

Title: Serum LincLNMAT1 Correlated with Phosphorylated α-Synuclein as Important Biomarkers of Parkinson's Disease: A Cross-Sectional Study.

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Early diagnosis of Parkinson's disease (PD) is an important issue to improve the prognosis. Long noncoding RNA (lncRNA) has been reported to have a function in the pathogenesis of PD. Here, we report that a long noncoding RNA, lincLNMAT1 in serum involved in the diagnosis of PD and correlated with serum phosphorylated α-Synuclein (PS-129 α-Syn) in PD. In this study, we detected serum lincLNMAT1 expression in 218 PD patients and 175 healthy volunteers by using the quantitative real-time polymerase chain reaction (qRT-PCR) method. Serum PS-129 α-Syn concentrations were measured by ELISA assay. Receivers operating characteristic (ROC) curves were applied to map the diagnostic accuracy of PD patients compared to healthy subjects. Several scales were used to rate the severity of PD patients. The expression level of serum lincLNMAT1 (0.196 ± 0.018) was significantly higher in PD patients compared with that of healthy controls (0.042 ± 0.005). Serum PS-129 α-Syn level was also found to be higher in PD patients (36.18 ± 2.62 ng/μL) than healthy controls (30.05 ± 2.11 ng/μL). Clinical data indicated that serum lincLNMAT1 was positively correlated with H&Y stage and the unified Parkinson's disease rating scale III (UPDRS III) score. Moreover, there was a significant positive correlation between serum lincLNMAT1 levels and serum PS-129 α-Syn according to Spearman's rank correlation analysis. The ROC curve for lincLNMAT1 (AUC 0.795) showed potential diagnostic value in discriminating PD from healthy subjects. Our study, for the first time, demonstrated that serum lincLNMAT1 might serve as a potent serum protein marker for the diagnosis of PD.

Keywords: biomarker, lincLNMAT1, phosphorylated α-synuclein, Parkinson's disease, serum

Biography

Jing Zou has completed her PhD at the age of 28 years from Sun Yat-Sen University in 2017 and postdoctoral studies at Mayo Clinic, USA from 2018 to 2019. Now she works as a a clinical research scientist in department of Neurology and Stroke Center, Clinical Neuroscience Institute of Jinan University, Guangzhou, China. She has published 11 journal papers (5 papers as first/co-first author, cited 200 times). She has also served as a regular member of American Academy of Neurology (AAN) and International Parkinson and Movement Disorder Society (MDS) and a lifetime membership in the Chinese Stroke Association, Neurology Branch of the Chinese Medical Association and also serving as independent journal reviewer for several prestigious journals.

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