

Eisai discovers new compound to treat Parkinson's disease

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Researchers has identified a compound that has the potential to be a treatment for Parkinson's disease by using dopaminergic neurons differentiated from induced pluripotent stem (iPS) cells from patients with familial Parkinson's disease.



A joint research group centered around Professor Hideyuki Okano and Associate Professor Jun Kohyama, Department of Physiology of the Keio University School of Medicine, together with a research group of Eisai Co., Ltd. has identified a compound that has the potential to be a treatment for Parkinson's disease by using dopaminergic neurons differentiated from induced pluripotent stem (iPS) cells from patients with familial Parkinson's disease.

Aiming to develop treatments for Parkinson's disease, this research group utilized neural progenitor cells induced from iPS cells derived from patients with familial Parkinson's disease and established a differentiation protocol for the stable supply of a large number of dopaminergic neurons. Furthermore, the research group screened an existing drug library as an indicator of susceptibility to stress observed in dopaminergic neurons derived from Parkinson's disease patients and identified compounds that inhibit calcium channels.

Further detailed analysis conducted by the research group revealed higher expression of T-type calcium channels in dopaminergic neurons derived from PARK2 patients. It was also found that apoptosis of dopaminergic neurons derived from Parkinson's disease patients could be reduced by inhibiting calcium influx via T-type calcium channels.

From these results, it is suggested that combining disease-specific iPS cells and existing drug library has the potential for both the development of treatments and clarification of disease pathology.