NOMATEN SEMINAR

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Translational development of radiopharmaceuticals at Service Hospitalier Frédéric Joliot

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Abstract:
The Service Hospitalier Frédéric Joliot (Orsay, France) is a translational and multimodal molecular imaging facility. It gathers on the same site two cyclotrons for the daily production of positron emitters, R&D and GMP hot labs for the manufacturing of radiotracers and radiopharmaceuticals, an experimental and preclinical imaging platform comprising PET, PET/CT, SPECT/CT scanners and ultrasound devices and finally PET/CT, PET/MRI and MRI clinical scanners. Beside the clinical nuclear medicine practice, intensive research programs are dedicated to the translational development of new radiopharmaceuticals and the support and “derisking” in drug development. During this seminar, after a rapid technical overview of our facility, I will illustrate these translational developments with two selected examples:
1/ [^{18}F]DPA-714, a radiopharmaceutical to image neuroinflammation, from the identification of the chemical scaffold to the clinical trials: step by step development of a radiopharmaceutical.
2/ isotopic radiolabelling of dolutegravir, an antiretroviral drug, with fluorine-18 to decipher treatment limitations: hope and pitfall in the development of a complex radiosynthesis scheme and first images.

Bio:
Bertrand Kuhnast is head of the “Development of radiopharmaceuticals and imaging agents” within the BioMaps Unit (http://www.biomaps.universite-paris-saclay.fr/) located at the Service Hospitalier Frédéric Joliot (SHFJ). After an education in chemistry and a PhD dedicated to the radiolabelling and imaging of oligonucleotides, he joined the nuclear medicine Dpt of the Technical University in Munich for a two-years postdoctoral fellowship. He was recruited at the Service Hospitalier Frédéric Joliot in 2002 as radiochemist in the team of F. Dollé. From 2011 to 2014, he was responsible of the tracer and radiopharmaceutical manufacturing facility at SHFJ, then headed the Molecular Probe team within the IMIV unit and has held his current position since 2020. The team is today composed of 5 researchers in radiochemistry, a radiopharmacist, 5 technicians, 2 postdocs and 2 PhD students.