Preclinical Imaging Facility (PIF)

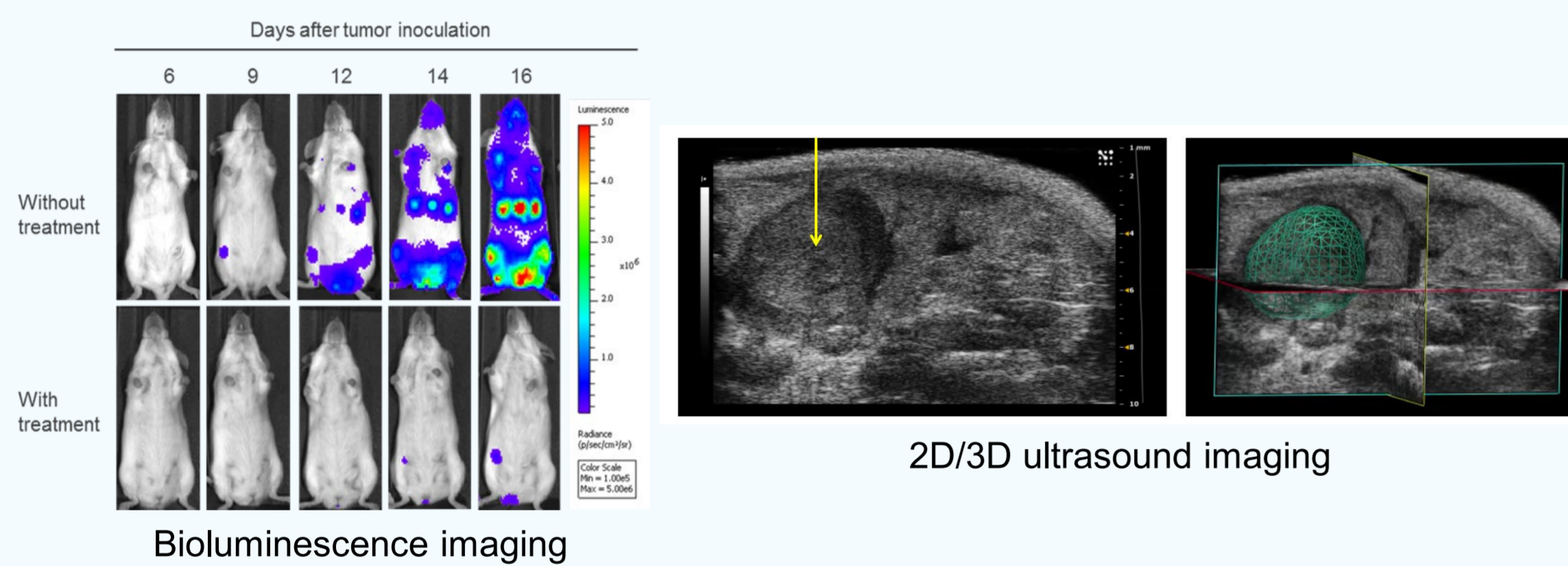Ying Zhao [1,2], Manon Renault [1,2], Jia Sun [1,2], Moustapha Hassan[1,2]

1. Preclinical Imaging Facility, Preclinical Laboratory, Karolinska University Hospital; 2. ECM, BCM, Department of Laboratory Medicine, Karolinska Institutet,141 86 Huddinge Sweden

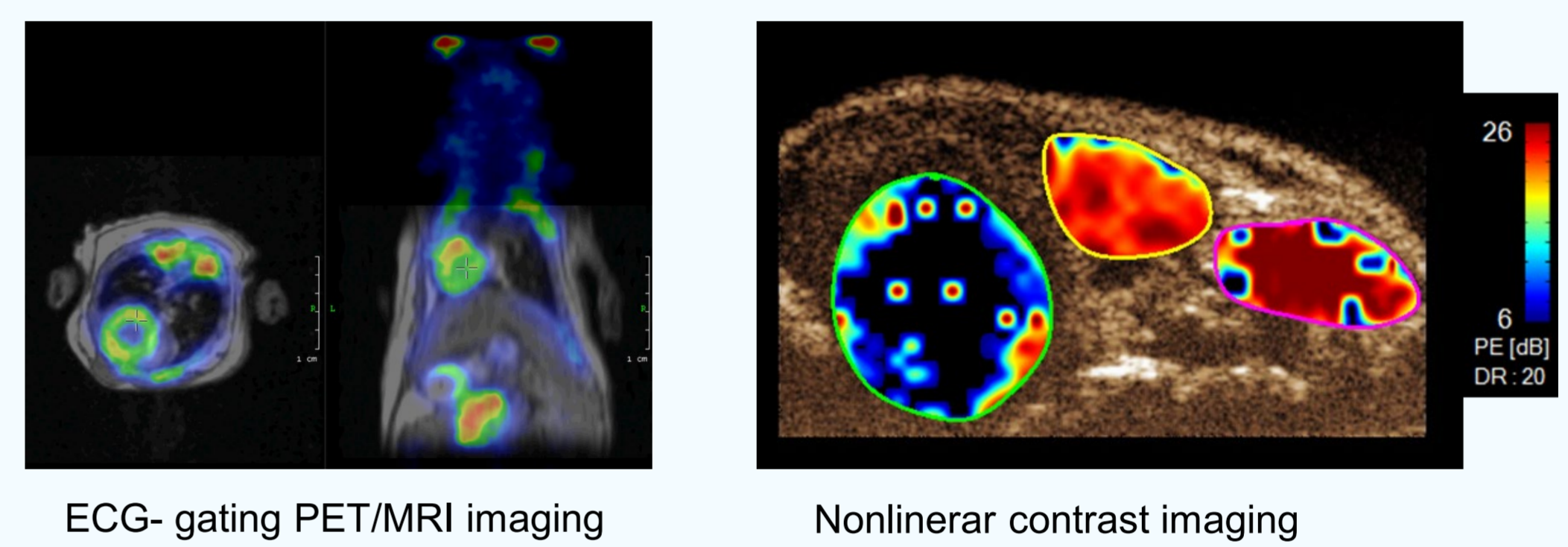*Quantum GX2-CT*

NanoScan PET-MRI

Mission

- Provide comprehensive possibility to perform multi-modality imaging studies.

- Develop new methods and techniques that are specific for the research performed at K-Huddinge / KI-Syd incl. cancer, regenerative medicine, transplantation, molecular therapy and cell therapy (ATMP).
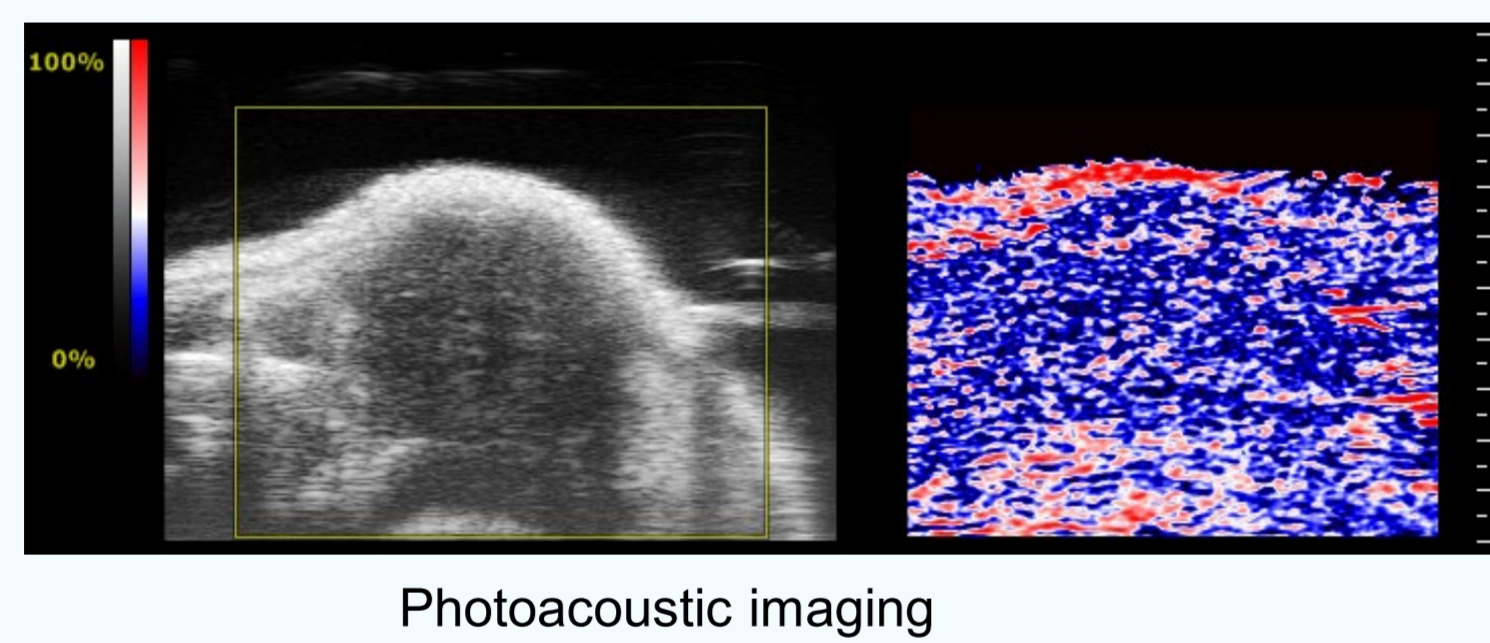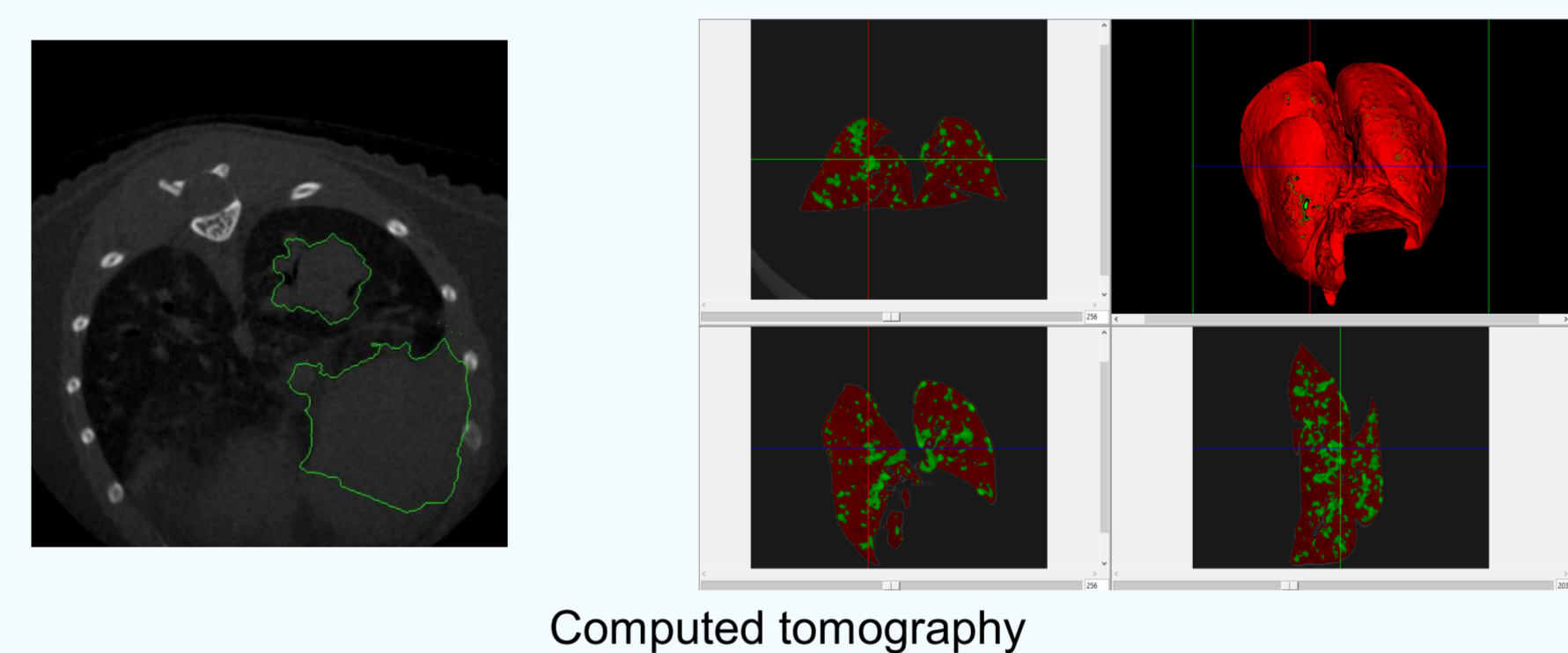
PET · CT · IVIS · MRI · MPI · US/PA — **PKL-PIF**

Vevo LAZR-X

MOMENTUM Magnetic particle imaging

Spectrum

Cancer development and therapeutic effect

Days after tumor inoculation — 6, 9, 12, 14, 16. Without treatment / With treatment

Bioluminescence imaging

2D/3D ultrasound imaging

Tumor metablism / perfusion

ECG- gating PET/MRI imaging

Nonlinerar contrast imaging

Oxygen saturation and hypoxia

Photoacoustic imaging

Lung cancer / metastases analysis

Computed tomography

Bone and fat analysis

16-month old mouse femurs

Sipa1^{+/+} Sipa1^{-/-}

Knockout   Wildtype

Computed tomography
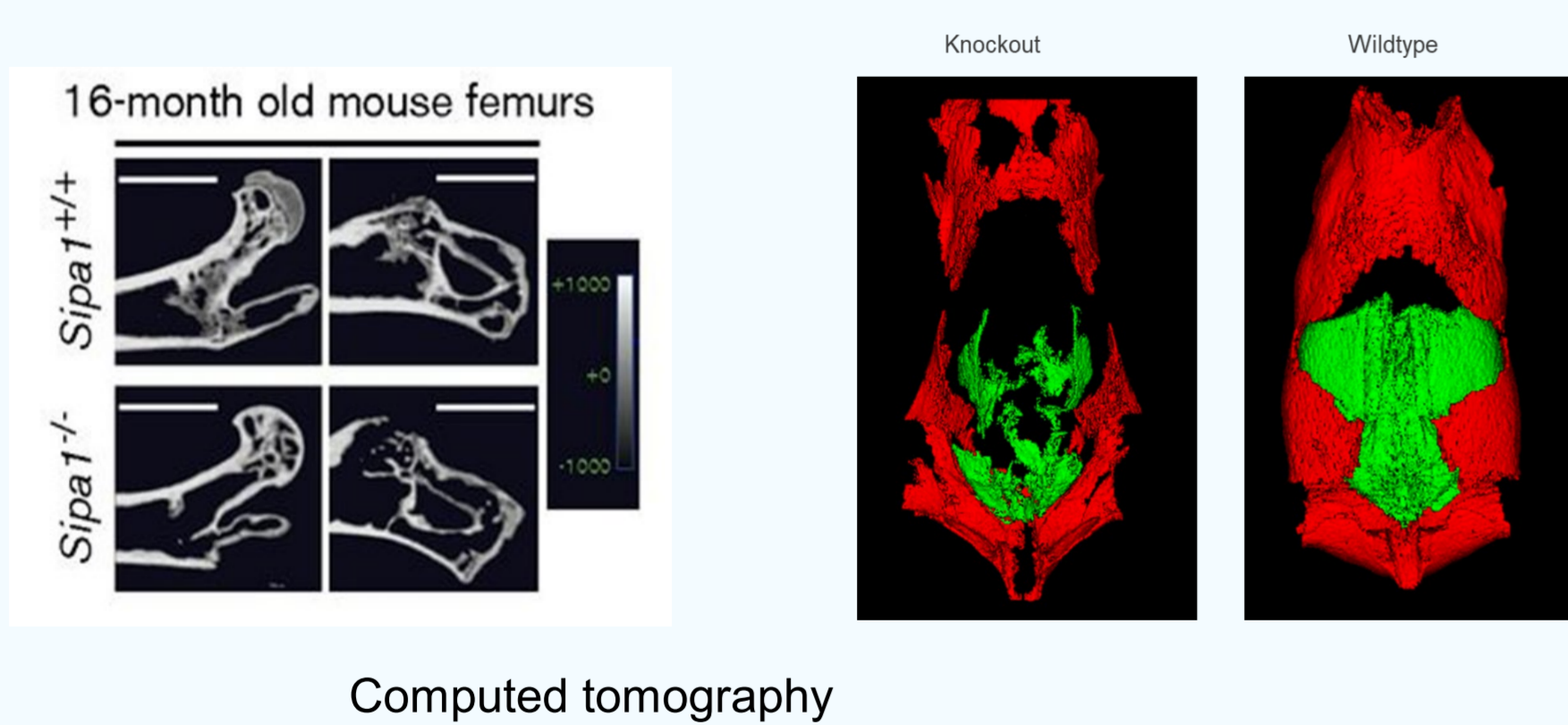
Nanoparticle / cell tracking

1 hr   4 hr   24 hr   48 hr

3D *in vivo* fluoroscence -CT co-registration
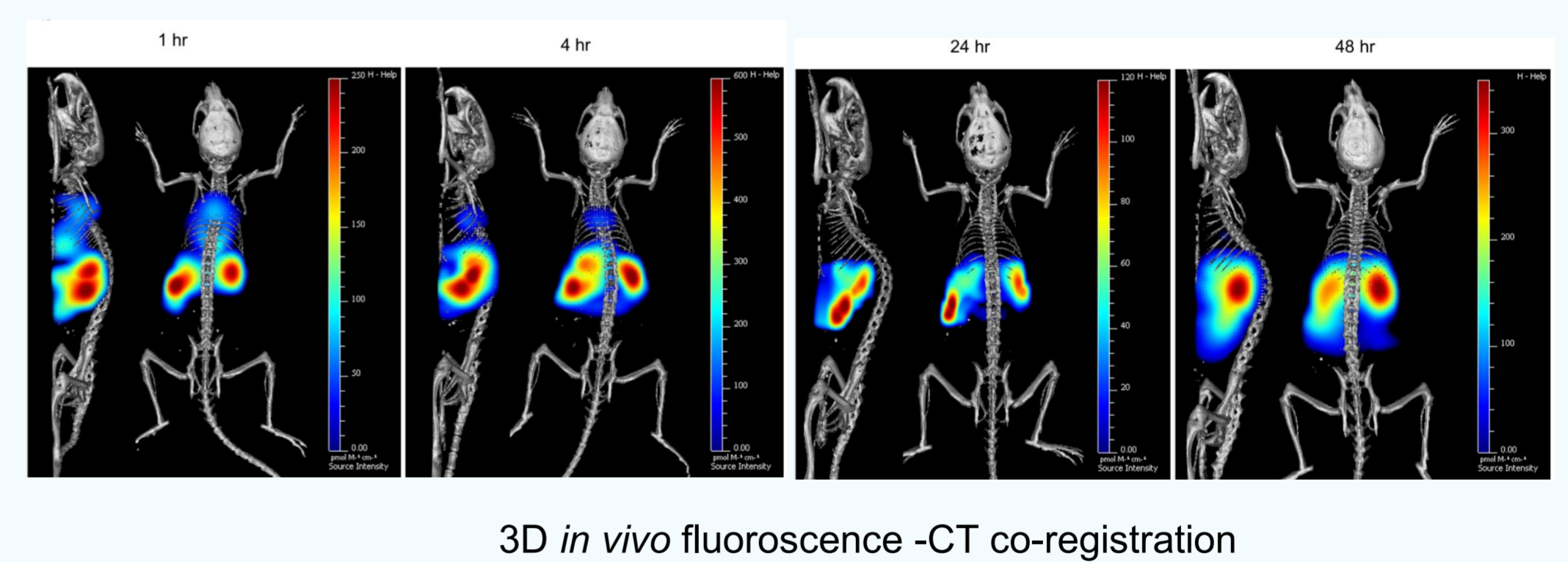
Cardiovascular function

Left ventricle long axis

Carotid artery

Echocardiography
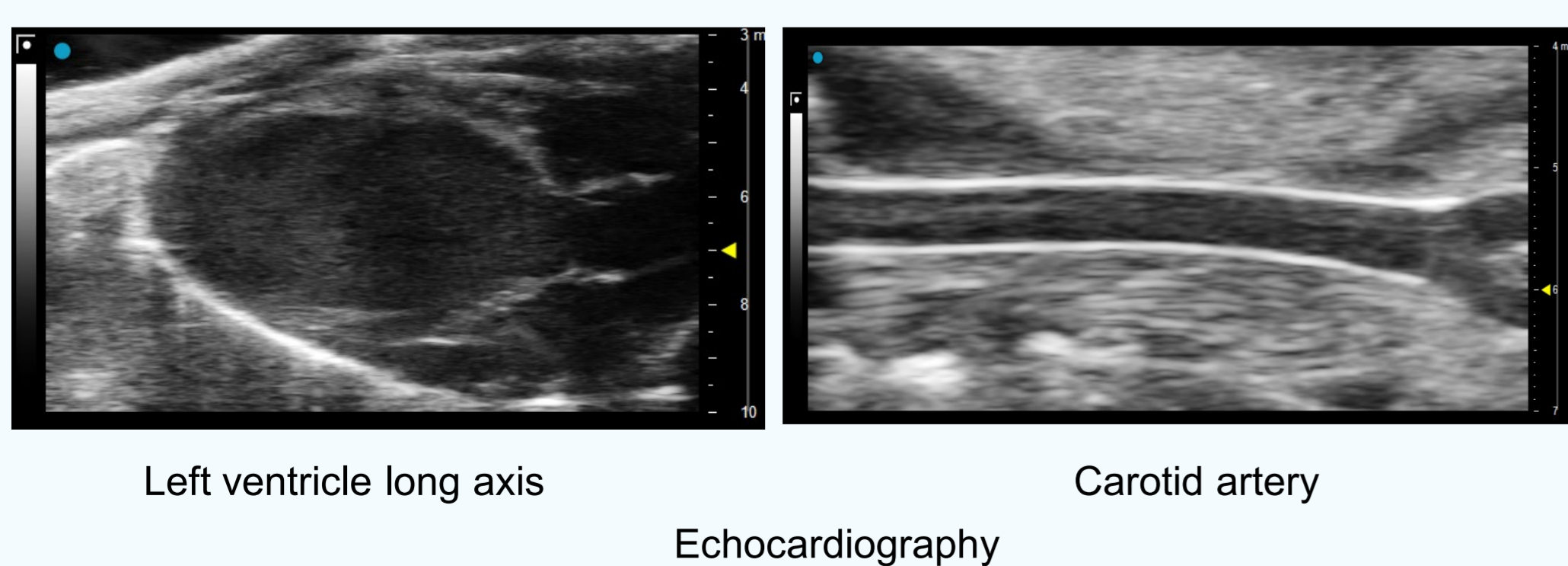
Liver function analysis

1 Tesla MRI: Gradient echo (GRE)

High-resolution soft tissue imaging

CIMED — CENTER FOR INNOVATIVE MEDICINE

Karolinska Institutet

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