

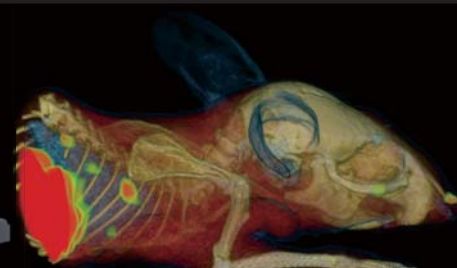
# Molecular Imaging Researches at Okayama Medical Innovation Center (OMIC)

おokayamaメディカルイノベーションセンター (OMIC) における分子イメージング研究  
AKEHI, Masaru 明日卓  
Collaborative Research Center for Okayama Medical Innovation Center (OMIC)



## OMIC Okayama Medical Innovation Center

Supporting of drug discovery and medical device development in the frontier molecular imaging technology



### Molecular Imaging Facilities

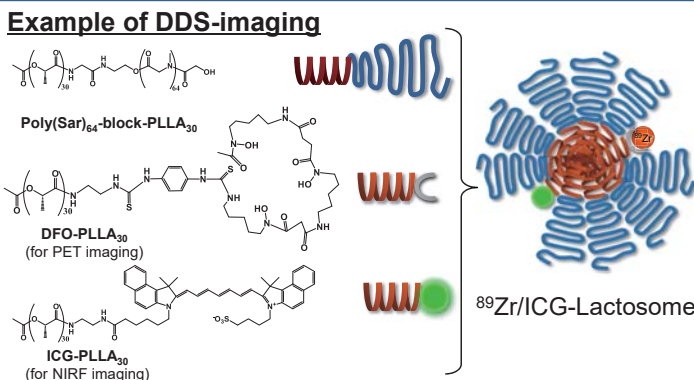
<b>Cyclotron</b>  HM-12S (Sumitomo Heavy Industries, Ltd.)	<b>PET camera</b>  For small animals (Clairvivo PET, Shimadzu Corp.)	 For middle-sized animal (Eminence STARGATE, Shimadzu Corp.)	<b>Mass Imaging Spectrometry System</b>  CHIP-1000, and AXIMA Performance (Shimadzu Corp.)	<b>Optical Imaging System</b>  IVIS Spectrum (Xenogen Corp.)
---	--	---	---	--

### Our Focus

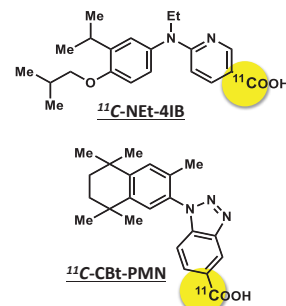
- OMIC is focusing on the production and application of positron emitters with long relatively half-life, such as **Copper-64 and Zirconium-89**.
- One can perceive the pharmacokinetics of large molecular-sized drugs such as antibody drugs in the long term.

### DDS-imaging

- Use therapeutic nanoparticles for molecular targeting.
- Visualize biodistribution by PET, before or simultaneously with treatment.
- Predict and monitor therapeutic effect.

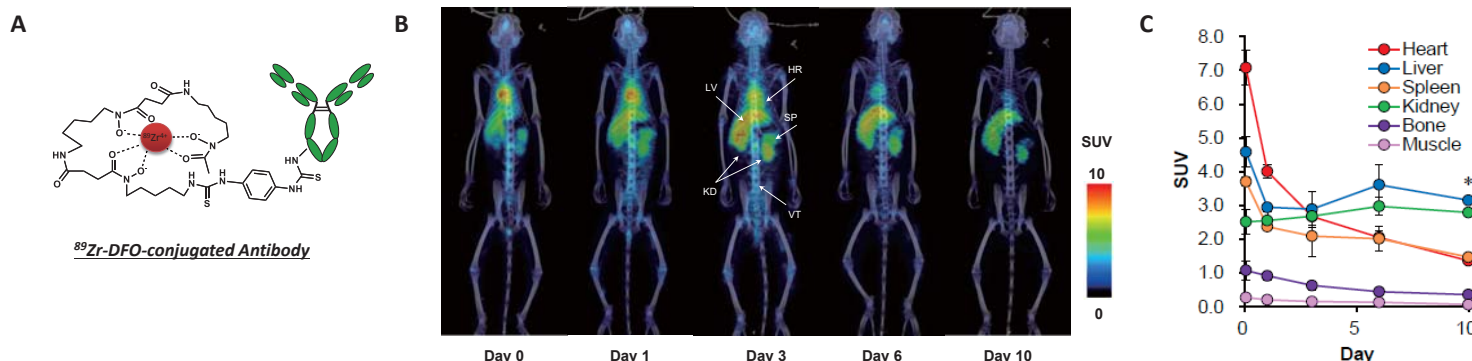


### <sup>11</sup>C-PET Tracers



New <sup>11</sup>C-Labeled RXR Partial Agonist  
\* Developed by Dr. Kakuta et al.

### PET images of non human primates injected with radiolabeled antibody



(A) IgG was conjugated to deferoxamine (DFO) with DFO-Bn-NCS, and labeled with <sup>89</sup>Zr (half life time: 78.4 hr).

(B) Healthy cynomolgus macaques were injected with 9-16 MBq of <sup>89</sup>Zr-IgG, and PET/CT images were acquired at 0, 1, 3, 6, and 10 days after the i.v. injection of IgG. HR; Heart, LV; Liver, SP; Spleen, KD; Kidney, VT; Vertebral body (bone).

(C) Time activity curves on organs. Data were represented as the mean ± SE.