BIOCHEMISTRY SEMINAR SERIES

Midstream Presentation - Fall 2020

Carter Lantz

Loo Group

"Mass Spectrometry Analysis of Amyloid Proteins and their Interaction with the Aggregation Inhibiting Compound CLR01 "

Neurodegenerative diseases such as Alzheimer's and Parkinson's disease are characterized by aggregation of protein in brain neurons. Among these proteins are tau, which aggregates into neurofibrillary tangles in Alzheimer's disease, and α-synuclein, which aggregates into Lewy bodies in Parkinson's disease. A variety of factors including mutations, post-translational modifications (PTMs), metal ions, and small aromatic compounds have been found to affect the aggregation rate of these proteins. Our lab utilizes native top-down mass spectrometry (nTD-MS) and ion mobility mass spectrometry (IM-MS) to localize modifications and determine their effect on protein structure. Using these techniques, we aim to provide insight into amyloid protein phosphorylation on tau and α-synuclein and how a small molecule inhibitor known as CLR01 interacts with these proteins. In addition, this information can be used to help simulate protein structural changes due to small molecule binding. We hope this data will be able to provide insight into why amyloid proteins aggregate and how aggregation into oligomers and fibrils can be inhibited.

Tuesday, November 17, 2020

via Zoom

4:00 pm

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