Department of Pharmacology Seminar Series

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The effects of pregnenolone sulphate on schizophrenia-like behaviors in dopamine transporter knockout mice.

Schizophrenia is a complex disorder with multiple pathophysiologies. Apart from antipsychotics, there have been recent advances in the treatment of schizophrenia with alternative pharmacological agents such as neurosteroids. Pregnenolone sulfate (PregS), an endogenous neurosteroid in the central nervous system, is a positive allosteric modulator of the NMDA receptor, and plays a role in the modulation of learning and memory. Here, we study the actions of pregnenolone sulfate using dopamine transporter knockout (DAT-KO) mice, which exhibit endophenotypes that recapitulate certain symptoms of schizophrenia, including the psychomotor agitation, stereotypy, prepulse inhibition (PPI) deficits and cognitive impairments. We found that acute treatment of 80 mg/kg PregS could rescue hyperactivity, stereotypic activity and pre-pulse inhibition deficits in dopamine transporter knockout (DAT KO) mice, an established mouse model of schizophrenia. Additionally, ten-day 40 mg/kg PregS treatment also rescued the cognitive deficits in the DAT KO mice in the novel object recognition test and social transmission of food preferences test. These findings suggest that certain neurosteroids, such as pregnenolone sulfate, may be able to ameliorate certain behaviours in some preclinical models of schizophrenia. In addition, this talk will also present on the facilities for behavioural neuroscience made available at NUS by the Neuroscience Phenotyping Core.

Date: Thursday, 10 September, 2015
Time: 11:00 am – 12:00 pm
Venue: MD1-08-03E
Chairperson: A/Prof. Gavin Dawe

NUS National University of Singapore

NUHS National University Health System

PSS Pharmacological Society (Singapore)