

Membrane Structure - Chapter 11

I. Background

II. Lipid Bilayer

A. Classes of Lipids

1. phospholipids
 - a. phosphatidylcholine
2. sphingolipids
3. sterols
4. glycolipids

B. Amphipathic

C. Lipid bilayer

1. shape
 - a. liposome

D. Properties

1. self-sealing
2. barrier
3. stability

E. Two-dimensional Fluid

F. Contributors to fluidity

1. tail length
2. double bonds
3. cholesterol
4. cholesterol

G. Asymmetrical

1. leaflets
 - a. cytosolic
 - b. extracellular
2. enzymatic lipid flip-flop
 - a. flippases
 - b. floppases
 - c. scramblases

III. Membrane Proteins

A. Background

B. Membrane association

1. integral
2. peripheral
3. proteolipid

C. Membrane spanning structure

1. α helix
 - a. passages
2. β barrel

D. Solubilization

1. detergents
 - a. mycels

E. Reinforcement by the Cell Cortex

- a. spectrin

F. Movement of membrane proteins

G. Carbohydrate layer

1. glycoproteins
 - a. oligosaccharides
 - b. proteoglycans
2. functions
 - 1) lectins