

3D quantification of a fluorescent marker in rodent tissues and organs



Fluorescent Markers • Tissues & Organs • Light Sheet • Advanced Media • Morphometric Quantification • Oncology

YOUR NEEDS

- Visualize anatomical structures in 3D
- Localize and quantify a specific fluorescent marker in 3D
- Preclinical study of treatment efficacy



General Procedure

Prior to sample collection by Imactiv-3D:

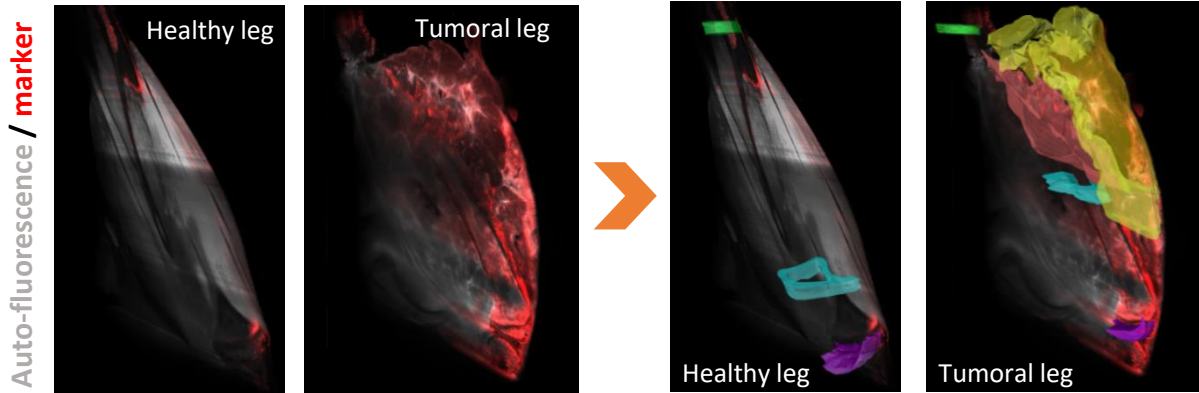
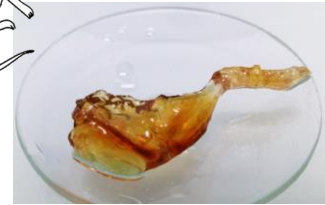
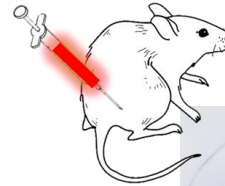
- In vivo labeling by infusion with a fluorescent marker of interest before euthanasia
- Formalin fixation of extracted sample

Image acquisition:

- Sample clearing
- 3D light sheet fluorescence microscopy with multi-position acquisition

Image processing and analysis:

- Segmentation of anatomical structures based on auto-fluorescence information (in grey)
- Quantification of fluorescence intensity within the identified volumetric structures (in red)



Application example: *in collaboration with*



ATLANThera

- Aim: quantification of a fluorescent marker in a mouse leg with a tumor compared to a healthy one.
- The auto-fluorescence signal intensity was used for the 3D identification of different anatomical structures (cortical bone, epiphysis, tumor), independently of the marker fluorescence. Their volumes were reconstructed.
- The marker fluorescence intensity was measured within the identified volumetric structures and compared between healthy leg and tumoral leg.

