

Muscarinic

- M1
 - Sympathetic postsynaptic
 - presynaptic
 - function as heteroreceptor
 - mechanism: PIP_2 breaks down
 - IP_3
 - DAG
 - Ca^{2+}

- M2
 - myocardium
 - smooth muscles
 - presynaptic Autoreceptors
 - mechanism:
 - open K^+ channels
 - inhibits adenylyl cyclase

- M3
 - Exocrine Glands
 - Salivary
 - GI
 - Pancreatic
 - respiratory
 - Endothelium
 - IMP!!!
 - Smooth $\rightarrow$ M2
 - endothelium $\rightarrow$ M3

- M4
 - CNS
 - Vagal nerve endings
 - Mechanism:
 - Same as M2

- M5
 - Vascular endothelium
 - Mechanism:
 - Same as M1

Mechanism: Same as M1

Tip for memo Mechanisms: -
 even 2, 4: -
 - open K^+
 - inhibit adenylyl
 Odd: 1, 3, 5
 - PIP_2 breakdown

Nicotinic

- N_n (neuronal type)
 - Adrenal medulla
 - Ganglia
 - Function
 - can be presynaptic
- N_m (muscular)
 - location
 - Motor system (skeletal muscles)

- Both act by opening Na^+/K^+ channels depolarising the membrane

Autonomic Receptors

• α -receptors:-

- α_1
- location: RT, AIT, smooth muscles
- function: same as N_1

- α_2
- location: Presynaptic inhibitory
- Mechanism: $\downarrow$ adenylyl cyclase $\rightarrow \downarrow$ CAMP
- function: mediate negative feedback inhibition of catecholamine release

• β -receptors:-

- β_1 (Renin release) (stimulatory)
• location: Heart, Juxtaglomerular Apparatus, Autoreceptors

• Mechanism: $\nearrow$ adenylyl cyclase $\rightarrow \nearrow$ AMP

- β_2

• location: Bronchial smooth muscles, Smooth muscles of Blood vessels (RT)

• Function: $\nearrow$ adenylyl cyclase, $\nearrow$ glucose
- glycogenolysis
- gluconeogenesis
Supplying skeletal muscles especially

- β_3

• location: lipocytes

• Function: Metabolic processes ; lipolysis

Dopaminergic

$\rightarrow$ All Present in Brain

- (D1, D5)

• location: Renal Vascular Bed smooth muscles (kidney)

- D2, 3, 4

• Function: $\nearrow$ cAMP

• Function: $\nearrow$ adenylyl cyclase $\rightarrow \nearrow$ cAMP