Cell Membrane and Nucleus

Cell membranes define a cell by keeping the insides in and the outside out! The nucleus is one of many compartments inside of a cell. It holds DNA.

GDP (Guanosine Diphosphate)

GDP is has two phosphates. It has to be replaced by GTP for some proteins to work.

GTP (Guanosine triphosphate)

GTP is a lot like ATP. It has three phosphates and can lose one of them, but tends not to transfer that phosphate onto the protein.

ATP (Adenosine Triphosphate)

ATP has three phosphates. It can turn an object on by transferring one of these phosphates onto it, but it needs a kinase to help it.

Signaling Molecule

Signaling molecules bind to receptors and can activate them.

Kinase

Kinases can transfer phosphates from ATP onto proteins.

Transcription Regulator

Transcription Regulators can turn on DNA transcription.

G-Protein (Guanine Nucleotide-Binding Protein)

G-proteins bind GTP and GDP, but only one at a time!

Receptor

Receptors communicate signals between the cell and the outside world.

Nuclear Pore Complex

Nuclear pore complexes allow for entry into and exit from the nucleus.

Phosphate

Phosphates are easy to transfer from one place to another, if you have things in their correct places!