

Preclinical Imaging

FRED HUTCHINSON CANCER RESEARCH CENTER
RESEARCH ADMINISTRATION
SEATTLE, WA • 501(C)(3) NONPROFIT



The Preclinical Imaging core provides state-of-the-art in vivo imaging technology and infrastructure to support basic and preclinical research. We offer a diverse array of imaging modalities, including ultrasound, optical imaging, MRI, micro-CT and multiphoton microscopy.

Our staff includes experienced imaging specialists who train users on equipment operation, consult on study design, and image analysis, and perform imaging studies and analysis on request.

LEARN MORE

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LagoX

Our bioluminescence and fluorescence optical imaging systems can non-invasively measure fluorescent or bioluminescence signals to track whole body tumor progression with high throughput.

Bioluminescence imaging measures light emission resulting from an enzymatic reaction catalyzed by one of several different luciferase enzymes. The amount of light produced by the optical reporter of tagged cells is proportional to the number of cells expressing the enzymatic activity. This is an excellent, high throughput method for tracking whole body tumor progression.

Fluorescence imaging uses LED illumination resulting in stronger signals. From probes, fluorescent dyes, or proteins labeled to cells of interest you will receive less SNR and earlier detection. Multiple fluorophores can be simultaneously imaged within the same sample and distinguished from one another to provide multiplexed information with high cellular specificity.

X-ray 10-50 keV power source producing only 3 mGy (compared to 900+ mGy from the microCT) dose per acquisition. The X-ray overlay provides a more clear anatomical location of optical data.

Sensitivity: minimum detectable radiance is 45 photons/sec/cm²/sr

Throughput: Up to 10 animals per image

Image acquisition time: milliseconds – seconds

Detection bands (Emission filters): 14 excitation filters (360, 405, 430, 465, 500, 535, 570, 605, 640, 675, 710, 745, 770, 805 nm), and 20 emission filters with 20 nm bandwidth (490, 510, 530, 550, 570, 590, 610, 630, 650, 670, 690, 710, 730, 750, 770, 790, 810, 830, 850, 870 nm)

Analysis software: [Aura](#) from Spectral Instruments



