BCHM 421/422 Project – 2023-24

Project 2 Outline: Parkinson's disease (PD) is a common neurodegenerative condition that involves protein aggregation and loss of dopaminergic cells in the brain. Most commonly alpha-synuclein aggregates and accumulates in lipid vesicles in PD. We are studying how this aggregation can be controlled in vitro and in cell cultures. We will grow human cells as well as induced pluripotent stem cells, differentiate them to neurons and then treat them with aggregated alpha-synuclein and various lipids in lipid vesicles. Cell degeneration will be assessed, and growth factors will be used to regenerate cells. These studies are hoped to identify specific lipids involved in protein aggregation and to develop methods to prevent neuronal degeneration.

Supervisor:	**Inka Brockhausen**
Project Title:	**Role of lipids in alpha-synuclein aggregation**
Project Goals:	**To define factors that lead to protein aggregation in Parkinson's disease**
Experimental Approaches:	**Protein analysis, alpha-synuclein aggregation, stem cell cultures, cell differentiation, preparation of lipid vesicles, transfection of neuronal cells, assessment of cell proliferation, degeneration and regeneration.**

References:

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