Pharmacologic, genomic and proteomic profiling of Rasagiline
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Parkinson’s disease (PD) is an age-related neurodegenerative disorder, resulting with both motor as well as cognitive dysfunction. Progression of the disease correlates with both the degeneration of dopaminergic neurons within the substantia nigra pars compacta, as well as with depletion of the neurotransmitter dopamine in different brain regions. Although symptomatic therapy exists, no current treatment reverses or halts disease progression.

Rasagiline (N-propargyl-1R-aminooindan) is a novel highly potent irreversible monoamine oxidase B inhibitor, for the treatment of the disease. The neuroprotective activity of rasagiline as demonstrated in neuronal cell cultures in response to various toxins and in-vivo models, has led the NIH to choose rasagiline for neuroprotection studies in neurodegenerative diseases. Recent phase III multi-center clinical studies in parkinsonian patients suggest that rasagiline may have a disease modifying activity. By using novel genomic and proteomic expression tools in the most prominent model of PD, we have delineated its possible molecular targets implicated in its neuroprotective action.