Invicro
A Konica Minolta Company

Advanced Pathology Services

Autoradiography (ARG)

Sophisticated Nuclear Imaging Solutions to Answer Complex Questions

Invicro offers 2D and 3D autoradiography services to evaluate radiotracer distribution in whole animals and organs. This imaging technique is complimentary to *in vivo* nuclear imaging modalities. Our experienced team of research scientists possess the knowledge to design, run, analyze data and report results to provide the insights you need to accelerate your drug discovery programs. ARG allows for the detection, visualization and quantitation of tracers to support ADME studies and determine drug pharmacokinetics (PK) and drug penetration into specific targets.

CORE APPLICATIONS

- Biodistribution and quantitation of radiotracers
- Build 3D models from 2D Autoradiolumino-grams to quantify drug distribution in whole organs or animals
- Radioligand binding studies for receptor characterization
- Quantitative whole body autoradiography (QWBA) to determine organ biodistribution

ADVANTAGES

- **Quantitative:** Quantify multiple classes of small molecule drugs and biological therapeutics
- **Sensitive:** Detects nanocurie amounts of radiotracer introduced into biological systems
- **High Resolution:** Delivers highest resolution on the micron scale compared to traditional *in vivo* imaging modalities
- **Medium Throughput:** Process multiple whole animal and dissected organs on the same block

3D Dual Isotope Autoradiography of an ADC to Evaluate Distribution in Tumor Models

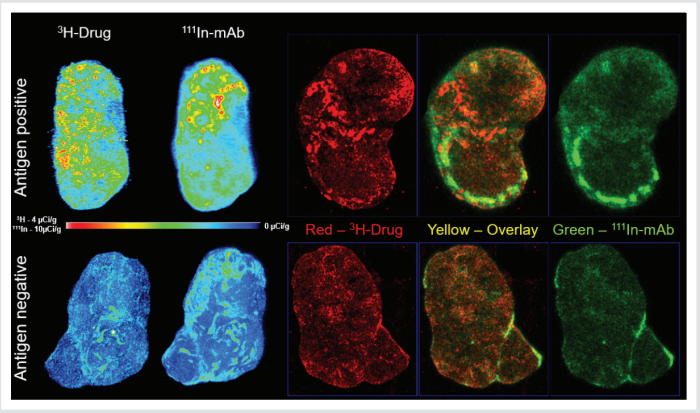

Figure 1: Visualizing the fate of the antibody drug conjugate (ADC) in antigen negative and positive tumors. An ADC was labeled with two different radioisotopes to visualize the distribution of the monoclonal antibody and the cytotoxic payload 96 hours post injection. Ilovich *et al.* (2018) *J. Nucl Med*.

3D Autoradiography of Brain Tissue to Assess Brain Activity Post-Drug Administration

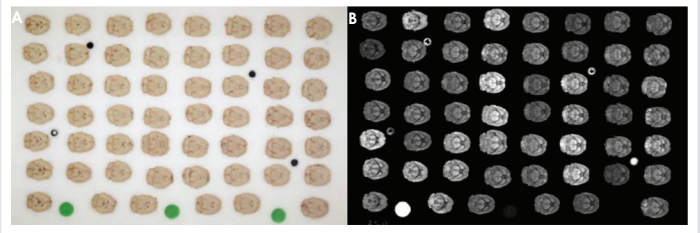

Figure 2: Using 3D ARG to determine the effect of test articles on brain activity with ^{14}C-2-deoxyglucose (^{14}C-2DG). A) 54 mouse brains were embedded and sectioned >200 times to acquire raw images. B) Sections were exposed to phosphor imaging plates with radioactive standards to measure radioactivity in the tissue and to produce autoradioluminograms. Qualitative and quantitative statistics (vehicle vs. test articles) were performed. Sullivan *et al.* (2018) NRM.