講演情報

一般演題ポスターセッション(英語)

[Pe-039] 一般演題ポスターセッション（英語）039

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[Pe-039-3] Two-step screening method to identify α-synuclein aggregation inhibitors for Parkinson's disease

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Objective: Parkinson's disease is a neurodegenerative disease characterized by the formation of neuronal inclusions of α-synuclein in patient brains. No effective disease-modifying therapy has been established, and preventing α-synuclein aggregation is thought to be one of the most promising approaches to ameliorate the disease. In this study, we have established a method for screening α-synuclein aggregation inhibitory effect of many drugs in a short period of time by combining the two evaluation methods. Methods: We performed a two-step screening using the thioflavin T assay and a cell-based assay to identify α-synuclein aggregation inhibitors. Results: The first screening, thioflavin T assay, allowed the identification of 30 molecules, among a total of 1,262 FDA-approved small compounds, which showed inhibitory effects on α-synuclein fibrilization. In the second screening, a cell-based aggregation assay, seven out of these 30 candidates were found to prevent α-synuclein aggregation without causing substantial toxicity. Of the seven final candidates, tannic acid was the most promising compound. The robustness of our screening method was validated by a primary neuronal cell model and a *Caenorhabditis elegans* model, which demonstrated the effect of tannic acid against α-synuclein aggregation. Conclusion: Our two-step screening system is a powerful method for the identification of α-synuclein aggregation inhibitors, and tannic acid is a promising candidate as a disease-modifying drug for Parkinson's disease.