
Seminar

Structure of the dopamine transporter A paradigm to understand neurotransmitter transport and inhibition mechanisms

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Neurotransmitter transporters play a crucial role in the uptake of released neurotransmitters in the synaptic cleft. Multiple pharmacophores and substances of abuse affect the function of these transporters resulting in either therapeutic or addictive outcomes. We solved the structure of a dopamine transporter (DAT) from a eukaryotic source to address key questions related to transport mechanism and pharmacology of neurotransmitter transport. X-ray structure of a DAT construct, optimized for greater stability and conformationally restrained to a drug bound state, was crystallized and solved at 3.0 Å resolution, in complex with a crystallization chaperone. The structure reveals mechanism of transport inhibition with tricyclic antidepressants and role of cholesterol in regulating DAT function.

Tuesday, June 10th 2014

11:30 AM (Tea/Coffee at 11:15 AM)

Seminar Hall, TCIS