



# Parkinson's disease: causes & cures

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New targets and drug discovery – Uli Hacksell, Marina Biotech, Inc.

## Abstract

Current efforts to develop new medicines for patients with Parkinson's disease can be divided into two groups: Programs aiming for disease modifying drug candidates and symptomatic treatments, respectively. The disease modifying efforts tend to focus on (i) established/establishing links between genetic mutations and disease, and (ii) Lewy body formation and alpha-synuclein generation and transportation. Development of symptomatic therapies focus on areas poorly treated by the current medicines, which focus on replacing the dopaminergic tone lost by the non-function/death of dopaminergic neurons (L-dopa therapy, dopamine agonists, MAO inhibitors and COMT inhibitors). Dyskinesias remain the most difficult motoric symptoms and remain an area of major unmet medical need. Other poorly treated Parkinson symptoms are non-motoric symptoms such as dementia and neurogenic orthostatic hypotension (nOH). Ongoing discovery and development programs aiming at new targets will be reviewed.



Dr Hacksell is Chairman of the Board of directors of Cerecor Inc. and Marina Biotech. He is a member of the Board of Directors of Medivir, Index Pharmaceuticals, Beactica and Uppsala University. Dr Hacksell served as CEO of ACADIA Pharmaceuticals from 2000-2015 where he was leading the development of pimavanserin, currently marketed in the US as Nuplazid, a medicine for psychosis associated with Parkinson's disease. In the 1990s Dr Hacksell held senior positions at Astra AB. Earlier in his career, he was Professor of Organic Chemistry at Uppsala University and served as Chairman of the European Federation of Medicinal Chemistry.

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