

SELF-TEST

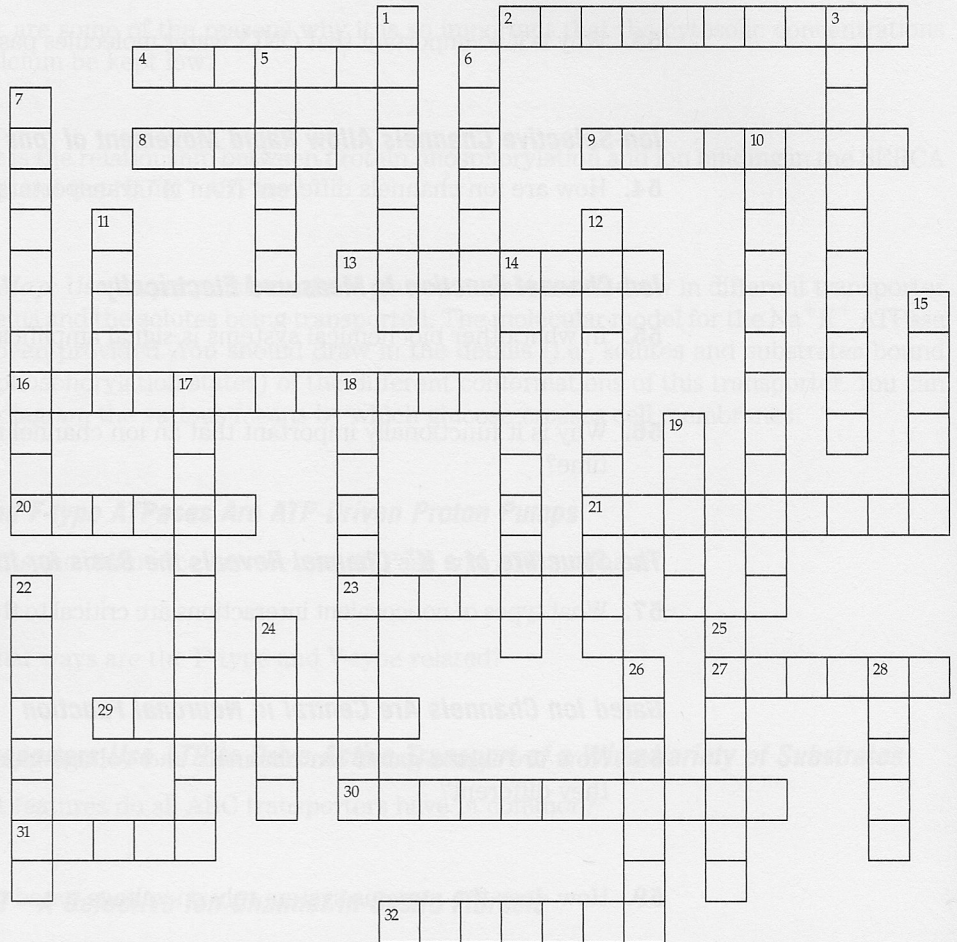
Do You Know the Terms?

ACROSS

2. A plot of _____ index vs. amino acid residue number in a protein predicts potential membrane-spanning α -helical regions of integral membrane proteins; such a plot is *not* useful for predicting β -barrel transmembrane segments
4. The structural organization of lipids in biological membranes.
8. One category of _____ - _____ ATPases that are responsible for the production of ATP in mitochondria and chloroplasts; they are also known as ATP synthases.
9. _____ refers to the simultaneous transport of two solutes across a membrane in opposite directions.
13. _____ proteins are very firmly associated with the membrane via hydrophobic interactions with the fatty acid chains of membrane lipids.
16. The _____ potential takes into account the effects of the chemical concentration gradient and the electrical gradient.
20. An example of a(n) _____ - gated ion channel is the acetylcholine receptor.
21. The _____ family of integral proteins provides channels for rapid movement of water across plasma membranes.
23. Facilitated diffusion is also called _____ transport.
27. The transport of solutes against a concentration or electrochemical gradient that requires the input of energy is known as _____ transport.
29. Ion-selective _____ provide a route for the rapid movement of ions across membranes.
30. Simultaneous transport of two solutes across a membrane, in either the same or opposite directions.
31. A membrane protein in an intact erythrocyte that reacts with trypsin must have at least one domain exposed on the _____ face of the lipid bilayer.
32. _____; transport of a single solute across a membrane.

DOWN

1. An ion _____ is a source of potential energy that drives secondary transport processes in cells.
3. _____ interactions among lipid molecules in water drive the formation of micelles, bilayers, and liposomes.



5. The Na^+K^+ _____ is an example of a cotransporter that is critical to the function of all cells.
6. Type of diffusion that occurs down a concentration gradient.
7. Membrane component that can modulate membrane fluidity
10. The major class of membrane lipids, in terms of weight percent.
11. _____ - _____ ATPases are reversibly phosphorylated by ATP as part of the transport process.
12. _____ diffusion is mediated by an integral membrane protein that lowers the activation energy for transport; this process exhibits saturation kinetics.
14. Class of lipids containing covalently attached carbohydrates.
15. SNAREs are proteins required for membrane _____ in the process of exocytosis.
17. "Flip-flop" of lipids in membrane bilayers is also known as _____ diffusion; facilitated by flippases.
18. Describes the polar head groups of membrane lipids and peripheral membrane proteins.

- 19.** The evocative name of the model describing the structure of biological membranes is the _____ mosaic model.
- 22.** Proteins and phospholipids rarely exhibit this type of movement in membranes without an input of energy.
- 24.** Face of the lipid bilayer where 2 K^+ ions are released by the Na^+K^+ ATPase.
- 25.** Type of rapid diffusion exhibited by both lipids and proteins in membranes.
- 26.** The transport of two solutes in the same direction across a lipid membrane.
- 28.** _____ - _____ ATPases pump protons, regulating the pH of intracellular compartments.