

JOINT EVENT

4<sup>th</sup> International Conference on **Epilepsy & Treatment**

&amp;

4<sup>th</sup> World Congress on **Parkinsons & Huntington Disease**

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**Insulin resistance and cholesterol dyshomeostasis involve  $\alpha$ -synuclein and amyloid beta interactions in neurodegenerative diseases**

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Epidemiological studies indicate that diabetes, Parkinson's disease (PD) and Alzheimer's disease (AD) are closely linked with dysregulated cholesterol pathways that involve molecular genetics, cell biology and insulin resistance in the pathogenesis of these diseases. In Parkinson's disease, the  $\alpha$ -synuclein protein is an amyloidogenic protein shown to bind to cholesterol. The binding of AD amyloid beta ( $A\beta$ ) has been associated with cholesterol in membranes with the regulation of liver  $A\beta$  metabolism regulated by plasma cholesterol levels. The peripheral sink  $A\beta$  hypothesis is closely associated with cholesterol regulation and possibly connected to the metabolism of  $A\beta$  and  $\alpha$ -synuclein protein in diabetes, AD, PD and Huntington's disease. Interests in proteins and their interactions with membrane lipids in neurodegenerative diseases have accelerated with the existence  $A\beta$  and  $\alpha$ -synuclein pathologies in individuals with neurodegeneration. The role of molecular genetics with relevance to neurological diseases has gained major interest in anti-aging genes that determine circadian rhythm, insulin resistance and protein aggregation. Diets that activate these genes have become important to control cellular cholesterol, alpha synuclein and amyloid beta levels that may slow down the progression of PD. These genes may regulate immune responses that are connected to mitochondrial dysfunction in neurodegenerative diseases. Drug therapy in Parkinson's disease has become of importance to clinical drug research with activation of genes essential to maintain cholesterol metabolism and the pharmacy of drugs.

**Recent Publications**

1. Martins I J (2017) Antibiotic resistance involves antimicrobial inactivation in global communities. SAJ Pharma Pharmacol. 2:102.
2. Martins I J (2017) Autoimmune disease and mitochondrial dysfunction in chronic diseases. Res Chron Dis. 1(1):10-12.
3. Martins I J (2015) Diabetes and cholesterol dyshomeostasis involve abnormal  $\alpha$ -synuclein and amyloid beta transport in neurodegenerative diseases. Austin Alzheimers J Parkinsons Dis. 2(1):1020-28..

**Biography**

Ian James Martins is an Editor/Reviewer of Open Access Pub/MDPI journals. He was appointed as the Chief Editor for International Journal of Diabetes Research (2014-2018), Research & Reviews: Neuroscience (2016-2018) and Diabetes and Clinical Studies (2017-2018). He is a BIT Member (BIT Congress. Inc), Scientist for Science Advisory Board (USA) and Academician with Academia.edu. His has an H-index of 43, (Research Gate STATS (23), Mendeley STATS (20). Scientific research citations accumulate to >3300. He is a Lifetime Member of International Agency for Standards and Ratings as a Fellow. He is a Winner of World Academic Championship-2017 in Diabetes and Medical Science (Nutrition). He has been conferred with the Richard Kuhn Research Award-2015 Endocrinology and Metabolism.

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