

New animal study shows promise for development of Parkinson's disease drug

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Few treatments for Parkinson's disease (PD) restore function for extended periods. In a new study published today in the inaugural issue issue of the *Journal of Parkinson's Disease*, an international group of researchers report that platelet-derived growth factor-BB (PDGF-BB) restored function in rodents and shows promise as a clinical candidate drug for treatment of PD.

Parkinson's disease is the second most common <u>neurodegenerative</u> <u>disorder</u>, affecting 1% of the population over the age of 65. It is characterized by loss of <u>brain cells</u> (neurons) from the mid-brain which use the <u>neurotransmitter dopamine</u> to help control voluntary movements. Investigators from NeuroNova AB, Stockholm, Sweden, the Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden, The Parkinson's Institute, Sunnyvale, CA, USA, and Motac Neuroscience Ltd, Manchester, UK, found that behavioral, tissue and <u>biochemical</u> <u>changes</u> in experimental models of Parkinson's disease in rodents could be counteracted by infusion of PDGF-BB. This could offer an alternative strategy to restore function in PD.

"In animal models of nigrostriatal injury, a two weeks treatment with platelet-derived growth factor-BB resulted in long-lasting restoration of striatal dopamine transporter binding sites and expression of nigral tyrosine hydroxylase," commented Anders Haegerstrand, MD, PhD, Chief Scientific Officer, NeuroNova AB, Stockholm, Sweden."It also normalized amphetamine-induced rotational behavior in 6-hydroxydopamine lesioned rats. Platelet-derived growth factor-BB



promoted proliferation of <u>neural progenitor cells</u> in the subventricular zone. The effects on dopaminergic neurons and functional recovery could be blocked by co-infusion with a proliferation inhibitor, indicating a link between the proliferative and anti-parkinsonian effects. Based on the current data, we consider platelet-derived growth factor-BB a clinical candidate drug for treatment of Parkinson's disease."

More information: The article is "Restorative Effects of Platelet Derived Growth Factor-BB in Rodent Models of Parkinson's Disease" by Olof Zachrisson, Ming Zhao, Annica Andersson, Karin Dannaeus, Johan Häggblad, Ruben Isacson, Elisabet Nielsen, Cesare Patrone, Harriet Rönnholm, Lilian Wikstrom, Kristofer Delfani, Alison L. McCormack, Theo Palmer, Donato A. Di Monte, Michael P. Hill, Ann Marie Janson Lang, and Anders Haegerstrand. *Journal of Parkinson's Disease*. 1(1). DOI 10.3233/JPD-2011-0003

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