

HEALTH & ENVIRONMENT Seminar Series 2011

Preclinical and translational imaging in oncology, neurology and immunology

Bernd Pichler, University of Tübingen, Germany

AIT Austrian Institute of Technology
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Abstract

Preclinical imaging, and specifically molecular imaging methods such as positron emission tomography (PET) or single photon emission computed tomography (SPECT) as well as magnetic resonance imaging (MRI), experience enormous attention in the realm of basic biomedical and translational research. Modern imaging technologies hold a great potential to expand our current knowledge in many life science areas. Especially the prospect to obtain more detailed information in the field of oncology, neurology, immunology and infectious diseases in combination with the research of new and highly specific targets and biomarkers significantly enhances preclinical and translational research. The lecture will provide an overview of the strengths of different imaging technologies and will focus on scientific preclinical applications in oncology, neurology and immunology. It will also reveal our approaches and activities in biomarker and radiotracer development. Further, it will review the current state-of-the-art of combined PET/MRI for multiparametric imaging in basic science and clinical diagnostic.

Biosketch

Prof. Bernd Pichler is Chair of the Department of Preclinical Imaging and Radiopharmacy, Clinic of Radiology, University of Tübingen, Germany. Dr. Pichler studied electrical engineering with a focus on biomedical engineering and cybernetics at the Technical University of Munich. He finished his diploma thesis in 1997 at the Max-Planck-Institute for Physics, Munich and the Department of Nuclear Medicine, Technical University of Munich, in the field of detector development for small animal positron emission tomography. He earned his PhD in physics at the Department of Nuclear Medicine, Technical University of



Munich, in 2002 and subsequently worked as Assistant Biomedical Research Engineer (Assistant Research Professor) in the laboratory of Prof. Dr. Simon Cherry at the Department of Biomedical Engineering, University of California, Davis, USA, for two years. Since 2005 he is head of the Laboratory for Preclinical Imaging and Imaging Technology at the Department of Radiology, University of Tübingen, and received the *venia legendi* (habilitation in experimental radiology) from the Eberhard-Karls-University of Tübingen in 2007. In December 2007, Dr. Pichler accepted the call of the University of Tübingen for a full (W3) professorship in “Preclinical Imaging and Imaging Technology”. In 2008 he became head of the Radiopharmacy and in 2011 both, the Laboratory for Preclinical Imaging and the Radiopharmacy joined, to become the Department of Preclinical Imaging and Radiopharmacy with Prof. Pichler as head of the department.