DukeNUS Medical School

Signature Seminar Series

Precision Medicine for the Brain: Example of Parkinson's Disease

ABOUT THE LECTURE

There is an urgent need to identify effective neuroprotective therapies for synucleinopathies such as Parkinson's disease (PD) and Diffuse Lewy Body Dementia (DLB). Recent emergence of genetic forms of PD has facilitated identification of potential targets for therapeutic development. One of the most promising and extensively studied targets has been lysosomal glucocerebrosidase (GCase) in patients with GBA1-linked PD and DLB. These patients exhibit loss of GCase activity in lysosomes which in turn results in downstream neuronal dysfunction. We found that wild-type GCase activity is also reduced in sporadic and genetic forms of PD, suggesting that wild-type GCase could serve as promising therapeutic target in synucleinopathies. We identified a positive feedback loop between alpha-synuclein and glucocerebrosidase in sporadic and genetic forms of PD (Mazzulli et al, Cell), and described convergence of mitochondrial and lysosomal dysfunction in midbrain neurons from PD patients (Burbulla et al, Science), as well as direct contacts between lysosomes and mitochondria (Wong et al, Nature). We found that this vicious cycle could be interrupted by activating wild-type GCase in PD.

Speaker: **Prof Dimitri Krainc**
Ward Professor & Chairman
Department of Neurology
Feinberg School of Medicine, Nortwestern

Host: **Prof Zhang Su-Chun**
Professor & Programme Director
Neuroscience & Behavioural Disorders Programme
Duke-NUS Medical School

Date: **Tuesday, 11 February 2020**

Time: **12.00 PM - 1.00 PM**
(Light refreshments will be served at 11.30 AM)

Venue: **Duke-NUS Medical School**
Amphitheatre, Level 2

Contact Person: **Ms Serene Wie, Duke-NUS Research Affairs Department**
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ABOUT THE SPEAKER

Dimitri Krainc, MD, PhD spent more than 20 years at Harvard Medical School where he completed his research training followed by a neurology residency and fellowship in movement disorders at Massachusetts General Hospital. He then served on the neurology faculty at MGH and Harvard Medical School until 2013 when he relocated to Chicago. The overarching goal of Dr. Krainc's research is to study molecular mechanisms of neurodegeneration.



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