

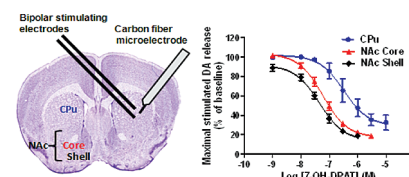
## Electrochemistry and Dopamine Receptors

Dopamine neurotransmission is mediated through five dopamine receptor subtypes. It is challenging to characterize agonists of dopamine D2 and D3 receptors, which are promising lead compounds for schizophrenia and Parkinson's disease, due to lack of subtype specificity. What is known is that the distribution of dopamine D2 and D3 receptors is different within the striatum. Now, Marina and Mathews

(DOI: 10.1021/cn100003u) utilize fast scan cyclic voltammetry, which temporally resolves dopamine release and uptake in discrete regions of the brain, to determine agonist activity on D2 and D3 dopamine receptors.

The authors find that different dopamine receptor agonists are potent within different anatomical regions of the striatum. The functional voltammetric approach described

by the authors should serve as a useful tool in the characterization of selective dopamine receptor agonists.



## How Antipsychotics Work

Psychotic illnesses are fairly common, but researchers know little about the mode of action of antipsychotic drugs apart from that they impact the dopamine D2 receptor. Now, Weeks et al. (DOI: 10.1021/cn100010p) use a model *Caenorhabditis elegans* system to characterize the effects of these drugs on the insulin-signaling pathway implicated

in both schizophrenia and bipolar disorder.

The authors show for the first time that this pathway is a common target of all classes of antipsychotic drugs. Further, evidence is provided that demonstrates the effect of these drugs on the insulin-receptor-like protein DAF-2. A better understanding of the mode of action of

antipsychotic drugs should go a long way in developing new generation of therapeutics with fewer side effects.

