3D imaging of reconstructed skin model

Fluorescent Markers • 3D Cell Models • Light Sheet • Morphometric Quantification • Spatial Distribution • Dermatology

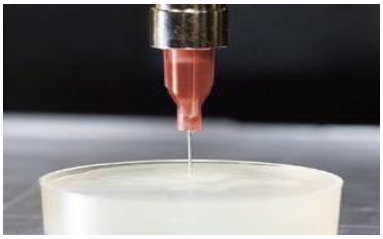
YOUR NEEDS

- Qualify 3D models
- Preclinical trials of a compound efficacy on skin structure

OUR SOLUTIONS

- Probe or *in toto* immunofluorescence labeling
- Light sheet fluorescence microscopy
- Quantification and multiparametric analysis

General Procedure



Prior to sample collection by Imactiv-3D:

- Sample generation and formalin fixation.

Tissue processing:

- Possibility to label the sample by probes or *in toto* immunofluorescence.
- Sample clearing.

Image acquisition:

- Light sheet microscopy, from 1X to 20X magnification.

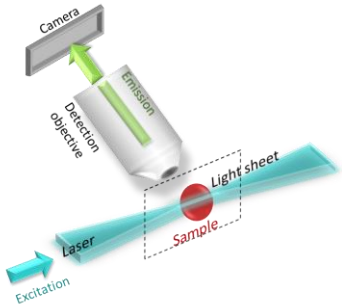
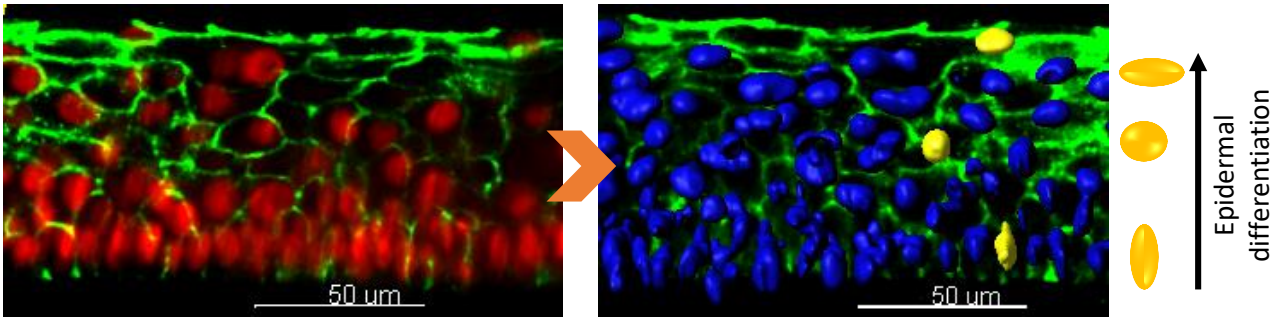


Image processing and analysis:

- Characterization of cell structure after segmentation: computation of parameters of interest, such as the number of nuclei, the presence of fibers, their morphology, their orientation, the layer thickness…
- 3D visualization with surface and volume rendering.

Application example: visualization and monitoring of reconstructed epidermis differentiation.

- Aim: 3D visualization of reconstructed epidermis and monitoring of morphological changes in nucleus shape during differentiation.
- Tissue labeling:
  - ✓ Propidium iodide (red) to monitor nuclei.
  - ✓ Phalloidin (green) to highlight cortical actin within skin cells.



- Images acquired using light sheet fluorescence microscopy.
- Nuclei volume reconstructed in 3D (right figure).

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