Name _____

AP Biology
Chapter 11 - Cell Communication

Guided Reading Assignment Campbell's 10th Edition

Essential Knowledge
2.E.2 timing and coordination of physiological events are regulated by multiple mechanisms
3.B.2 A variety of intercellular and intracellular signal transmissions mediate gene expression
3.D.2 Cell communicate with each other through direct contact with other cells or from a distance via chemical signaling
3.D.3 Signal transduction pathways link signal reception with cellular response
3.D.4 Changes in signal transduction pathways can alter cellular response

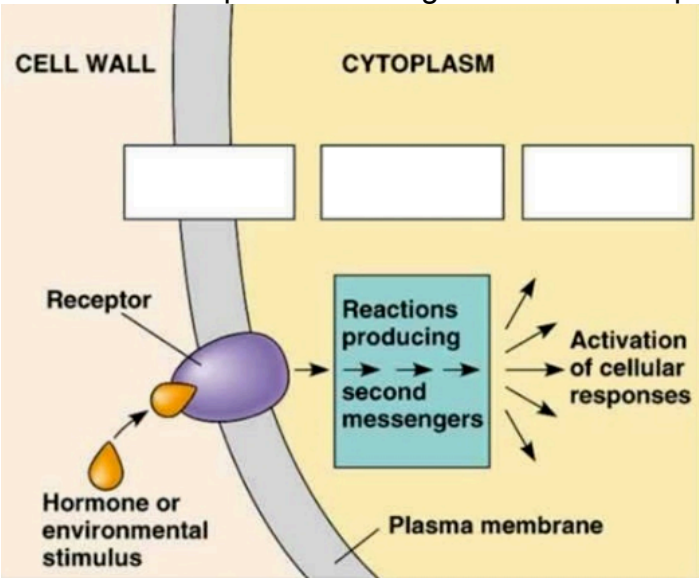
LO 2.43 The student is able to connect the concept of cell communication to the functioning of the immune system.
LO 3.22 The student is able to explain how signal pathways mediate gene expression, including how this process can affect protein production
LO 3.31 The student is able to describe basic chemical processes for cell communication shared across evolutionary lines of descent.
LO 3.32 The student is able to generate scientific questions involving cell communication as it relates to the process of evolution.
LO 3.33 The student is able to use representation(s) and appropriate models to describe features of a cell signaling pathway.
LO 3.34 The student is able to construct explanations of cell communication through cell-to-cell direct contact or through chemical signaling.
LO 3.35 The student is able to create representation(s) that depict how cell-to-cell communication occurs by direct contact or from a distance through chemical signaling.
LO 3.36 The student is able to describe a model that expresses the key elements of signal transduction pathways by which a signal is converted to a cellular response.
LO 3.37 The student is able to justify claims based on scientific evidence that changes in signal transduction pathways can alter cellular response.
LO 3.38 The student is able to describe a model that expresses key elements to show how change in signal transduction can alter cellular response.
LO 3.39 The student is able to construct an explanation of how
certain drugs affect signal reception and, consequently, signal transduction pathways.

1. How do signal transduction pathways serve as evidence of shared ancestry?

2. How does paracrine signaling differ from synaptic signaling

3. What molecules are often used to transmit signals over long distances?

4. Label the three phases of a signal transduction pathway



5. What happens to a receptor when a molecule binds to it?

6. List and briefly describe three receptors, give specific examples of how each is used.

7. What happens to the signaling molecule after it binds to the receptor?

8. What is the role of a second messenger in signal transduction?

9. What role does phosphate play in signal transduction?

10. How does cholera relate to signal transduction?

11. How do signal transduction pathways offer many opportunities for regulation?

12. Explain how the response to adrenalin is amplified

13. How do specific cells know to respond specifically to certain signals while ignoring others?

14. Define apoptosis and give a specific example

15. What types of signals initiate apoptosis