



The Singapore Bioimaging Consortium (SBIC)
presents a seminar

on

"Imaging of Brain Dopamine : From Test Tube to the Clinic"

Speaker: Dr Paul Cumming
Visiting Associate Professor
PET Center, Aarhus Kommunehospital
Denmark

Date : Thursday, 1 November 2012
Time : 9.00am – 10.00am
Venue : SBIC Seminar Room
11 Biopolis Way
Level 2, Helios Building
Singapore 138667
(Please use Level 1 entrance)

Abstract

One of the first useful tracers for molecular brain imaging was [18F]-fluoro-L-DOPA (FDOPA), a positron-emitting analogue of levodopa. However, the kinetic analysis of FDOPA uptake in brain is formidably complex due to the formation in blood of a brain-penetrating metabolite, and due to the eventual washout of decarboxylated FDOPA metabolites formed with brain dopamine terminals. The complexities of FDOPA kinetics can be reduced to steady-state index of the pseudo-irreversible trapping of FDOPA in dopamine terminals, namely V_d . This approach reveals a pronounced decline in dopamine storage capacity in brain of Parkinson's disease patients, and, surprisingly, also in patients with schizophrenia, in whom dopamine synthesis is "churning", such that an elevated rate of synthesis does not compensate for increased dopamine catabolism. Recent studies have emphasized the relationship between FDOPA kinetics in healthy subjects and individual traits related to cognitive style and fluid intelligence. A compilation of findings of PET studies with other dopamine markers gives new insight into the nature of personality, and the risk for addiction or compulsive behavior.

About the Speaker

Born in Edmonton, Canada, Paul Cumming received a B.Sc. degree in Chemistry and an MSc/PhD in Psychiatry and Neuroscience from the University of British Columbia. After a post-doctoral Fellowship at the McConnell Brain Imaging Centre of McGill University, followed by a four year term as Assistant Professor at McGill, he relocated in 1998 to the Aarhus University PET Centre in Denmark as Associate Professor. He spent a sabbatical in 2007 at the Psychiatric clinic of ETH Zurich working on the manuscript of a monograph entitled "Imaging Dopamine", which was published in

2009 by the Cambridge University Press; this book compiles the results of three decades of investigations of brain dopamine through molecular imaging. In 2008 he joined the Department of Nuclear Medicine of the Ludwig-Maximilians University, Munich.

--- Admission is free and all are welcome ---