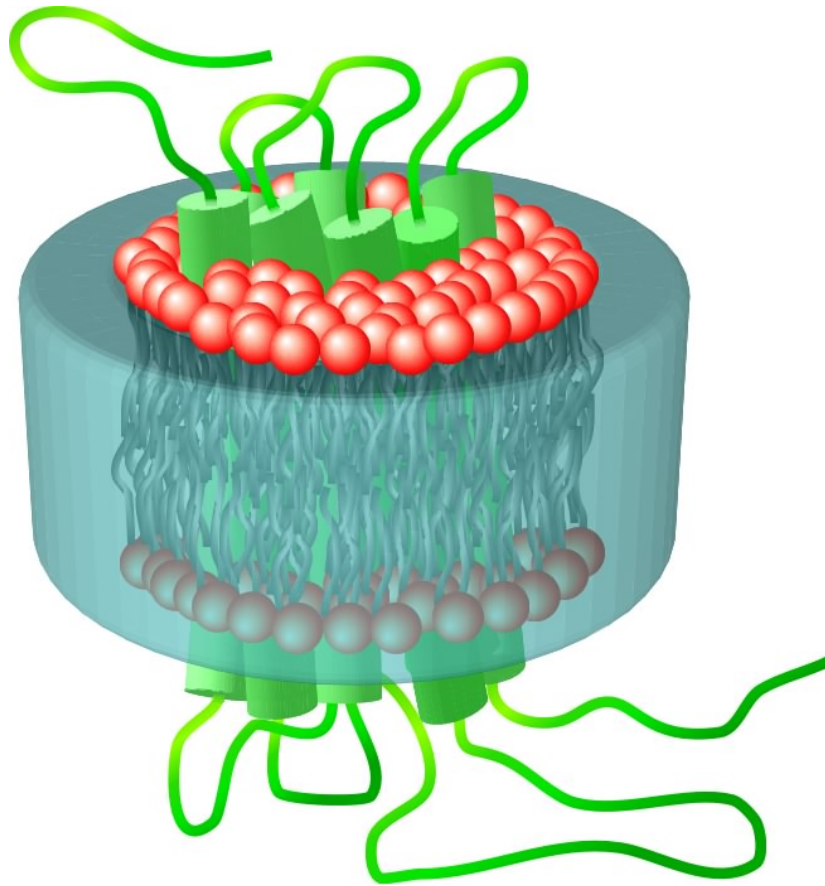


#### 4.1.8 G-PROTEIN COUPLED RECEPTORS WRAPPED IN NANODISCS: A GIFT FOR DRUG DISCOVERY

A. J. Leitz, T. H. Bayburt, A. Barnakov, B. A. Springer, S. G. Sligar, “Functional Reconstitution of  $\beta$ -2 Adrenergic Receptors into Soluble Self-Assembled Nanobilayer Architectures,” submitted to *Nature Biotechnology*.

G-protein coupled receptors (GPCRs) are a super-family of proteins found in cellular membranes. These protein receptors are the targets of about 50% of pharmaceuticals on the market, producing over \$30 billion in sales annually. However, these proteins are difficult to study outside of the cellular membrane. To overcome this difficulty, an NU-NSEC team worked with Johnson & Johnson to put a GPCR into Nanodiscs, which provide a small section of membrane for the protein. This system is already showing the potential to better understand human diseases and find new medications.



Nanodiscs allow membrane proteins like GPCRs to be studied in a nanoscale cellular membrane-like environment.