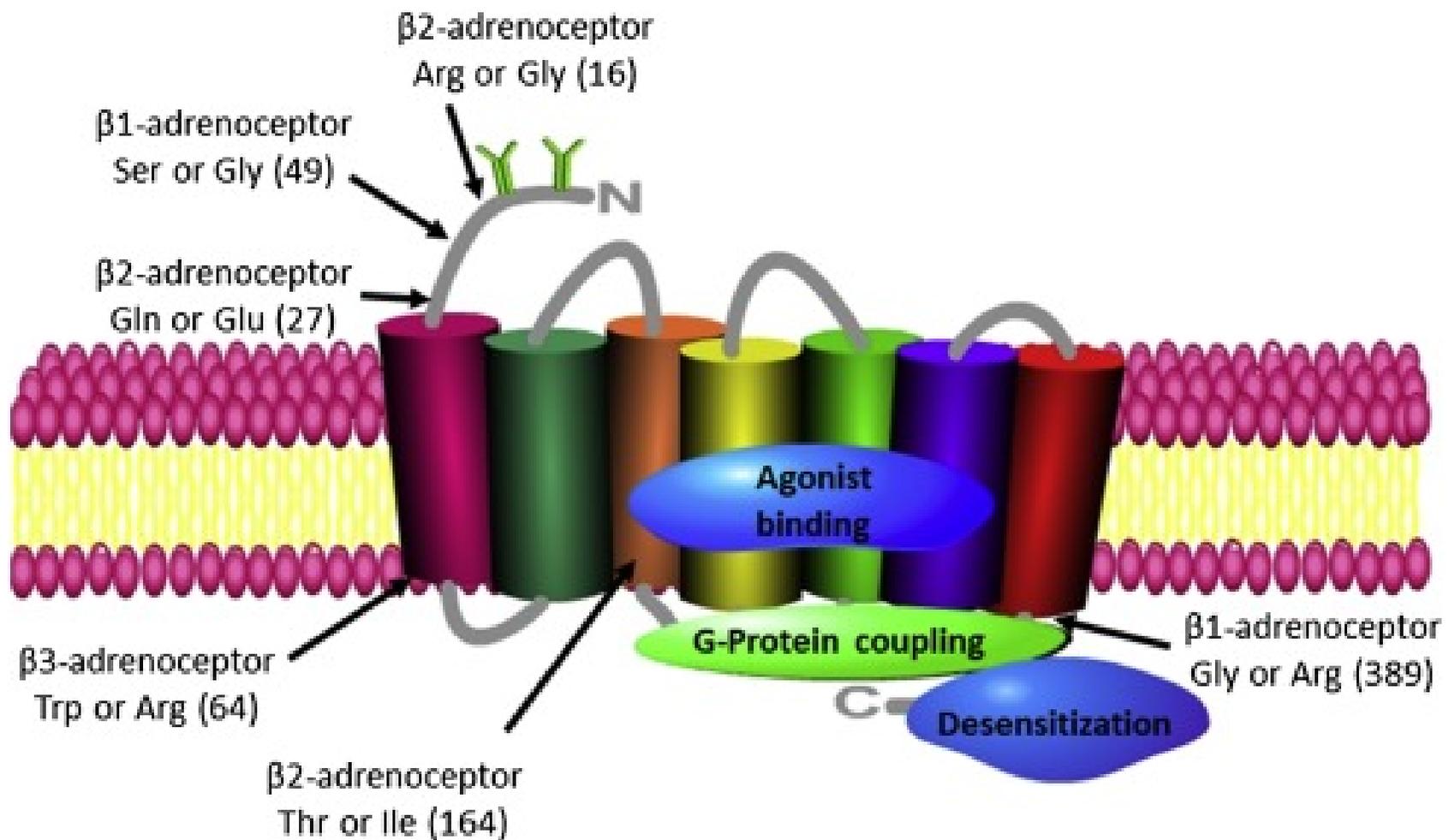
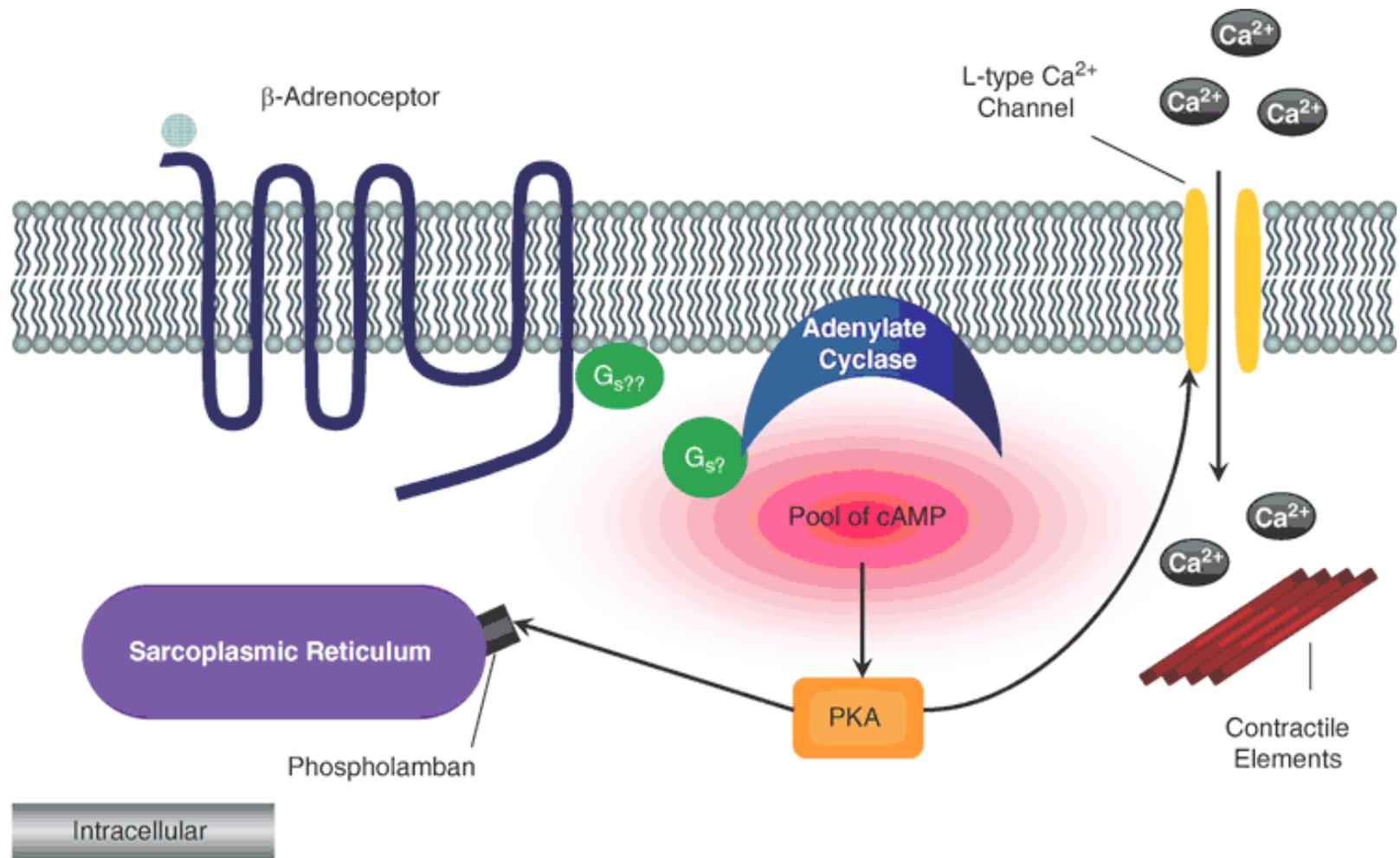


Adrenergic receptors or adrenoceptors

- ❖ The **adrenergic receptors** or **adrenoceptors** are a class of **G protein-coupled receptors** that are targets of many **catecholamines** like **norepinephrine** (noradrenaline) and **epinephrine** (adrenaline) produced by the body.
- ❖ Many therapeutic agents like **beta blockers**, **β_2 agonists** and **α_2 agonists**, also binds with adrenoceptor to produce therapeutic response (used to treat **high blood pressure** and **asthma**).
- ❖ These receptors consists of 7 transmembrane domains and intracellular and extracellular loop.
- ❖ When the receptors are stimulated by an agonist, adenylyl cyclase (AC) is activated to catalyze conversion of ATP to cyclic AMP (cAMP).
- ❖ The cyclic AMP then phosphorylates and activate protein kinase (PKs).
- ❖ protein kinase alters the function of many enzymes to manifest pharmacological action such as contraction of heart and relaxation of smooth muscle.





Distribution of adrenoreceptors

Types	Location	Action
α_1	Postsynaptically on Blood Vessels Liver Heart Glands GIT and Uterus	Contraction Glycogenolysis Increase force of contraction Secretion Contraction
α_2	Presynaptically on neurons	Decrease in secretion of Neurotransmitters
β_1	Heart Jextra glomerular cells of kidney	Increase in heart rate and cardiac output Secretion of renin
β_2	Bronchi (Lungs) Liver Skeletal muscle Pancrease	Relaxation Glycogenolysis Glycogenolysis Secretion of insulin
β_3	Adipose tissue	Lipolysis