

CHAPTER 5. TYPES OF MEMBRANE PROTEINS

Proteins are embedded in the bilayer sheet, held by hydrophobic interactions between the membrane lipids and hydrophobic domains in the proteins.

Membrane proteins may be divided operationally into two groups. Most biomembranes contain both types of membrane proteins.

Integral proteins are very firmly associated with the membrane, removable only by agents that interfere with hydrophobic interactions, such as detergents, organic solvents, or denaturants.

Peripheral proteins associate with the membrane through electrostatic interactions and hydrogen bonding with the hydrophilic domains of integral proteins and with the polar head groups of membrane lipids.

The orientation of proteins in the bilayer is asymmetric, giving the membrane "sidedness": the protein domains exposed on one side of the bilayer are different from those exposed on the other side, reflecting functional asymmetry

Some proteins protrude from only one side of the membrane; others have domains exposed on both sides.

Membrane specificities are stemmed from by cellular proteins.