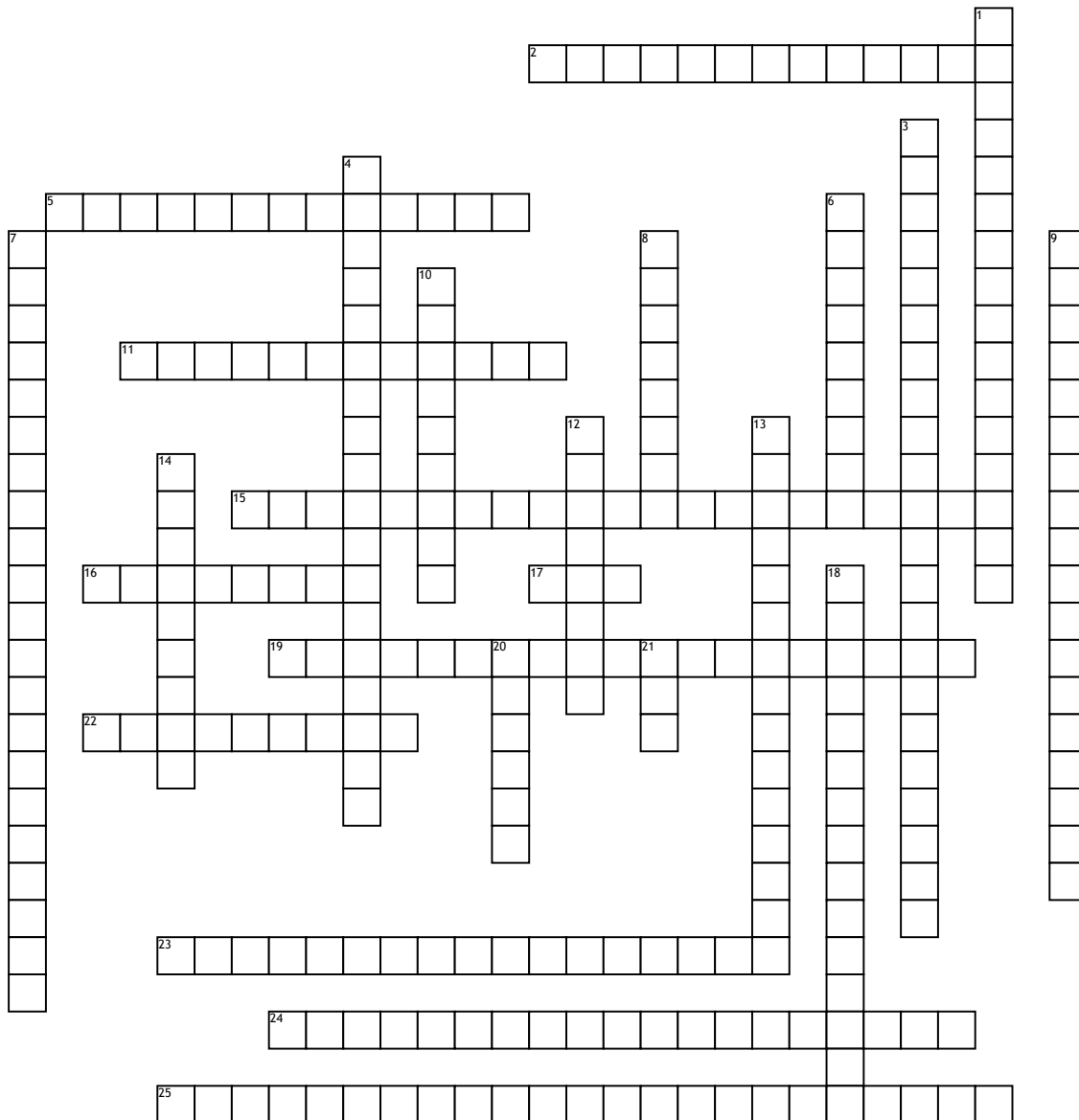


Name: \_\_\_\_\_

Date: \_\_\_\_\_

# Cell Communication



## Across

2. An enzyme that transfers phosphate groups from ATP to a protein
5. The use of specific detection methodologies to directly increase the signal in proportion to the amount of target in the reaction
11. are the "first messengers" the extracellular signaling molecule that binds to the that bind to the membrane receptor.
15. The pathways leading to calcium release involve still other second messengers
16. bulging out of a part of a cell below the plasma membrane or expansion of air-filled tissue, as occurs in the lungs in bullous emphysema.
17. involved in energy transfer within the cell( guanosine 5'-triphosphate)
19. Large relay proteins to which several other relay proteins are simultaneously attached
22. Controlled cell suicide (greek meaning: falling off)
23. The PROCESS of removing phosphate groups from proteins

24. Enzymes that rapidly remove phosphate groups from proteins

25. Is a cell surface transmembrane receptor that works with the help of a G protein

## Down

1. Non protein, water soluble molecules or ions
3. sequence of events where one enzyme phosphorylates another, causing a chain reaction leading to the phosphorylation of thousands of proteins.
4. form of cell-to-cell communication in which a cell produces a signal to induce changes in nearby cells, altering the behavior or differentiation of those cells.
6. The binding of epinephrine to the plasma membrane of a liver cell elevates the cytosolic concentration of a compound
7. Type of membrane receptor containing a region that can act as a "gate" when the receptor changes shape
8. Both plant and animals use chemicals called \_\_\_\_\_ for long distance signaling

9. occurs when endocrine cells release hormones that act on distant target cells in the body
10. occurs when a particle interacts with an atomic nucleus, shifting the nucleus into an unstable state, and causing it to become radioactive
12. A protein that binds the energy-rich molecule GTP
13. the addition of a phosphate (PO<sub>4</sub>) group to a protein or a small molecule.
14. Is the target cell's detection of a signaling molecule coming from outside the cell
18. Converts ATP to cAMP in response to an extracellular signal
20. The term for a molecule that specifically binds to another molecule
21. guanosine 5'-diphosphate