

CHAPTER OVERVIEW

4: Membrane-Protein Interactions

Membrane proteins are common proteins that are part of, or interact with, biological membranes. Membrane proteins fall into several broad categories depending on their location. Integral membrane proteins are a permanent part of a cell membrane and can either penetrate the membrane (transmembrane) or associate with one or the other side of a membrane (integral monotopic). Peripheral membrane proteins are transiently associated with the cell membrane. Membrane proteins are often medically important—about a third of all human proteins are membrane proteins, and these are targets for more than half of all drugs. Nonetheless, compared to other classes of proteins, determining membrane protein structures remains a challenge in large part due to the difficulty in establishing experimental conditions that can preserve the correct conformation of the protein in isolation from its native environment.

[4.1: Membrane Permeability](#)

[4.2: Insertion of Membrane Proteins into Lipid Membranes](#)

[4.3: Protein-lipid Interactions](#)

[4.4: Physical Lipid Protein Interactions](#)

[4.5: Nanoparticle Spontaneous Penetration and Assembly in and Through Membranes](#)

[4.6: Non-Membrane Lipid Assemblies \(Micelles\)](#)

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