

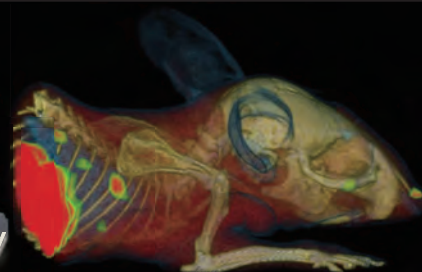
Technology of producing metal radionuclides and labeling antibodies under the GMP regulation at Okayama Medical Innovation Center (OMIC)

Takanori Sasaki, PhD, DVM, Assistant Professor,
Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences



OMIC Okayama Medical Innovation Center

Molecular Imaging Provides Innovation in Future Life Science and Drug Discovery



About us

OMIC is a collaborative research center at Okayama university utilizing molecular imaging techniques. We support the various stages of the drug discovery process.

Molecular Imaging Facilities at OMIC

GMP Area

Hot cells /Clean benches : Grade A (Class 100)
Hot Lab : Grade B (Class10,000)
Pre-room : Grade C (Class100,000)

Cyclotron



The cyclotron is capable of supplying ^{11}C , ^{13}N , ^{15}O , ^{18}F , ^{64}Cu and ^{89}Zr .

Hot Laboratory



Two unit-type hot cells that store several PET probe synthesizers are installed.

PET imaging systems



By obtaining the distribution as a tomographic image by PET, the system enables the analysis of pharmacokinetics and pharmacodynamics.

Antibody labeling technology

^{64}Cu Production

^{64}Ni target

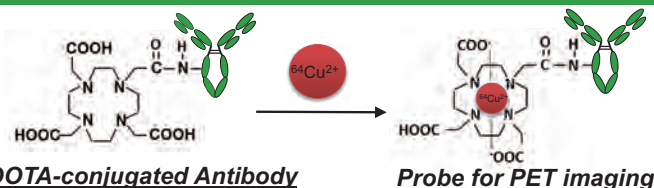
Proton irradiation, $^{64}\text{Ni} (p, n) ^{64}\text{Cu}$

Chemical separation
(by Metal separation/purification system)

^{64}Cu (purified)

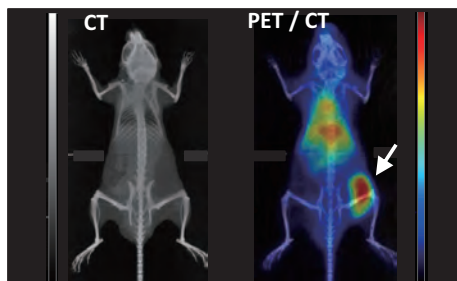


Labeling antibody with ^{64}Cu



Exemplified application

PET Imaging by using antibody



PET imaging of tumor xenograft-bearing nude mice with the ^{64}Cu -DOTA-anti-tumor antibody
The antibody-labeled with ^{64}Cu binds to a specific tumor antigen and radioactivity accumulates in tumor lesion (white arrow)

About our Information on Website

OMIC

Search

www.okayama-u.ac.jp/user/crc

Collaborative Research Center for Okayama Medical Innovation Center (OMIC)
Okayama University Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences,
2-5-1 Shikata-cho, Kita-ku, Okayama 700-8558, Japan Tel: +81-86-235-6529
E-mail address : crc-omic@md.okayama-u.ac.jp

OKAYAMA UNIV.