

Neurology and Therapeutics

March 27-29, 2017 Madrid, Spain

Bradykinin reverts contralateral rotation and restores dopamine levels in an animal model of Parkinson disease

Hélio Danny Nóbrega de Souza, Agatha Oliveira and Henning Ulrich
Universidade de São Paulo, Brazil

Parkinson's disease (PD) is a neurodegenerative disorder, characterized by the loss of dopaminergic neurons in the substantia nigra and its projections into the *striatum*, triggering various motor deficits. Nowadays, PD treatment mostly relies on L-DOPA administration; however, effects produced by this drug are limited and cause diverse side effects. Treatment of PD is initiated at advanced stages of PD, since symptoms only become evident after a loss of at least 50% of dopaminergic neurons in the *substantia nigra* accompanied by a drastic reduction of dopamine content in the *striatum*. In view of that, the exploration of neuroprotective, self-renewal of stem cells inducing and neuroregenerative properties of Bradykinin (BK) may help to substitute dopaminergic neuron loss, in addition to enhancing the survival of reminiscent neurons. Recent evidence suggests that BK participates in kidney and cardiovascular development and neuronal differentiation. Comparison between the number of rotations before (7 days after the lesion) and after the BK or saline treatment (8 weeks): Once BK was administered after the complete establishment of 6-OHDA lesion, we assigned the functional improvement, detected by the rotational test and the histological improvement (increased percentage of tyrosine hydroxylase fibers) to the neuroregeneration induced by BK treatment instead of neuroprotection. Here we show that BK exerts a neuroregenerative effect via kinin-B2 receptors in a rat model of PD induced 6-OH-dopamine injection. BK injection after establishment of PD symptoms resulted in improvements in the lesioned areas as studied by tyrosine hydroxylase immunostaining and motor functions.

Biography

Hélio Danny Nóbrega de Souza graduated in Biology from Federal University of Paraíba (Brazil). He completed his Master's degree in Biochemistry from University of Sao Paulo. He is currently pursuing his PhD in Biochemistry from University of Sao Paulo. He has experience in Molecular Biology, Biochemistry and Embryology. He is presently acting on the following subjects: Development and brain formation, neural differentiation and neuroregeneration.z

helliodanny@gmail.com

Notes: