DukeNUS Medical School

Signature Seminar Series

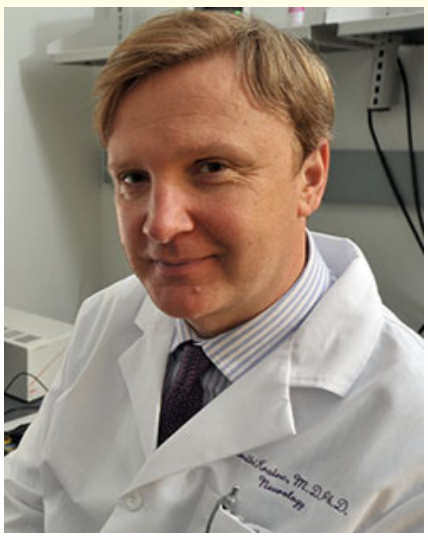
Neurodegenerative Disorders: From Molecular Mechanisms to Targeted Therapies

ABOUT THE LECTURE

The overarching goal of my laboratory has been to define key molecular pathways in the pathogenesis of neurodegeneration. We have focused on pathogenic mechanisms that occur in most neurodegenerative disorders such as accumulation and deficient degradation of aggregation-prone proteins and mitochondrial dysfunction. As a general strategy, we are studying rare genetic diseases, in particular those with mutations in genes that play a role in these common pathogenic pathways with a goal of identifying specific targets for therapeutic development in neurodegeneration. We found that the convergence of these pathogenic phenotypes in various forms of PD was mediated by dopamine oxidation that was detected in human neurons but not in mouse dopaminergic neurons. Since dopamine oxidation leads to formation of neuromelanin, these findings also explained why neuromelanin is not normally found in mouse midbrain dopaminergic neurons. Based on these findings, we developed targeted therapeutic approaches in human neurons that partially ameliorated pathogenic phenotypes in dopaminergic neurons from patients with multiple genetic and sporadic forms of PD.

Speaker: **Prof Dimitri Krainc**

Chair, Department of Neurology
Feinberg School of Medicine
Northwestern University



Host: **Dr Cao Mian**

Assistant Professor
Programme in Neuroscience & Behavioural Disorders
Duke-NUS Medical School

Date: **Thursday, 12 January 2023**

Time: **3.00 PM - 4.00 PM**

Venue: **For in-person attendance:**
Duke-NUS Medical School
Amphitheatre, Level 2

For virtual seminar (via Zoom), please register *HERE*.
(Please rename your login name to include your institution to facilitate admission)

Contact Person: **Ms Kathleen Chan (kathleen.chan@duke-nus.edu.sg)**
Duke-NUS Research Affairs Department

ABOUT THE SPEAKER

Dr. Dimitri Krainc is the Ward Professor and Chairman of the Department of Neurology and Director of the Center for Neurogenetics at Feinberg School of Medicine in Chicago. Previously, he spent over two decades at Harvard Medical School where he completed his research and clinical training and served on the neurology faculty. Dr. Krainc is a founder of two biotechnology companies and serves as Venture Partner at OrbiMed. He received numerous awards for his work and is an elected member of the Association of American Physicians and the National Academy of Medicine.

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