BiophysTO Lunchtime Talks

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Protein-lipid complexes in the lysosome

The breakdown of sphingolipids by hydrolase enzymes in lysosomes requires the participation of saposin "activator proteins". The saposins are small, membrane-active proteins that can exist in either a soluble state or in a membrane-bound state. These proteins act by forming complexes with various lipid substrates and present these in a reaction-compatible state to the respective active sites of the hydrolases. A key feature of the saposin proteins is a hinge region that allows the proteins to open and expose their inner hydrophobic surfaces to lipids, much in the same way as with the exchangeable apolipoproteins. Based on data from atomic force microscopy, X-ray crystallography and molecular dynamics simulations, I will discuss how the four homologous saposins use similar molecular mechanisms to produce different effects on lipids, ranging from aggregation to solubilization.

Host: Dr. Walid A. Houry

(Refreshments and pizza will be provided)

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Thursday, October 6, 2016 – 12:00 pm, noon
McLennan Physical Laboratories, Room MP606
(and via streaming to DV3129 at UTM)