

Are microbiota reasonable targets in the therapy of neurodegenerative diseases? - YES

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Neurodegenerative diseases are characterized by progressive loss of specific neuronal populations, over years or even decades. Their causes remain elusive, with the exception of 5-10% of cases, associated with known genetic mutations. Even though neurodegeneration involves a few common pathogenic mechanisms, such as oxidative stress, energetic failure, alteration of neurological signaling, synapse loss, apoptosis or alteration of blood brain barrier, probably the crucial alteration is the progressive accumulation of aggregated proteins. During past decades, there were isolated reports that suggested an infectious etiology for neurodegeneration, but none with sustained and strong scientific evidence. However more recently, accumulating data prove a correlation between microbiota change and presence of neurodegeneration. Moreover, a few studies in both transgenic models and human tissue suggest that bacteria might trigger protein aggregation in both gut and brain. Therefore, a new opportunity window for clinical studies in both Alzheimer's and Parkinson's diseases seems just about to open.