Selective Dopamine D3 Receptor Ligands

Discovery

- Novel dopamine D3 receptor ligands

Features

- High affinity and selectivity for the dopamine D3 receptor
- Useful as imaging probes for dopamine D3 receptors and neurodegenerative disorders
- Able to penetrate the blood brain barrier and show activity at relatively low dosages

Benefits

- Compared to nonselective D2/D3 receptor ligands, dopamine D3 selective agents do not demonstrate cocaine-like behavioral profiles or abuse potential
- Eliminates extrapyramidal side effects associated with dopamine D2 class of therapeutic agents
- Dopamine D3 receptor antagonists have been shown to reduce psychostimulant craving in animal models
- More hydrophilic ligands offer improved water solubility and bioavailability compared to other 4-phenylpiperazine derivatives

Opportunities

- Therapeutics useful for the treatment of drug abuse
- Treatment of schizophrenia and CNS diseases such as Parkinson’s disease and dyskinesias associated with the disorders and their treatment
- Diagnostic reagents or imaging agents for the analysis of disorders or conditions involving dopamine receptors