## CELLS, TRANSPORT, SIGNALING Clickers

- 1. Motor proteins are responsible for intracellular movement by interacting with what types of cellular structures?
  - A glycoproteins in extracellular matrix
  - B ribosomes in the cytoplasm
  - C cellulose fibers in the cell wall
  - D cristae inside mitochondria
  - E microtubules of the cytoskeleton
- 2. Prokaryotic and eukaryotic cells have all of the following structures in common EXCEPT
  - A a plasma membrane
  - B DNA
  - C a nucleoid region
  - D ribosomes
  - E cytoplasm
- 3. Which of the following structure: function pairs is mismatched?
  - A vacuole:water storage
  - B lysosome:apoptosis
  - C ribosome:protein synthesis D Golgi:ribosome production

  - E smooth ER:lipid production

4. Which of the following can activate a protein by transferring a phosphate group to it?

- A CAMP
- B protein kinase
- C phosphodiesterase
- D protein phosphatase
- E G protein

5. Large molecules are moved out of cells by which of the following processes?

- A pinocytosis
- B phagocytosis
- C exocytosis
- D receptor-mediated endocytosis
- E cytokinesis

6. The drawing shows a U-tube with a semi-permeable membrane that allows the passage of glucose but not sucrose. What will happen next?

- A Glucose will diffuse from side A to B
- B Sucrose will diffuse from side A to B
- C No net movement of molecules will occur.
- D Glucose and water will diffuse from side B to A
- E There will be a net movement of water from side A to B.
- 7. Which of the following is an example of passive transport, unaided by proteins, across the cell membrane?
  - A stimulation of a muscle cell
  - B uptake of glucose by microvilli of cells lining the stomach
  - C movement of insulin out of pancreas cells
  - D movement of carbon dioxide across the cell membrane in alveoli
  - E selective uptake of hormones across the cell membrane
- 8. What is a G protein?
  - A specific type of membrane receptor protein
  - B protein on the cytoplasmic side of a membrane that is activated by a receptor
  - C membrane-bound enzyme that converts ATP to cAMP
  - D a tyrosine kinase relay protein
  - E a guanine nucleotide that converts between GDP and GTP to activate relay proteins

- 9. Which type of cell would probably provide the best opportunity to study lysosomes?
  - A muscle cell
  - B nerve cell
  - C phagocytic white blood cell
  - D leaf cell in a plant
  - E bacterial cell
- 10. Which of the following structures is common to plant and animal cells?
  - A chloroplasts
  - B mitochondria
  - C wall made of cellulose
  - D tonoplast
  - E centrioles
- 11. Which of the following describes bound ribosomes?
  - A They are enclosed in their own membrane.
  - B They are usually found on the cytoplasmic surface of the plasma membrane.
  - C They are structurally different from free ribosomes.
  - D They frequently synthesize membrane proteins and secretory proteins.
  - E All of the above.
- 12. Which of the following includes ALL the others?
  - A passive transport
  - B facilitated diffusion
  - C diffusion of a solute across a membrane
  - D transport of an ion down its electrochemical gradient
  - E osmosis



- 13. Based on the model of sucrose uptake shown, which of the following treatments would INCREASE the rate of sucrose transport into the cell?
  - A decreasing extracellular sucrose concentration
  - B decreasing extracellular pH
  - C decreasing cytoplasmic pH
  - D adding an inhibitor that blocks the regeneration of ATP
  - E adding a substance that makes the membrane more permeable to  $H^{\star}$  ions
- 14. Animal cells placed in a hypotonic environment will
  - A undergo plasmolysis
  - B lose mass
  - C undergo cytolysis
  - D shrink smaller
  - E undergo crenation
- 15. Which of the following provides the best evidence that cell-signaling pathways evolved early in the history of life?
  - A Yeast cells signal each other for mating.
  - B Signal transduction molecules found in distantly related organisms are similar.
  - C Signals can be sent long distances by cells.
  - D Most signals are received by cell surface receptors.
- 16. Lipid soluble molecules, such as testosterone , cross the membrane of all cells but affect only target cells because
  - A only target cells contain the appropriate DNA segments.
  - B only target cells have Y chromosomes.
  - C intracellular receptors are present only in target cells.
  - D Only target cells have the cytoplasmic enzymes that transduce testosterone.

## Answer Key : Cells, Transport, Signaling

Question:	Answer
1	E
2	С
3	D
4	В
5	С
6	D
7	D
8	В
9	С
10	В
11	D
12	A
13	В
14	С
15	В
16	

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