



BiophysTO Lunchtime Seminar Series

Date

Tuesday, June 19 2018
12:00 pm, noon

Location

Medical Sciences
Building, Room 5231

Pizza and refreshments will
be provided

Dr. Simon Newstead

Department of Biochemistry
University of Oxford

Structural Basis of Nucleotide Sugar Transport Across the Golgi membrane

Glycosylation is a fundamental cellular process that, in eukaryotes, occurs in the lumen of both the Golgi apparatus and the endoplasmic reticulum. Nucleotide sugar transporters (NSTs) are an essential component of the glycosylation pathway, providing the diverse range of substrates required for the glycosyltransferases. How NSTs recognize and transport activated monosaccharides, however, is currently unclear. I will present our latest work detailing the crystal structure of the GDP-mannose transporter Vrg4, in both the substrate-free and the bound states. A hitherto unobserved requirement of short-chain lipids in activating the transporter supports a model for regulation within the highly dynamic membranes of the Golgi apparatus. Our results thus provide mechanistic insights into the transport and regulatory mechanism of membrane transporters in the Golgi.

Host: Dr. Reinhart Reithmeier



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