‘Molecular imaging of NAD$^+$-dependent deacetylase SIRT1 in the brain’

by

Assistant. Prof. Changning Wang

Harvard Medical School (USA) on the 14th Jan. 2021 (14:00 GMT+1) via zoom

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'Molecular imaging of NAD$^+$-dependent deacetylase SIRT1 in the brain'

by

Assistant. Prof. Changning Wang
Athinoula A. Martinos Center for Biomedical Imaging
Massachusetts General Hospital
Harvard Medical School, USA

at

14:00-15:00 (CET), Thursday on the 14th Jan. 2021

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Organizers:
Evandro F. Fang (UiO), Jon Storm-Mathisen (UiO), Menno P. Witter,
Lene Juel Rasmussen (KU), W.Y. Chan (CUHK)

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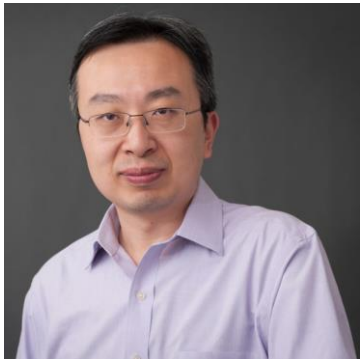

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Speaker: Changning Wang, PhD

Title: Molecular imaging of NAD^+-dependent deacetylase SIRT1 in the brain

Abstract:
Aging is an inevitable physiological process and the biggest risk factor of Alzheimer's disease (AD). Developing an imaging tracer to visualize aging-related changes in the brain may provide as a useful biomarker in elucidating neuroanatomical mechanisms of AD. Recently, we developed and characterized a new tracer that can be used to visualize SIRT1 in brains related to aging and AD by positron emission tomography (PET) imaging. Such a SIRT1 tracer was displayed desirable brain uptake and selectivity, as well as stable metabolism and proper kinetics and distribution in rodent and nonhuman primate (NHP) brains. This new tracer was further validated by visualizing SIRT1 in brains of AD transgenic mice, compared to nontransgenic animals. Our SIRT1 tracer not only enables, for the first time, the demonstration of SIRT1 in animal brains, but also allows visualization and recapitulation of AD-related SIRT1 neuropathological changes in animal brains. I will talk about PET basics and how we develop new PET probes.

Biography:
Dr. Changning Wang is an Assistant Professor of Radiology at Massachusetts General Hospital, Harvard Medical School. During my studies as a student in Peking University and Case Western Reserve University, I obtained training in molecular imaging, medicinal chemistry and organic chemistry. I joined MGH as a research fellow in December 2011 after receiving my doctoral degree in molecular imaging research on myelination. I have successfully developed novel imaging probes and synthetic method and produced more than 40 publications. At MGH, my work focused on developing novel PET radiotracers for brain imaging. In the past years, I have developed several novel PET imaging probes for translational imaging and human imaging. Among them, I have developed a novel PET radiotracer, termed [11C]Martinostat, as a robustly brain penetrant imaging agent with selectivity for class I histone deacetylase (HDAC). The exploratory IND for [11C]Martinostat was approved by FDA in late July, 2014 for first-in-human trials and it is the first tool of its kind available to characterize HDAC expression in the living human brain.