



## NOVELTIES IN THE PATHOGENESIS OF PARKINSON'S DISEASE

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This brief contribution aims to analyze the recent findings which lead to hypothesize a common pathways in the genesis of Parkinson's disease. This hypothesis moves from the composition and the dynamics of neuronal inclusions which occur in a few degenerative diseases expressing as movement disorders and featuring at sub-cellular level as a variety of structures with different shape, size and protein content. A short draft of representative neuronal inclusions will first drawn, by describing the various types of inclusions and the dynamics of their composition, mentioning both common features and distinctive aspects. As a further step, we will move from their analysis in Parkinsonian patients to the bench side discussing recent developments obtained from experimental models. In this way we will try to encompass the dynamics of inclusion formation based on their fine ultrastructure and the analysis of the molecular components as well as their sub-cellular compartmentalization which gives a hint on the pathophysiology of neuronal degeneration underlying this movement disorder. In line with this, we will focus on recent studies which led to reproduce neuronal inclusions *in vivo* and *in vitro* by manipulating selective cellular structures/enzymatic pathways. to relate the dynamics of inclusion formation and the pathophysiology of the disease process. An emphasis will be made on the ubiquitin proteasome system and Parkinson's disease where the analysis of neuronal inclusions enlightened potential therapeutic strategies to occlude the progression of the disease.