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Nurr1: A new investigation target for Parkinson's disease

Parkinson disease (PD) is the second most common neurodegenerative disease in adults mainly with manifesting movement disorder symptoms. The loss of dopamine (DA) neurons in the substantia nigra (SN) is the pathological hallmark of PD. Although many PD related genes and environmental factors have been identified, the mechanisms underlying the loss of DA neurons in PD are still poorly understood. Previously, we have documented that Nurr1, a gene regulating DA neuron differentiation is a risk factor for PD. We have also found that down-regulation of Nurr1 can cause DA neuron degeneration, increase α -synuclein expression, and induce glia-mediated inflammation and neuronal injury. Therefore, we believe that Nurr1 may play an important role in the development of PD. Recently, we documented that small molecules acting on Nurr1 transcription site can enhance DA neuron transmission and survival under the condition of proteasome inhibition mediated DA neuron degeneration. Currently, we are evaluating Nurr1-enhancing drugs for the potential of anti-PD therapy and measuring the Nurr1 level in the CSF of PD patients to determine if change of Nurr1 level is associated with the disease course of PD.

Biography

Weidong Le, MD, PhD, is a Neurologist/Scientist with a major research interest in neurodegenerative disorders including Parkinson's disease, Alzheimer's disease and ALS. He graduated from Shanghai 2nd Medical University with a Doctoral degree in 1988, and received Postdoctoral training at Dr. Stanley Appel's laboratory from 1989-1991. He was promoted to Professor of Neurology in 2005 at Baylor College of Medicine, and since 2013 he has been appointed as the Director of Center for Translational Research on Neurological Diseases, and Vice President of 1st Affiliated Hospital, Dalian Medical University. He is a full affiliate member of Houston Methodist Research Institute. He has published over 200 SCI papers in peer reviewed journals and 7 scientific books, and serves as Board Member or Associate Editor for 8 international journals.

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