



## Selective Dopamine D3 Receptor Ligands

### Learn more!

**Robert McClain, PhD**  
Associate Vice President  
[robert.mcclain@unthsc.edu](mailto:robert.mcclain@unthsc.edu)  
817-735-2618

**Technology Case**  
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**Our Inventor**  
**Dr. Robert Luedtke**  
[robert.luedtke@unthsc.edu](mailto:robert.luedtke@unthsc.edu)

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US Patents 7,605,259 &  
8,119,642

**Publications**  
*Evaluation of the D3 dopamine receptor selective agonist/partial agonist PG01042 on L-dopa dependent animal involuntary movements in rats.* Neuropharmacology. 60(2-3):284-94 (2011)

*Evaluation of the D3 dopamine receptor selective antagonist PG01037 on L-dopa-dependent abnormal involuntary movements in rats.* Neuropharmacology. 56(6-7):944-55 (2009)

*Structure-activity relationships for a novel series of dopamine D2-like receptor ligands based on N-substituted 3-aryl-8-azabicyclo [3.2.1] octan-3-ol.* J Med Chem. 51(19): 6095-6109 (2008)

3500 Camp Bowie Blvd  
Fort Worth, TX 76107  
Phone: 817-735-5147  
FAX: 817-735-5485  
[techtransfer@unthsc.edu](mailto:techtransfer@unthsc.edu)

## 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