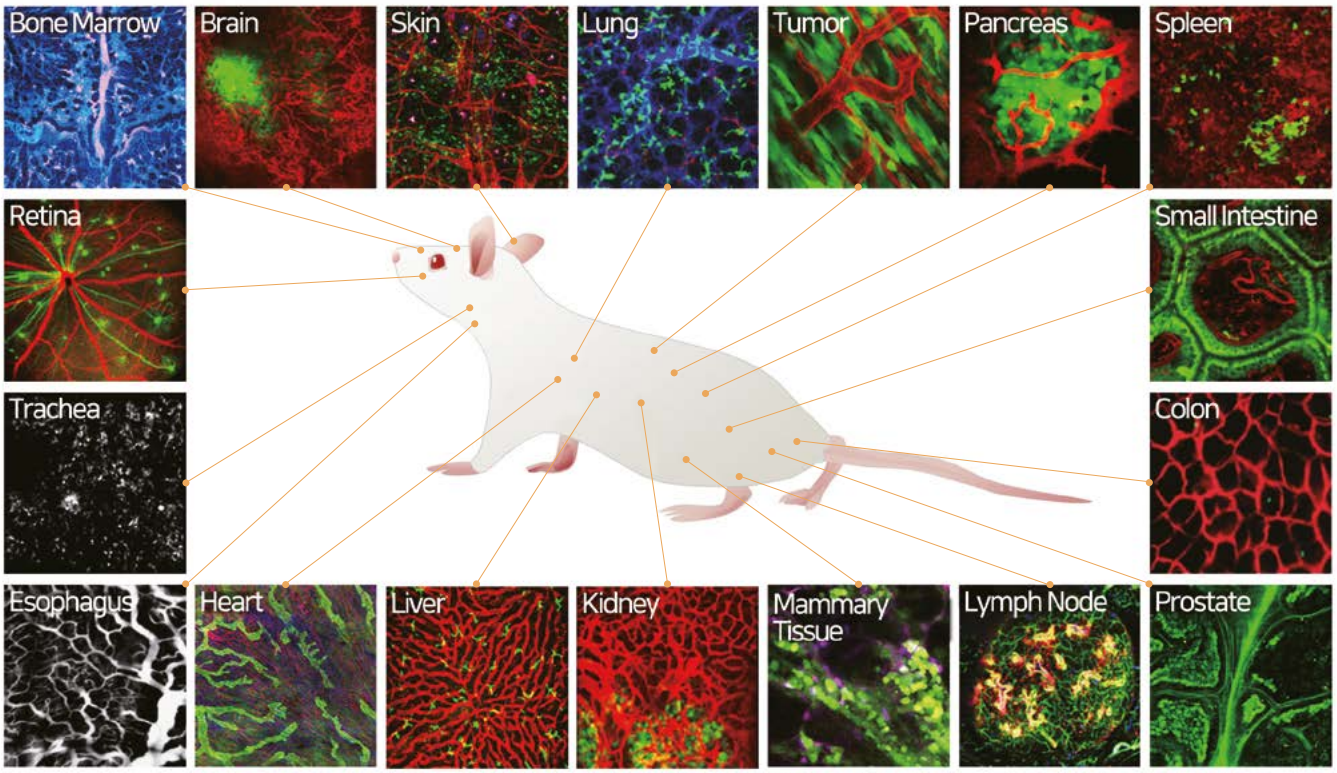
IntraVital Microscopy (IVM)
In Vivo Live Cell Imaging Platform

IVIM TECHNOLOGY



+ Thymus, Thyroid gland, Adipose Tissue, Lymphatics, Microcirculation ··· etc.

Step 1	Consulting for In Vivo Live Cell Imaging	Sample Demonstration & Test Imaging	Optimization of Experimental Plan
Step 2	Creating Animal Models of Various Human Diseases	IVM Imaging of Various Organs in Mouse Model	Image Processing & Analysis in Cellular Level

▪ Key Research Service

- Creating animal modelof various human disease (cancer, acute/chronic inflammation, chimera model)
- In Vivo 4D cell imaging, tracking & interaction monitoring
- In Vivo visualization of dynamic molecular & cellular mechanisms
- In Vivo imaging analysis of novel drug compound efficacy & action
- In Vivo imaging of drug delivery to target tissues & cells
- In Vivo imaging of various organs in mouse model (liver, lymph node, spleen, skin, retina, lung, brain, colon, pancreas, small intestine, prostate, kidney, heart, trachea, esophagus, bone marrow, thymus, etc.)

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Step1 : Consulting, Testing & Planning

- Consulting for In Vivo Live Cell Imaging
- Sample Demonstration & Test Imaging
- Optimization of Experimental Planning

In Vivo Fluorescence Labeling	▪ Fluorescence protein (FP) reporter mouse ▪ Injection of antibody-fluorophore conjugate (Vasculature / Lymphatics, various immune cells, stromal cells) ▪ Chimeric mouse generation by bone marrow transplantation ▪ Adoptive fluorescent cell transfer
Tissue Preparation for Imaging	▪ In vivo/In vitro/Ex vivo tissue sampling ▪ Choice of optimal mouse model ▪ Optimization of surgical procedures for tissue preparation
Imaging Parameter Establishment	▪ Imaging time-point & duration of imaging ▪ Required numbers of mouse models ▪ Imaging method (3D, large-area mosaic, time-lapse imaging)

Step 2 : Intravital Imaging & Analysis

- Creating Animal Models of Various Human Diseases
- IVM Imaging of Various Organs in Animal Model
- Imaging Processing & Analysis in Cellular-level

Various Mouse Models	▪ Xenograft & syngeneic cancer model using fluorescent cancer cell lines ▪ Acute & chronic inflammation (systemic injection, organ/tissue injury, Ischemia-reperfusion injury) ▪ Chimera model (stem cell transplantation, adoptive cell transfer)
Maintenance during Imaging	▪ Compensation of motion artifacts ▪ Usage of appropriate anesthesia method ▪ Body temperature maintenance, 37°C ▪ Maintenance of tissue homeostasis ▪ Blood circulation maintenance ▪ Minimizing photobleaching
Image-based Cellular-level Analysis	▪ Cell dynamics (cell movement, motility, cell trafficking, homing) ▪ Cell distribution, Cell death / survival ▪ Cell-microenvironment, cell-cell interaction ▪ Delivery & accumulation into organs ▪ Changes in vasculatures

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