

## Public Abstract

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Title:MONITORING MEMBRANE PROTEIN STRUCTURAL CHANGES AND INTERACTIONS VIA DEEP UV RESONANCE RAMAN SPECTROSCOPY

Membrane proteins perform a variety of functions within our cells. They transport nutrients and waste across the lipid barrier, transmit signals from one part of the body to another, and run our immune system. However, despite their ubiquitous and vital presence in all organisms, relatively little is known about this class of proteins compared to their soluble counterparts. Intramembrane proteolysis is a process involving membrane proteins that occurs in all biological organisms and has garnered particular interest due to its involvement in various disease pathologies, such as Alzheimer's and Parkinson's Diseases. In this work I have set out to use deep UV resonance Raman (DUVRR) spectroscopy to characterize structural and environmental transitions of proteins and applied the results to studies involving intramembrane proteolysis in an effort to better understand the key concepts behind it.