## Acetylcholine

site	action	Effect
Neuromuscular junction	excitatory	Skeletal muscle
		contraction
Parasympathetic/sympathetic	excitatory	Ganglionic
ganglion		neurotransmission
Parasympathetic	Excitatory/inhibitory	Smooth cardiac
neuroeffector junction		muscle and glands
Central nervous system	Excitatory/inhibitory	Learning, short-term
		memory

Acetylcholine receptors - nicotinic (nAChR) and muscarinic (mAChR)

nAChR is directly coupled to cation channels and mediate fast excitatory synaptic transmission – differences occur between muscle and neuronal nAChR

mAChR are G-protein coupled receptors and effects are mediated by phospholipase C activation, Adenylate Cyclase inhibition and K+ activation/ Ca2+ inhibition affect heart, smooth muscle and glands 3 main types: 1. M1 – neuronal Now excitation – inclusion in IP<sub>3</sub> and DAG

- 2. D1 Caldiac, reduced CA2H, reduced Ca2+ and increased K+ conductance
- 3. M3 glandular smooth muscle contraction and vascular relaxation

## Noradrenaline

site	action	effect
Sympathetic	Excitatory/inhibitory	Increased heart rate
neuroeffector junction		vasoconstriction
Central nervous system	Mainly inhibitory/some	Blood pressure
	excitatory	regulation

## Dopamine

site	action	effect
heart	Excitatory	Positive inotropic
Central nervous system	Presynaptic and	In excess produces