

Keynote Lecture

KN25

The mystery of membrane fusion: structural biology of Munc18 proteins

J. Martin¹

¹*University of Queensland, Institute for Molecular Bioscience, Brisbane, Australia*

Membrane fusion is a fundamentally important process that underpins systems as diverse as neurotransmission and blood glucose control. The importance of the process is evident by the award of the 2013 Nobel prize in Physiology and Medicine to Rothman, Schekman and Südhof for identifying the molecular components required for fusion and showing that these are conserved from yeast to humans. Abnormalities in this process contribute to a wide range of diseases including diabetes and neurological disorders. A key regulator of SNARE-mediated membrane fusion is the Sec1p/Munc18 (SM) protein family. Whilst the molecular basis for SM protein-regulated SNARE complex formation has been extensively studied, it remains poorly understood. This presentation will focus on the structural biology of Munc18 proteins that provide clues to how these enigmatic and highly plastic proteins regulate membrane fusion.

Keywords: membrane fusion