

For Immediate Release

Topic: NuPET™ Scanner installation at the University of Arizona

Ref: Cubresa website

Preclinical PET Scanner for Simultaneous PET/MRI Installed at the University of Arizona Could Contribute to Improved Tumor Assessment

Dual-modality approach being developed by the University of Arizona uses Cubresa's NuPET™ PET scanner and a dynamic MRI technique to more fully characterize cancerous tumors.

Winnipeg, MB – September 1, 2016 – Cubresa Inc., a medical imaging company that develops and markets molecular imaging systems, today announced the successful installation of their compact PET scanner called NuPET™ for preclinical PET (Positron Emission Tomography) and MRI (Magnetic Resonance Imaging) in the Department of Medical Imaging at the University of Arizona (UA).

PET and MRI are complementary imaging methods for better understanding disease and testing novel treatments in small animal subjects.

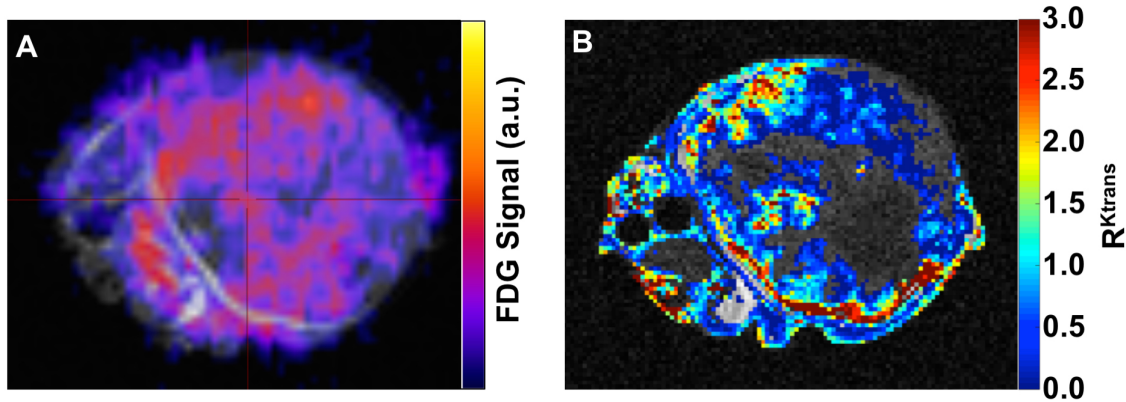
“The key is taking advantage of the strengths of each technique,” says Dr. Julio Cárdenas-Rodríguez, Research Assistant Professor of Medical Imaging at UA. “Dynamic Contrast Enhanced (DCE) MRI shows vascular permeability or the ‘openness’ of tumors for delivery and uptake of nutrients such as glucose, while PET imaging using ¹⁸F-fluorodeoxyglucose (¹⁸F-FDG PET) shows glucose consumption by those cells.”

Areas in a solid tumor that are less permeable should also have low ¹⁸F-FDG PET uptake, simply due to less contrast agent being delivered, and not necessarily due to low glucose consumption by the cells. However, areas with high permeability that should also have high tumor uptake, but in fact show low intracellular ¹⁸F-FDG PET uptake could be an indication that the tumor is dying. This simultaneous dual-modality approach leverages the functional capability and anatomical accuracy of DCE MRI and the tremendous sensitivity of ¹⁸F-FDG PET.

“A single imaging mode is not enough to reveal all the permutations and gain a diagnostically useful understanding of what’s going on inside the tumor,” says Dr. Marty Pagel, a UA Professor of Medical Imaging and Director of the Contrast Agent Molecular Engineering Laboratory. “But, as we refine our approach, I’m confident that better interpretations will be made, and that could translate into better outcomes for patients.”

“We’re proud to have the University of Arizona be the first US installation of the NuPET system,” says George Abe, CEO of Cubresa. “The groundbreaking preclinical work they are doing to translate their methods to the clinic could improve accuracy in tumor detection and characterization, as well as allow better assessment of responses to a treatment, and could ultimately save lives.”

Cubresa will showcase the NuPET™ scanner in Booth 207 at the WMIC (World Molecular Imaging Congress) annual meeting in New York, September 7–10, 2016.



Caption: Panel A shows a flank A549 lung tumor in a nude mouse with combined ^{18}F -FDG PET uptake (signal intensity in color) and T_2 -weighted anatomical MRI (grayscale). Panel B shows a relative permeability map for the tumor (color code) overlaid on the same anatomical reference as panel A. Regions identified as necrotic were not included in the DCE MRI analysis.¹ Image courtesy of the University of Arizona Department of Medical Imaging.

About Cubresa Inc

Cubresa is a medical imaging company that develops and markets nuclear imaging systems that enable researchers at leading universities, hospitals and pharmaceutical companies to non-invasively visualize and measure biochemical processes at the molecular level. Applications for Cubresa's products include preclinical drug development, disease research in oncology, neurology, and cardiology, as well as clinical diagnostics. Cubresa has operations in Boston, Massachusetts and Winnipeg, Manitoba. Visit www.cubresa.com for more information.

About the University of Arizona Department of Medical Imaging

The University of Arizona Department of Medical Imaging is a national leader in innovation, cost-effective diagnostic and minimally invasive therapeutic technologies, applications and research. The department provides the latest radiology services, serves as a destination site for groundbreaking medical imaging research and educates the next generation of leaders in imaging science and its applications. For more information:

<http://medicalimaging.medicine.arizona.edu/>

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¹ Reference: Cárdenas-Rodríguez J, Howison CM, Pagel MD. A linear algorithm of the reference region model for DCE-MRI is robust and relaxes requirements for temporal resolution. Magnetic resonance imaging. 2013 May 31;31(4):497-507