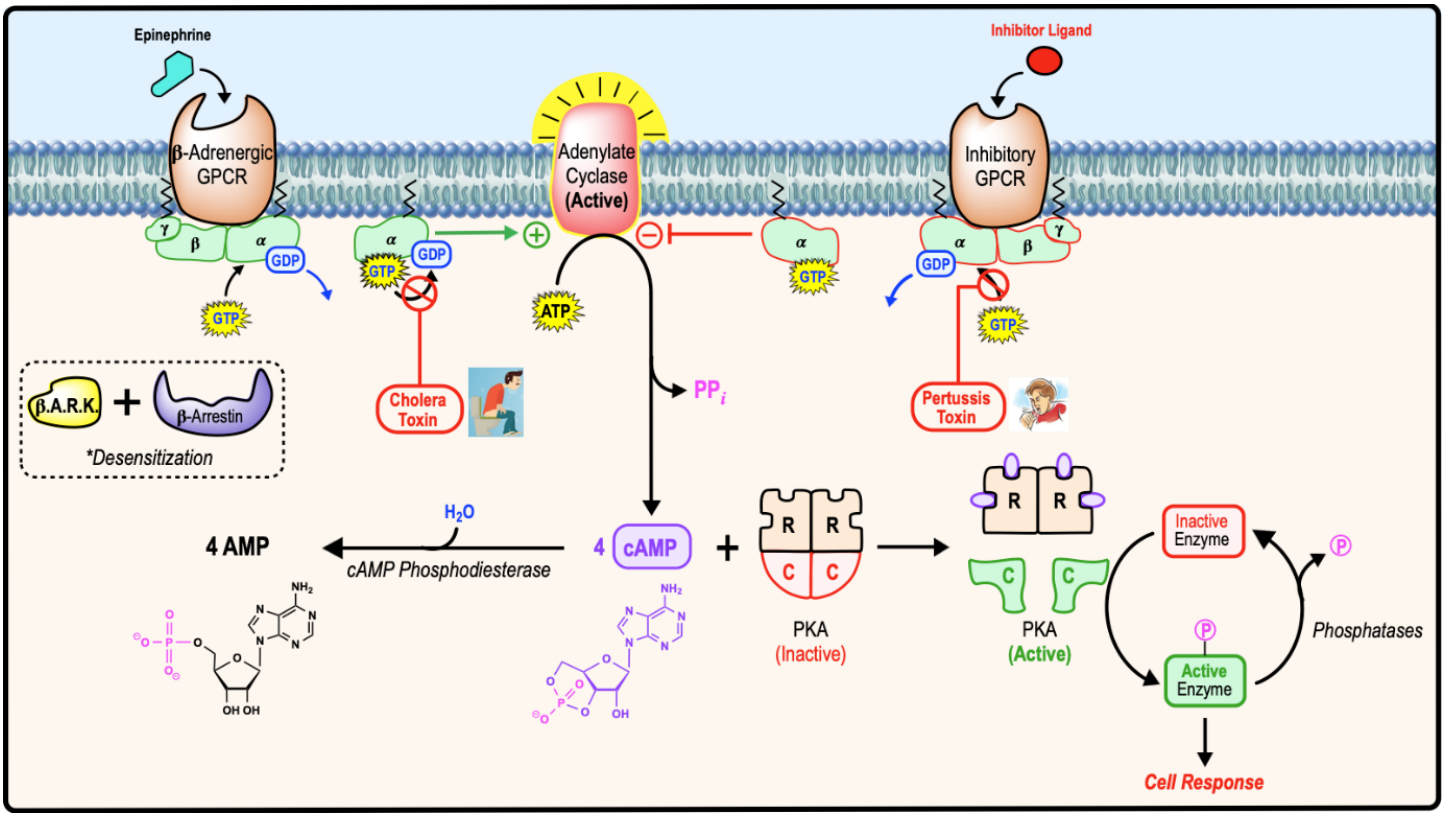
CONCEPT: RECAP OF ADENYLATE CYCLASE GPCR SIGNALING



EXAMPLE: Which of the following statements about the β-adrenergic receptor signaling system is correct?

a) Epinephrine binding the β-adrenergic receptor activates $G_{s\alpha}$ by replacement of GDP for GTP. Activated $G_{s\alpha}$ activates phospholipase C resulting in the release of inositol triphosphate (IP3). Ca^{2+} is released from the endoplasmic reticulum (ER) and along with diacylglycerol activates protein kinase C.

b) Epinephrine binding the β-adrenergic receptor activates $G_{s\alpha}$ by replacement of GDP for GTP. Activated $G_{s\alpha}$ activates adenylate cyclase resulting in the synthesis of cAMP. cAMP activates protein kinase A.

c) Insulin binding the β-adrenergic receptor activates $G_{s\alpha}$ by replacement of GDP for GTP. Activated $G_{s\alpha}$ activates adenylate cyclase resulting in the synthesis of cAMP. cAMP activates protein kinase A.

d) Insulin binding the β-adrenergic receptor activates $G_{s\alpha}$ by replacement of GDP for GTP. Activated $G_{s\alpha}$ activates phospholipase C resulting in the release of inositol triphosphate (IP3). Ca^{2+} is released from the endoplasmic reticulum (ER) and along with diacylglycerol activates protein kinase C.

PRACTICE: Which of the following does not bind to G-proteins?

a) GTP. b) GDP. c) GPCRs. d) cGMP.