

Electrostatic membrane sequestration

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Synaptic vesicle release is mediated by the membrane-anchored SNARE protein syntaxin-1A. This protein is heavily enriched at designated ~50 nm fusion sites in the plasma membrane. However, what sequesters this protein in these domains is unknown. In my talk, I'll show that electrostatic interactions between syntaxin-1A and the lipid PiP2 (phosphatidylinositol 4,5-bisphosphate) are both sufficient and required for membrane clustering. This is a new mechanism of how membrane partitioning is achieved.