

G protein

[Science](#), [Biology](#)



G PROTEIN The sequence of events that occur to bring about a cellular response following activation of a G-protein coupled receptor. G protein coupled receptors are found in choanoflagellates and yeast. The ligands that bind and energize these receptors incorporate hormones, light sensitive compounds, neurotransmitters, and odors. G-protein-coupled receptors are a group of plasma membrane receptors such as helix receptors and serpentine receptors. G proteins are the guanine nucleotide binding proteins that function as intermediaries in signal pathways. There are two significant signal activation pathways incorporating the G protein coupled receptors; the phosphatidylinositol signal pathway and the cAMP signal pathway (Miller & Newton, 2010 p. 260).

The biological signals sent by the G proteins are received by the receptors. In addition, the G proteins forward the signals by a way of mediation of various numbers of intermediaries to those effectors that control genes in reaction to the signals. Following activation of the G protein coupled receptors, the ligand attaches to the G protein coupled receptors which causes a conformational transformation in the G protein coupled receptors thus permitting it to function as guanine nucleotide exchange element (Miller & Newton, 2010 p. 268).

When the G protein coupled receptors are activated, the GEF activates or energizes the G protein by aiding in the exchange of GTP. As such, the G protein subunits delink from the main receptor in order to produce a $G\beta\gamma$ dimer and $G\alpha$ -GTP monomer, which are permitted to regulate the function of other cellular and intracellular proteins.

Reference

<https://assignbuster.com/g-protein/>

Millar, R. P., & Newton, C. L, 2010, The year in G protein-coupled receptor research. *Mol. Endocrinol.* 24 (1): 261-74.