



THE PERRY & RUBY STEVENS

# Parkinson's Disease

CENTER OF EXCELLENCE

"Small molecule for the treatment of uncontrolled involuntary movements in patients with Parkinson's disease"

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## Abstract

Parkinson's disease (PD) is a complex multisystem, chronic and so far incurable disease with significant unmet medical needs. The incidence of PD increases with aging and the societal burden from PD continues to escalate with our aging population. Since its discovery in the 1960s, levodopa remains the gold standard pharmacotherapy for PD. However, the progressive nature of the neurodegenerative process in and beyond the nigrostriatal system causes a multitude of side effects, including levodopa-induced uncontrolled involuntary movements called dyskinesia within 5 years of therapy. Attenuating dyskinesia has been a significant challenge in the clinical management of PD. We will present our recent results on a small molecule that alleviates the expression of levodopa-induced dyskinesia in a nonhuman primate model of PD. The treatment also led to a significant improvement in PD-like symptoms. The lead compound PD13R we discovered is a dopamine D3 receptor partial agonist with high affinity and selectivity, orally active and with desirable drug-like properties. Future studies are aimed at developing this lead compound for treating PD patients with dyskinesia.