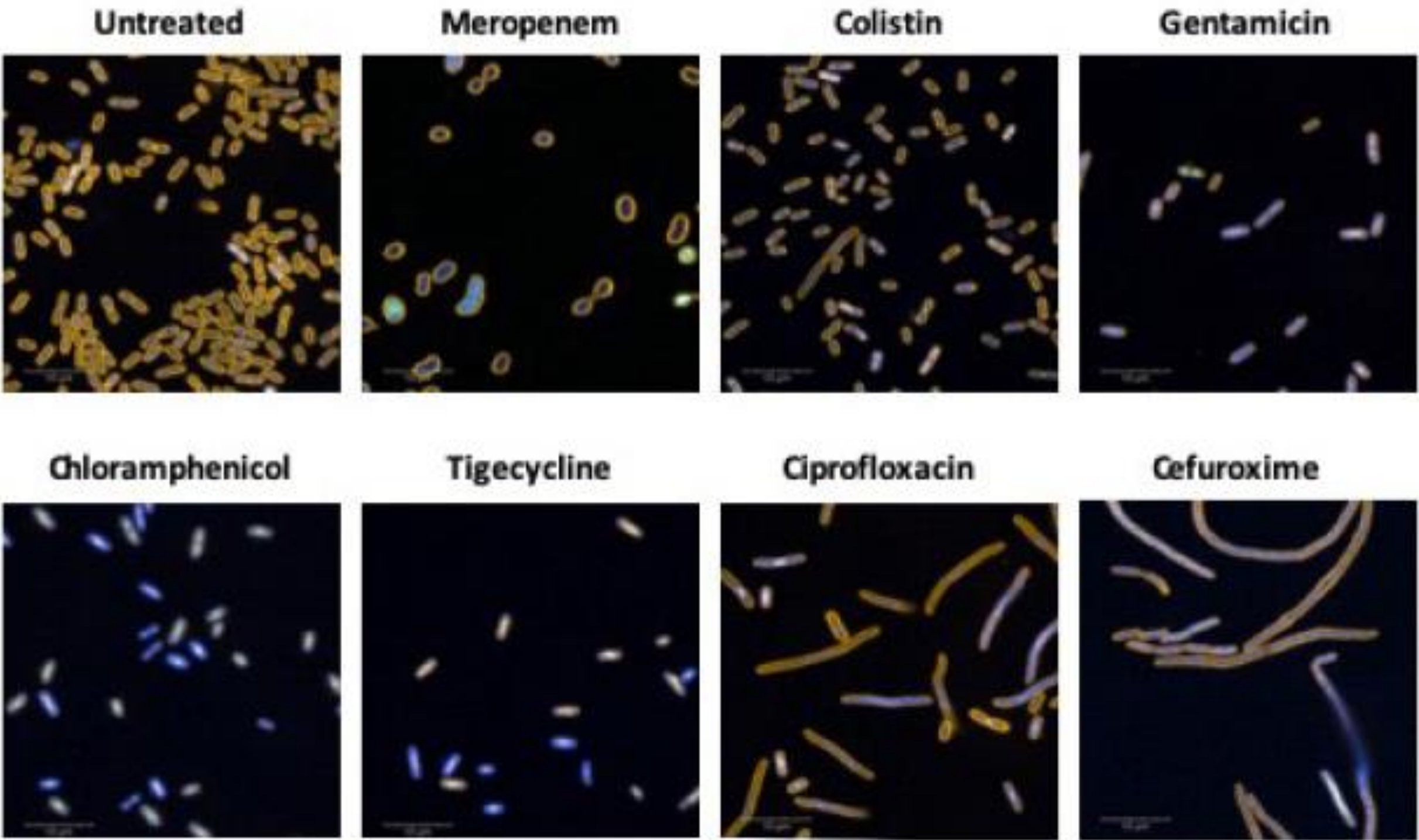
2B



Cambridge Biomedical Research Center

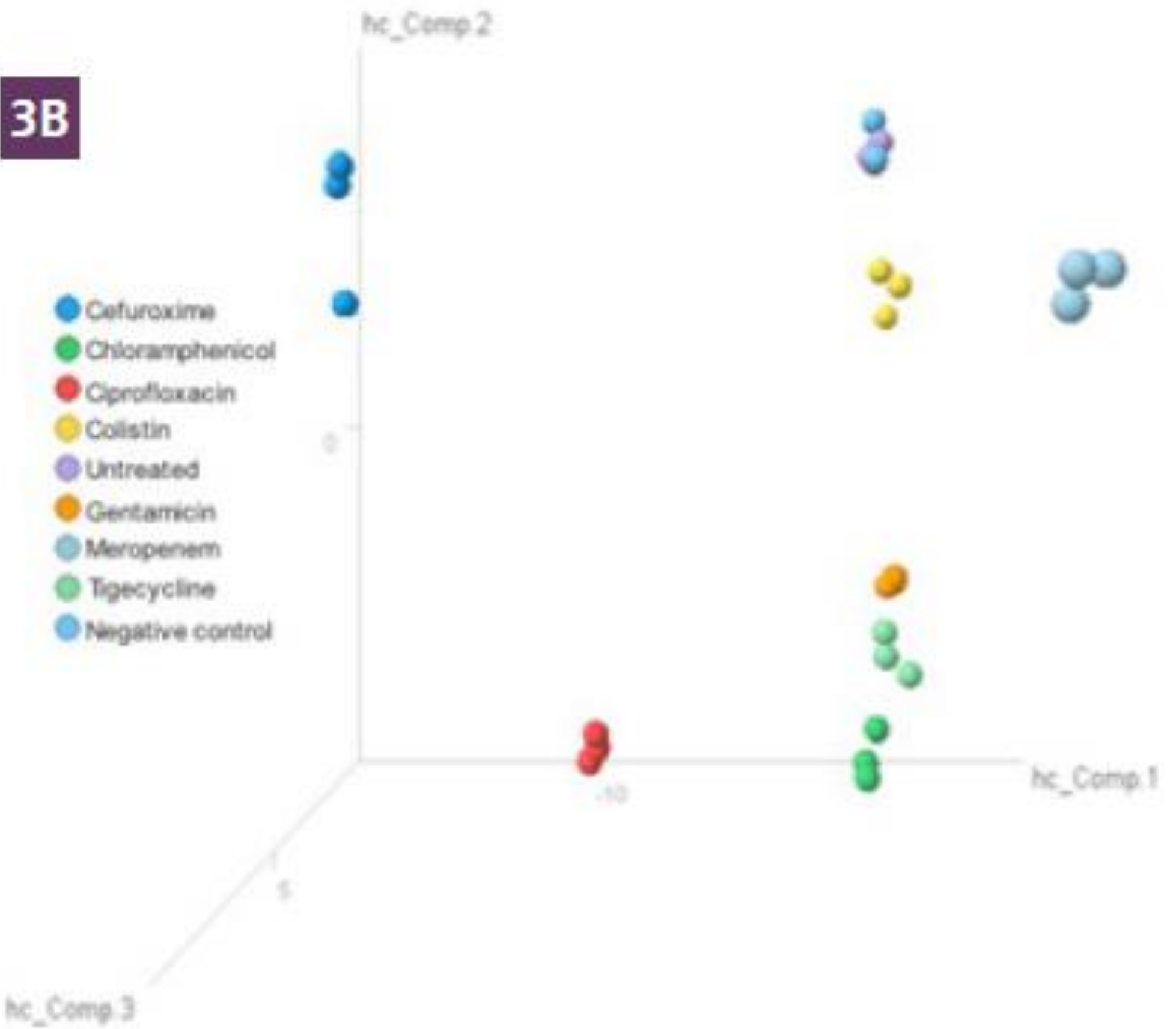
Depuis la bactérie...

3A

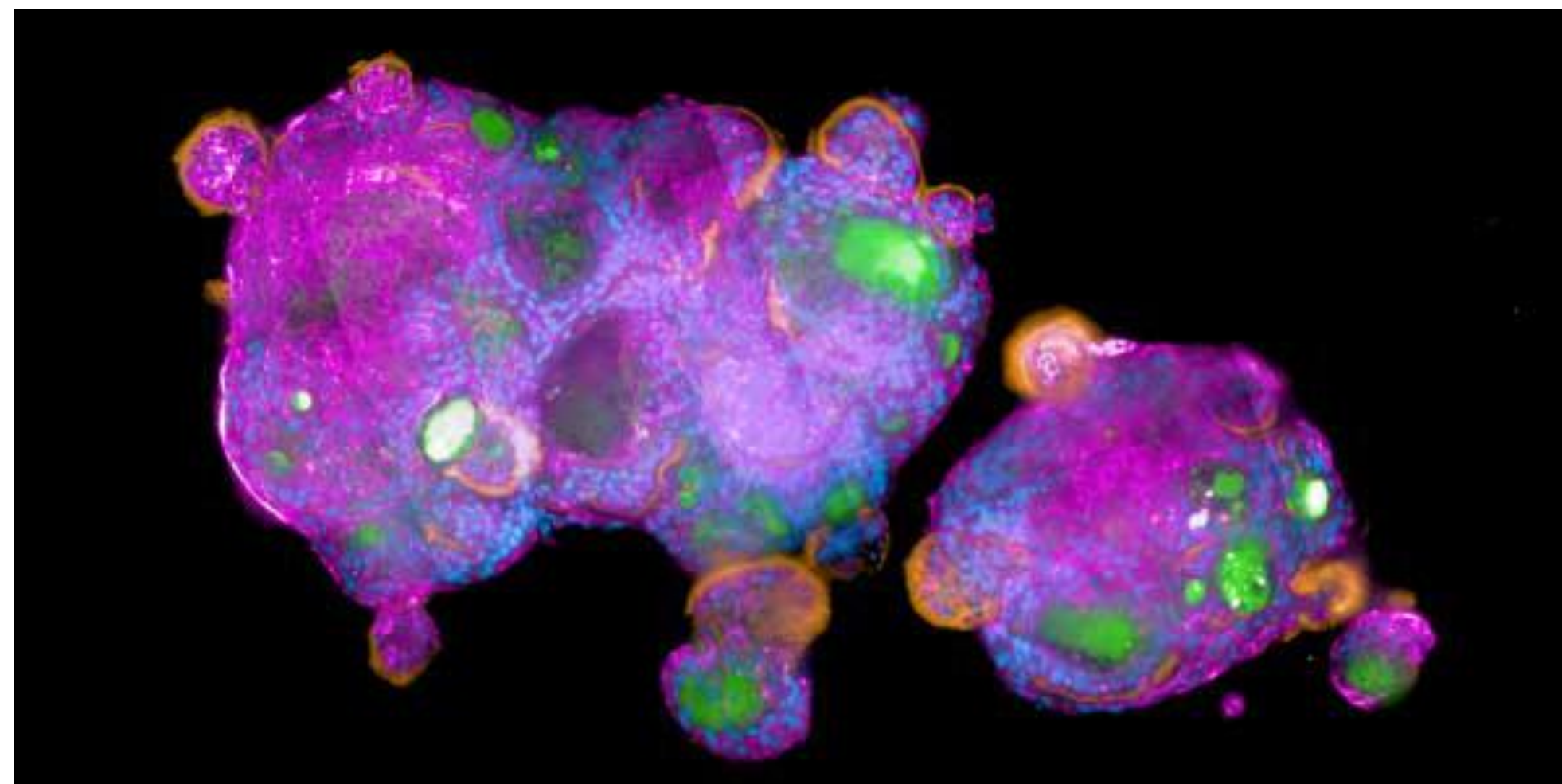
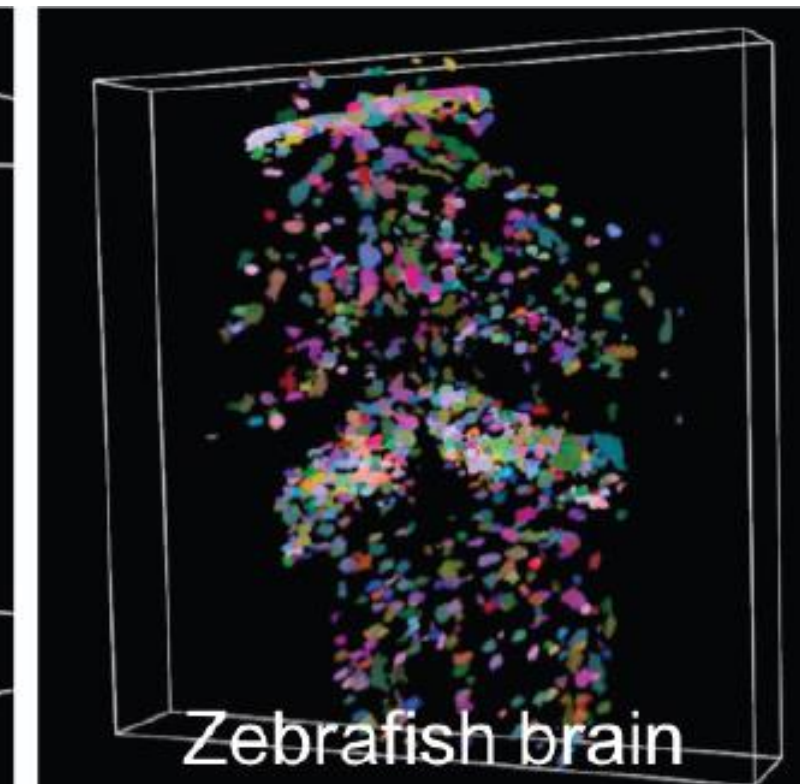
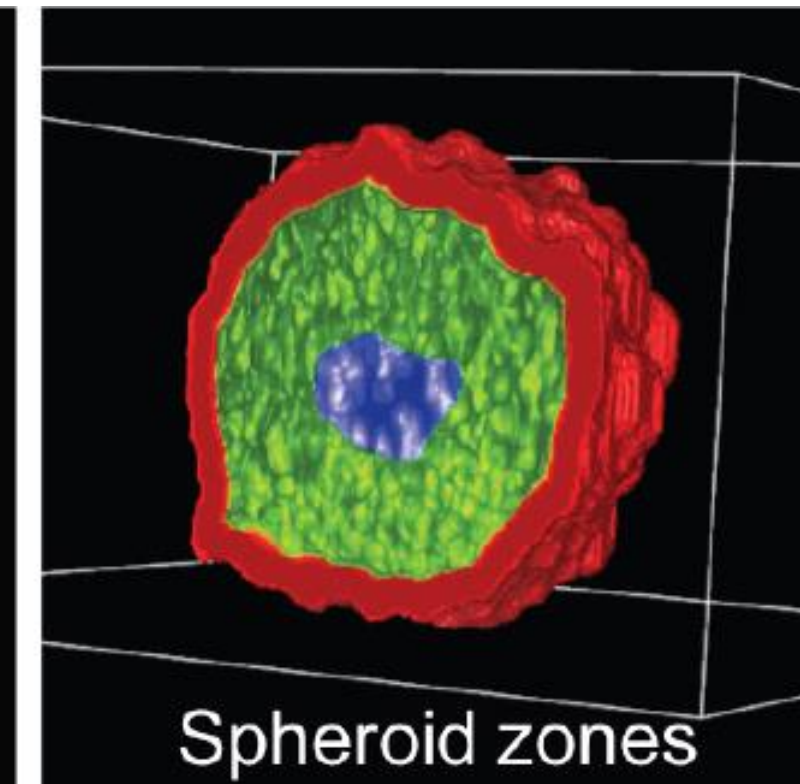
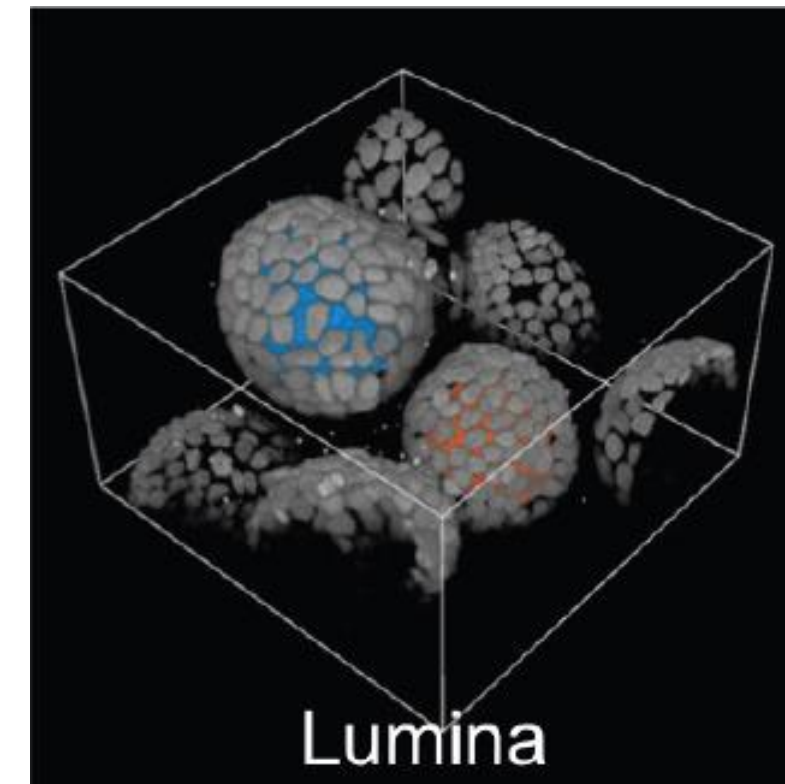
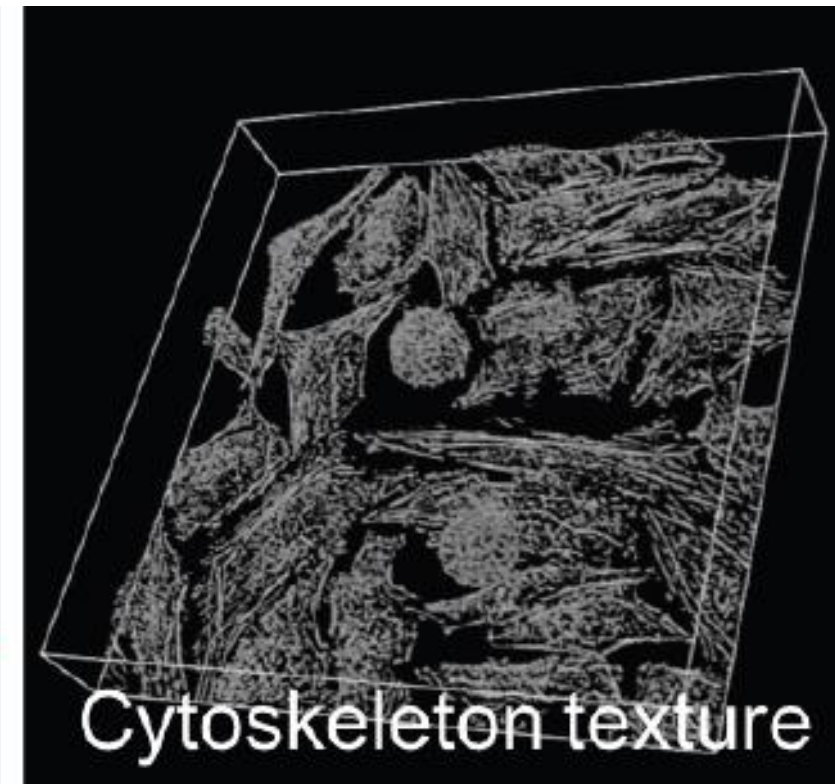
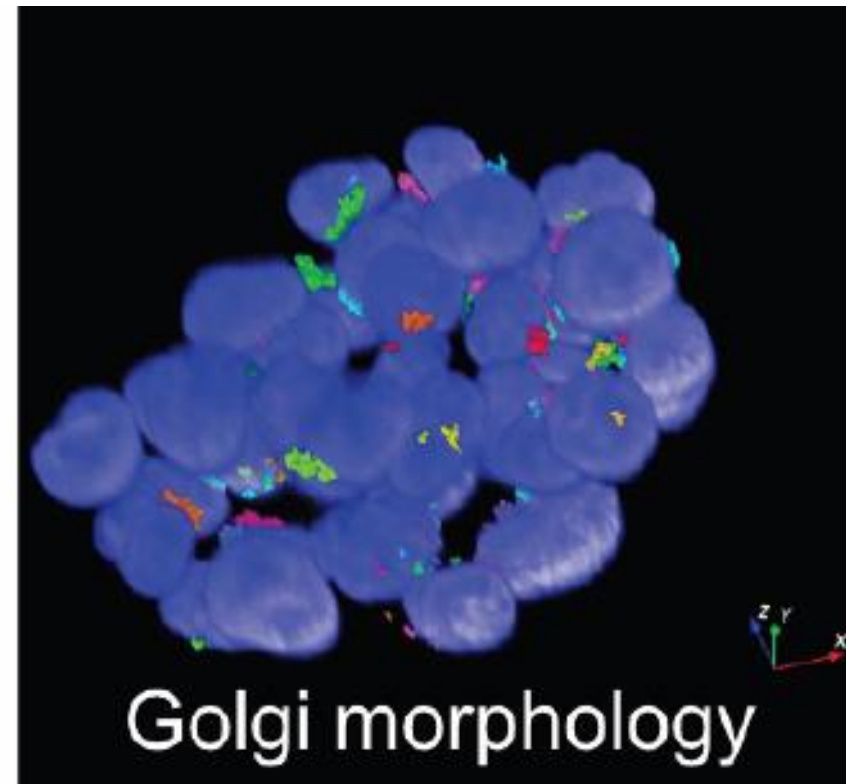
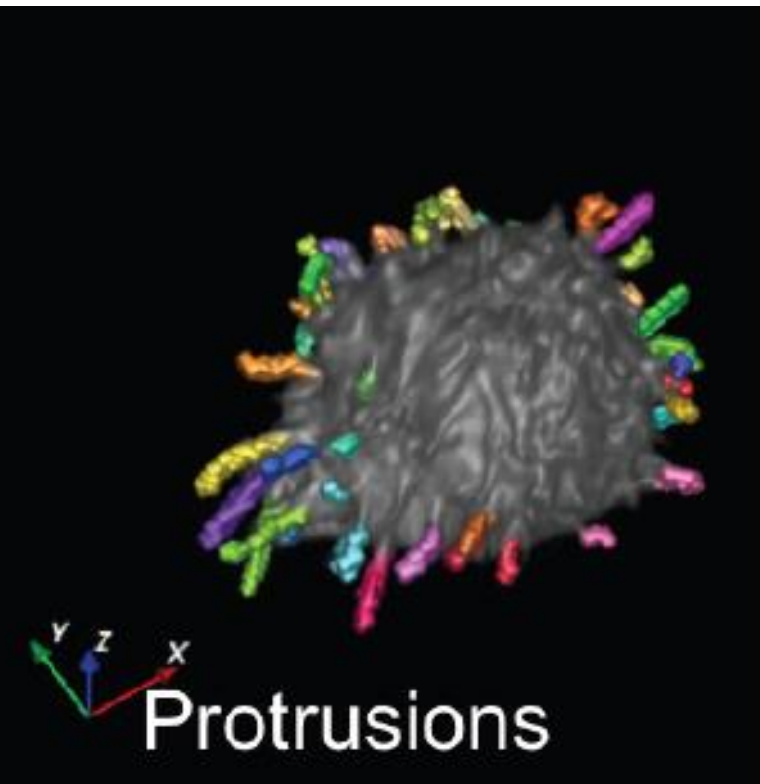


Klebsiella pneumoniae (x5 MIC)

3B



... jusqu'à l'organoïde ou le petit animal (zebrafish)



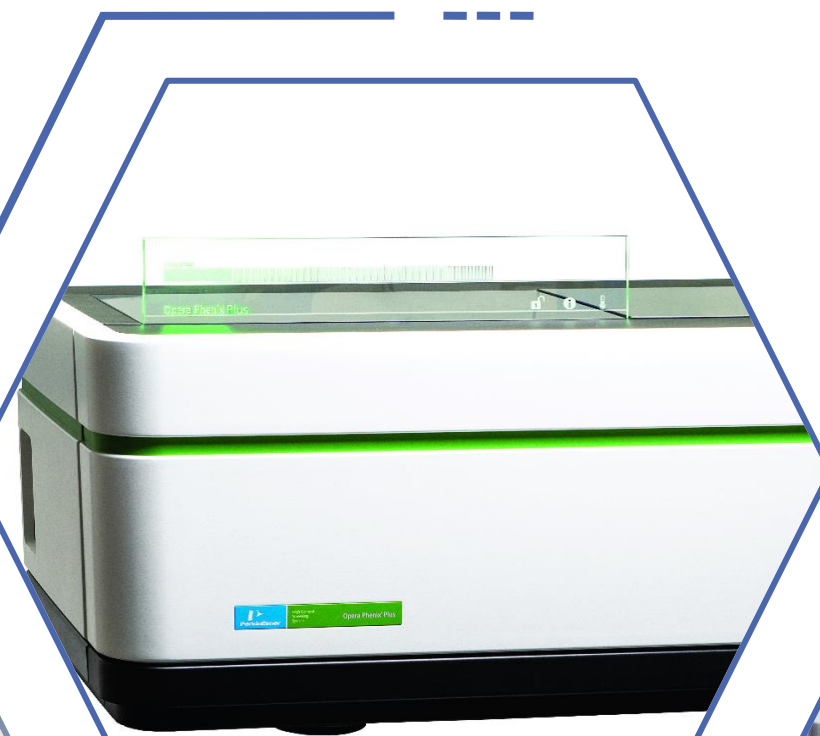
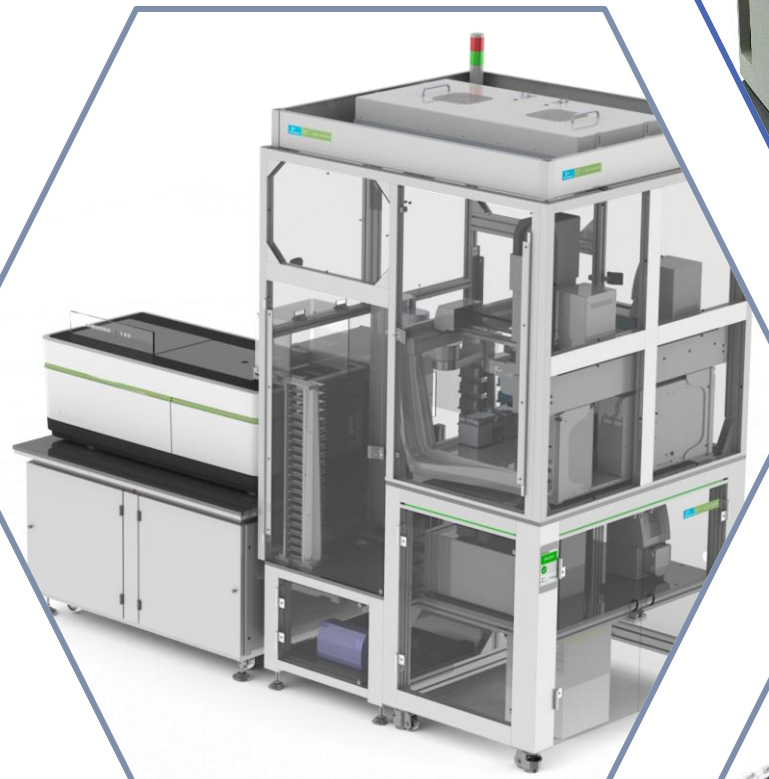
SARS-CoV-2-infected apical-out polarized lung organoids.

Höchst for nuclei (blue), MUC5AC for mucus (orange), phalloidin for tight junctions (pink), and an anti-SARS-CoV-2 antibody (green). Images were taken using the Operetta CLS system. ©D.Wilflingseder, A.Noureen



Integrated High Content Screening Solutions - *from images to insights*

Sample Handling



Detection

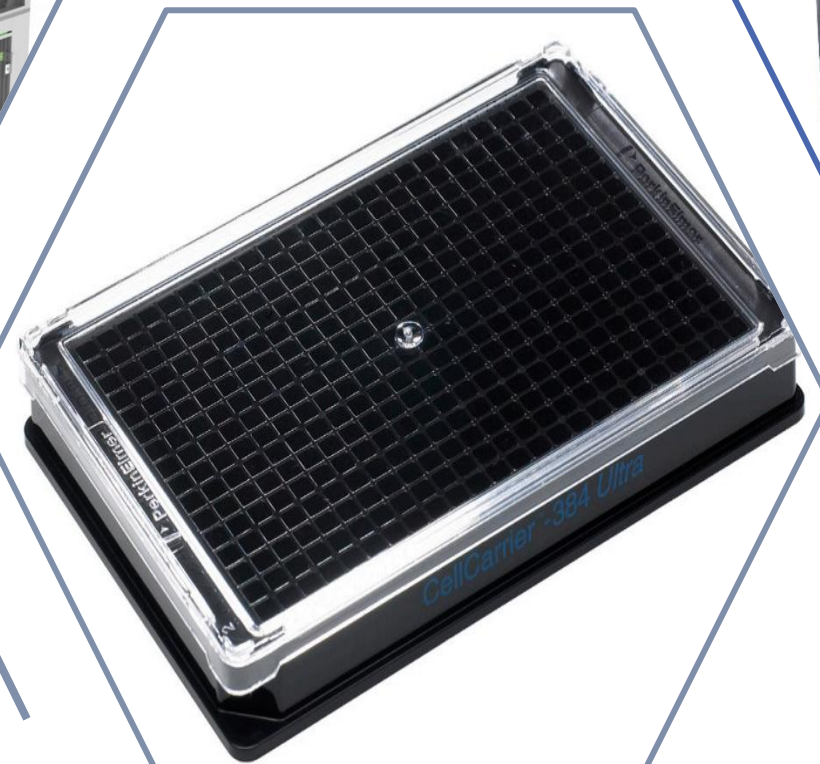
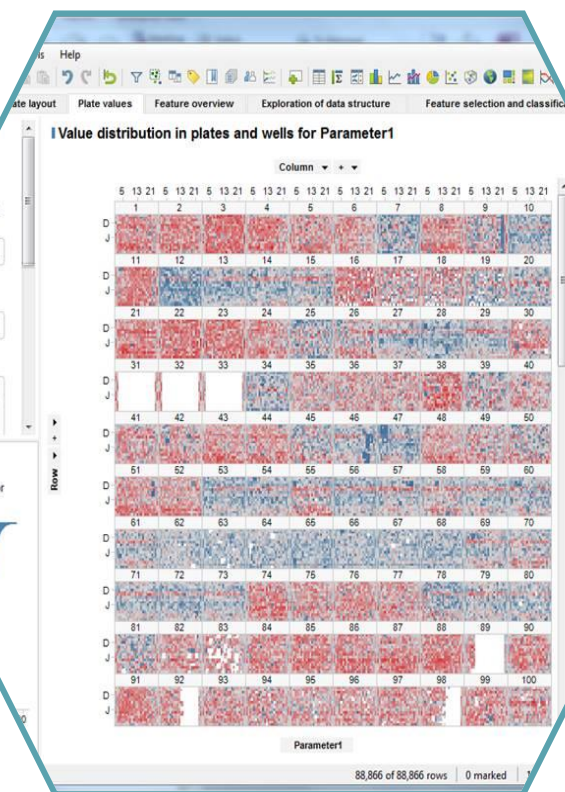
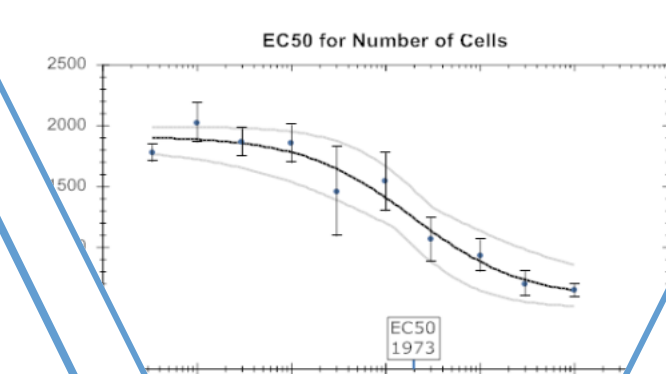
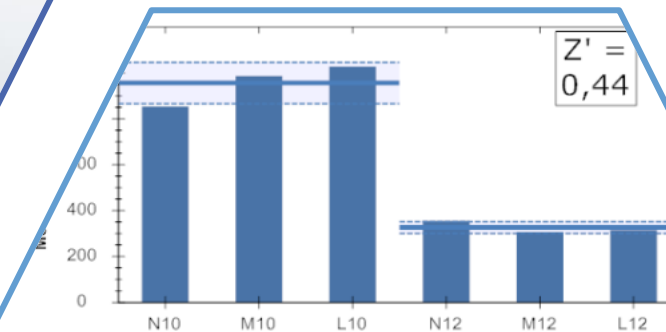
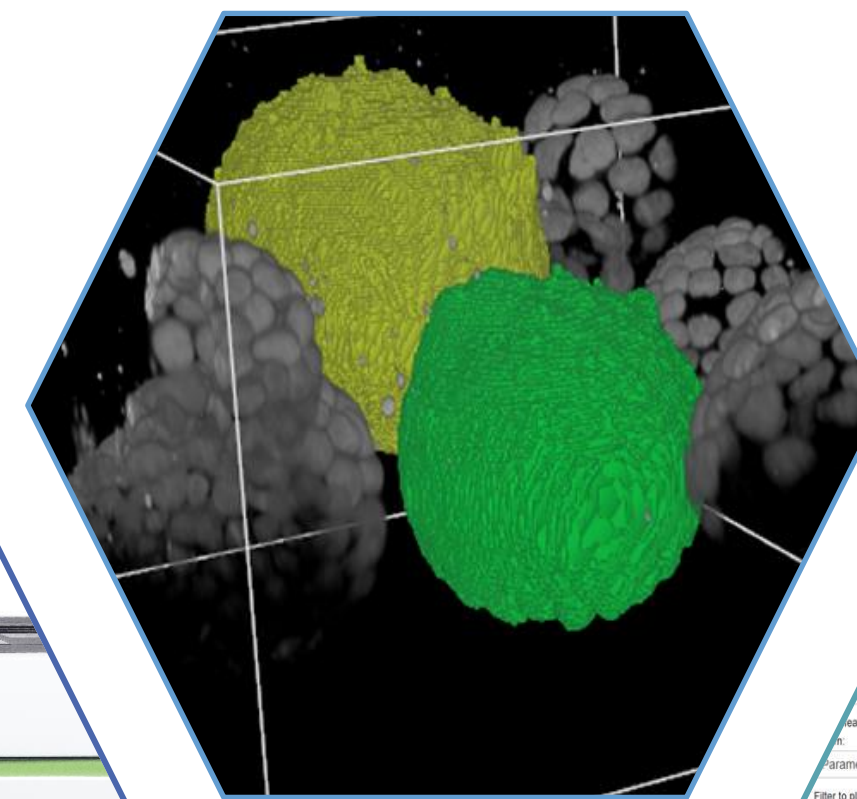
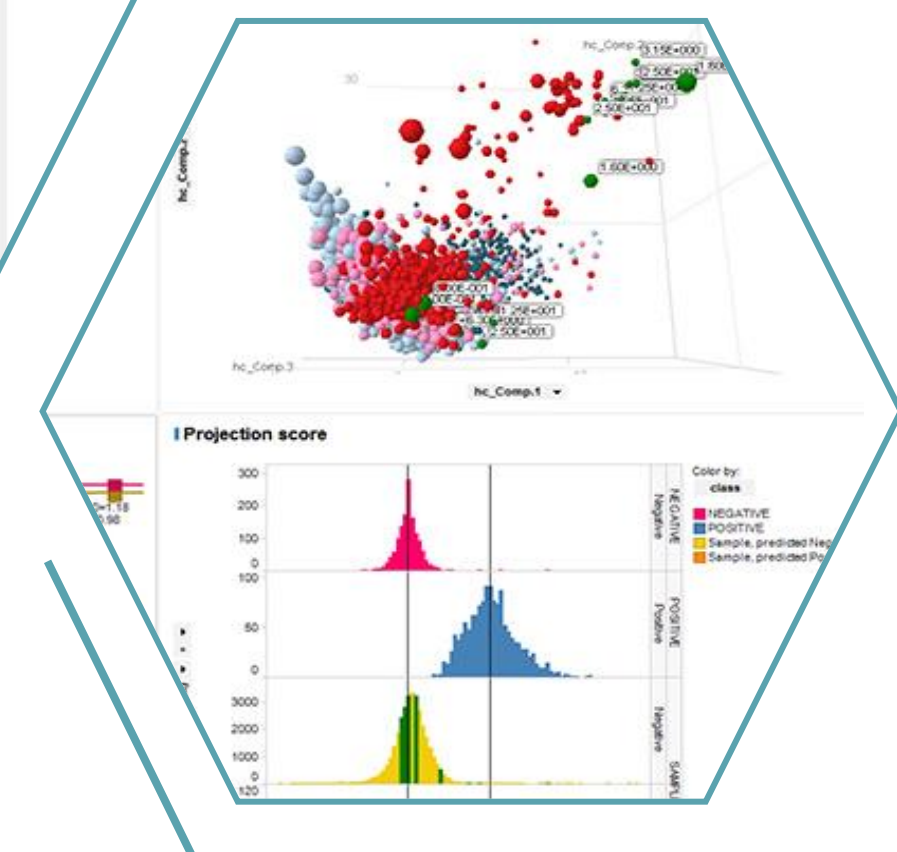


Image Analysis

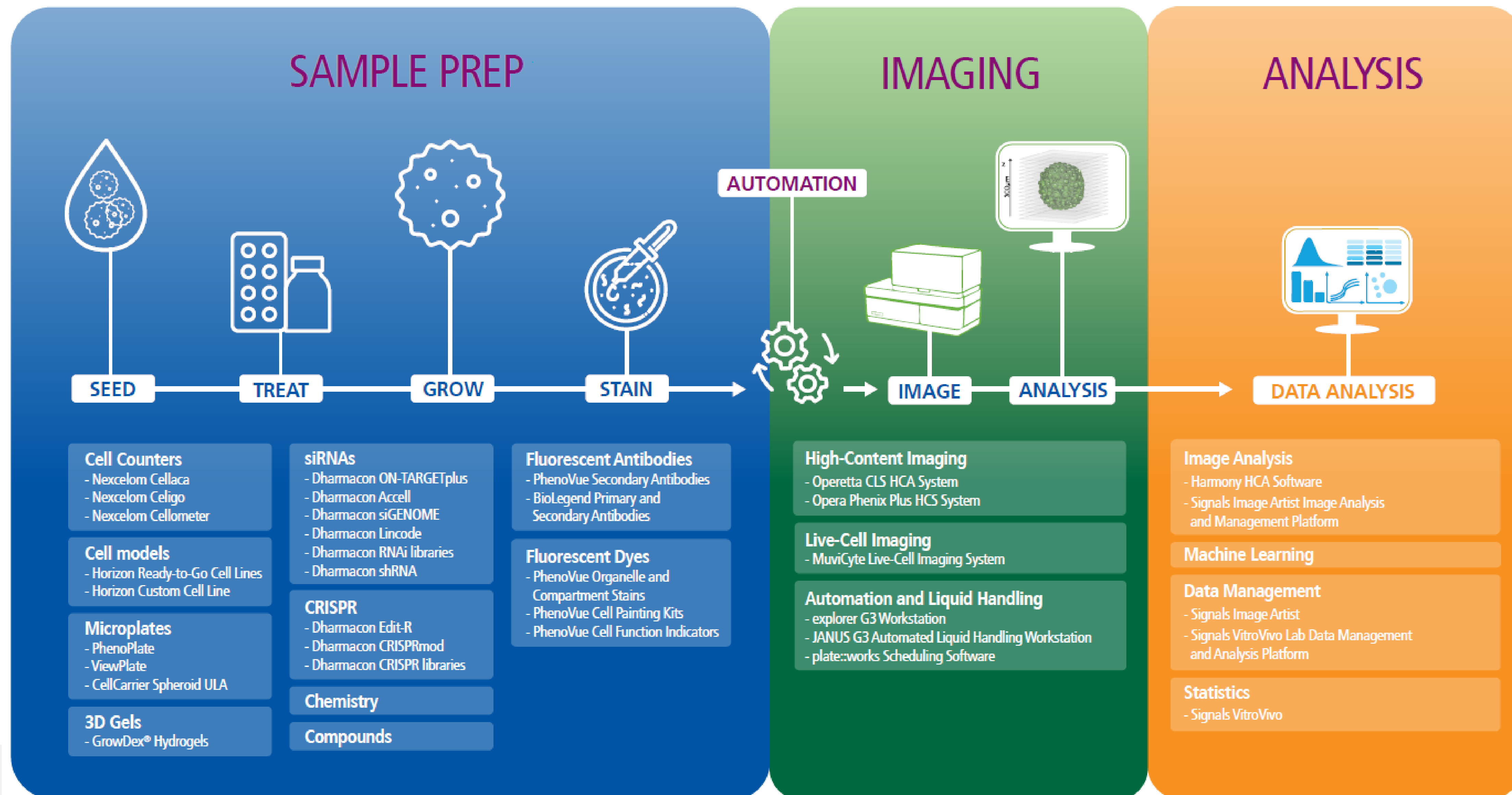


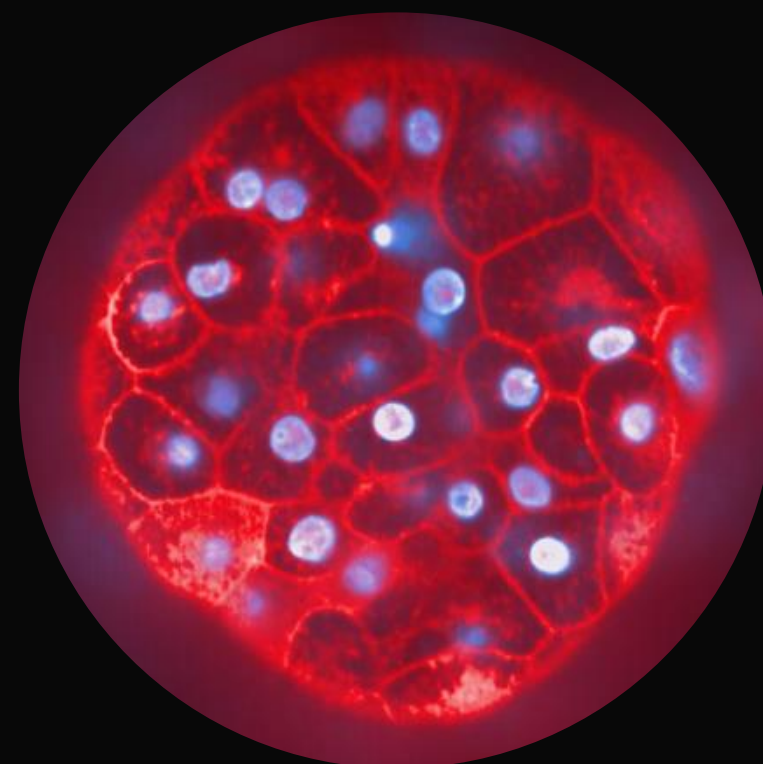
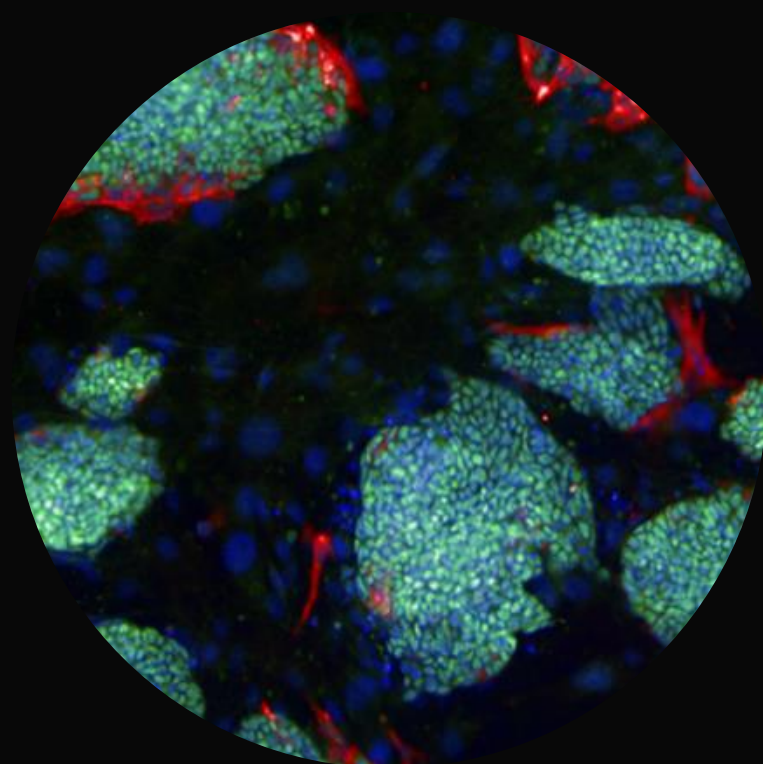
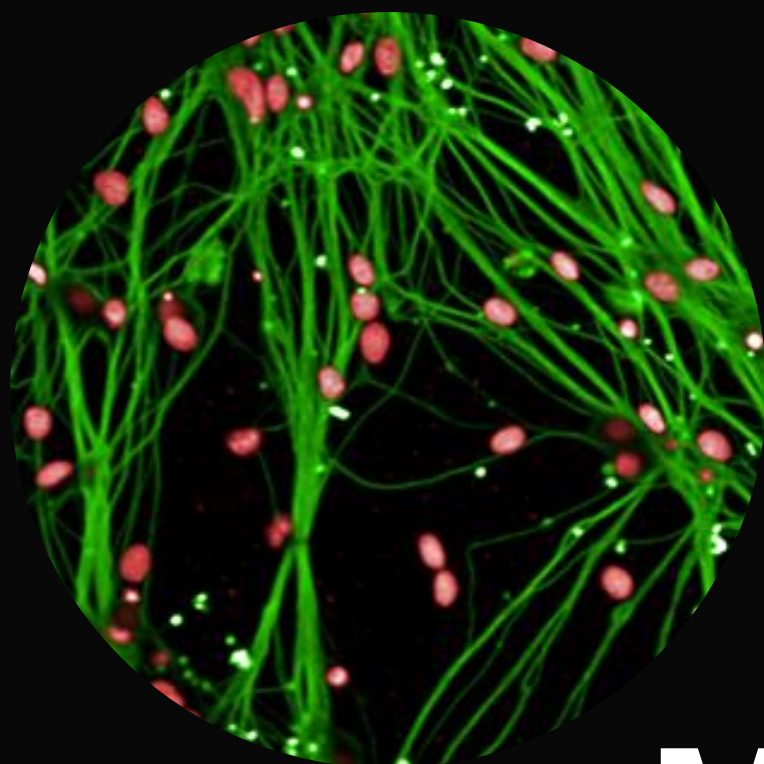
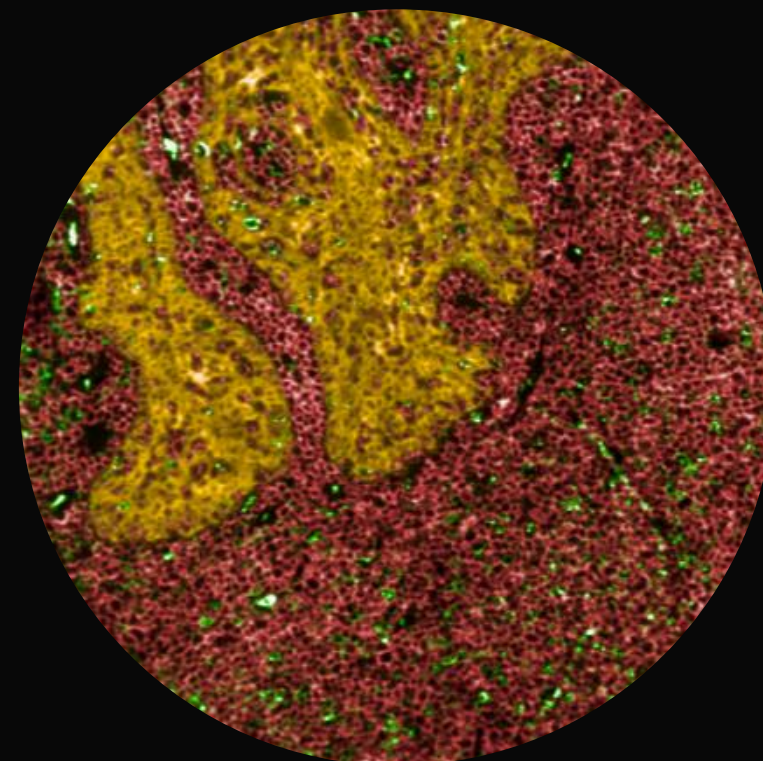
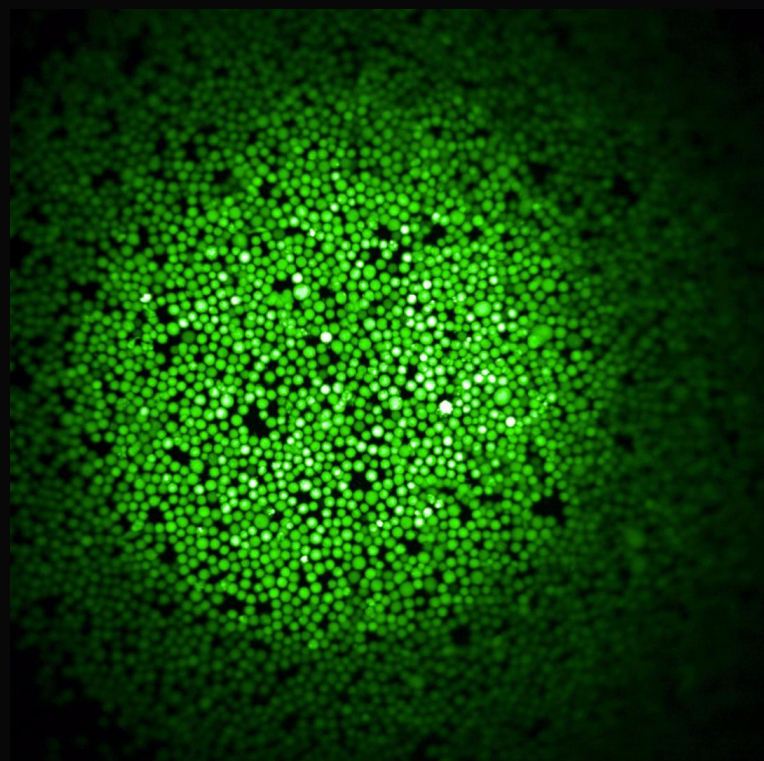
Profiling & Hit Selection



NOUVEAUTES PerkinElmer

Acquisitions : Cysbio, Nexcelom, Horizon, BioLegend...
Développements internes : gammes PhenoPlate, Phenovue





MERCI !

