Key Research Service
- Creating animal model of various human diseases (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.)
IntraVital Microscopy (IVM)
In Vivo Live Cell Imaging Platform

Step 1: 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