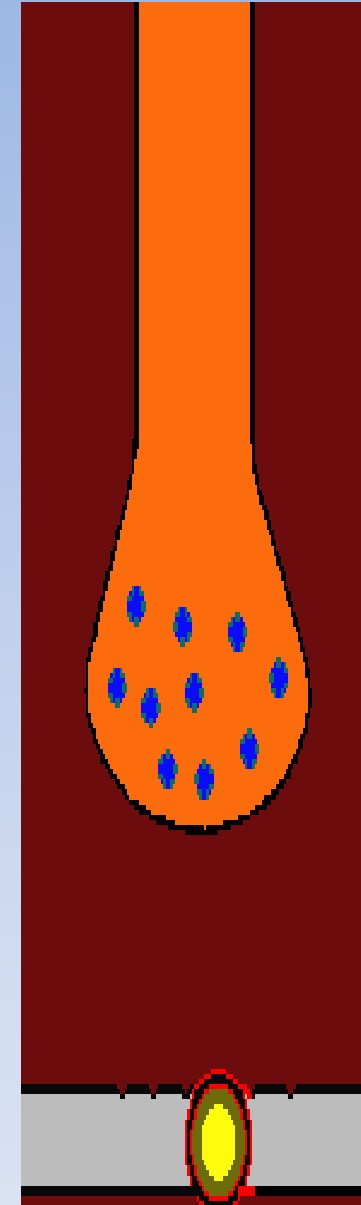


# kolinerjik receptors



Prof.Dr.Nuray Arı, 2018

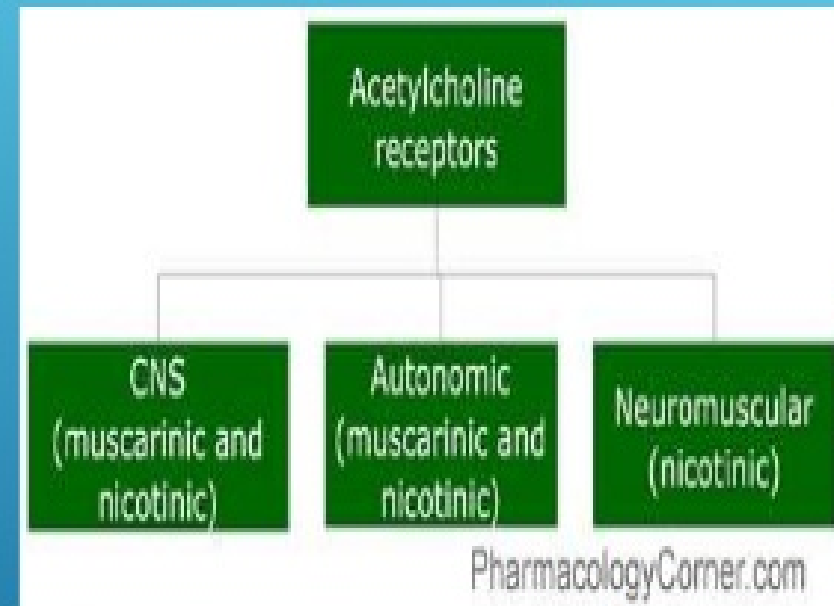
# CHOLINERGIC RECEPTORS CLASSIFICATION

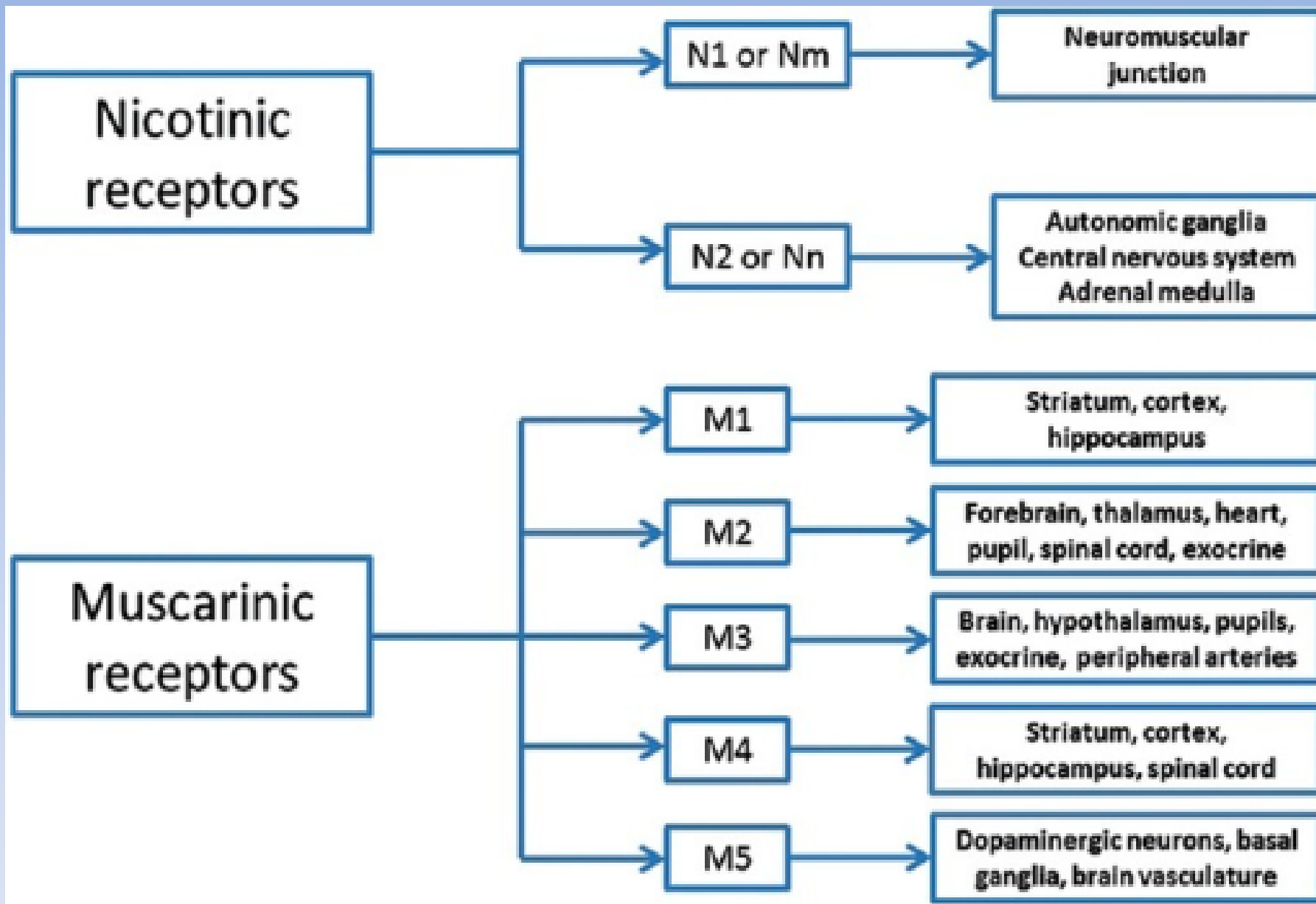
1

Nicotinic  
Receptors

2

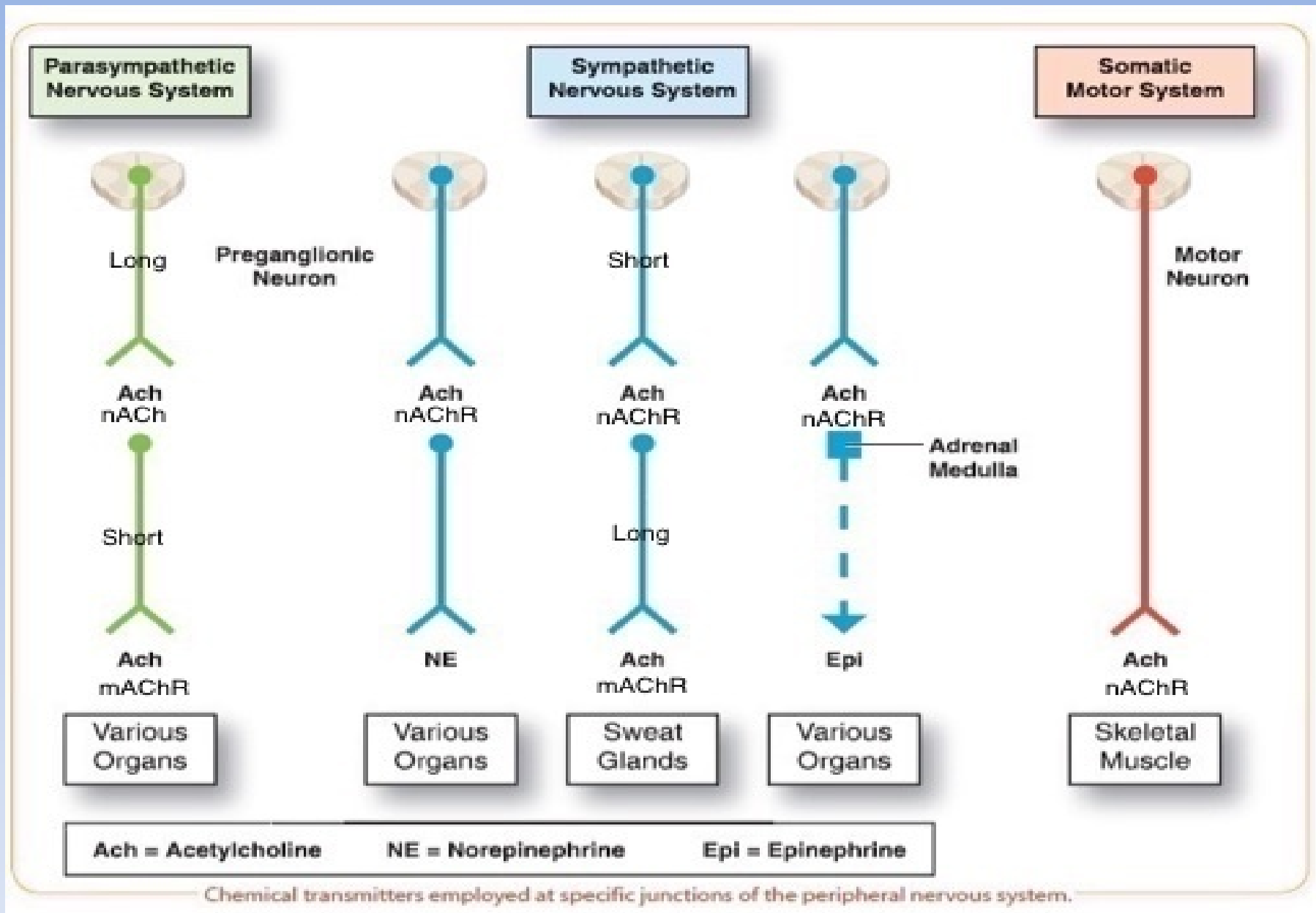
Muscarinic  
Receptors



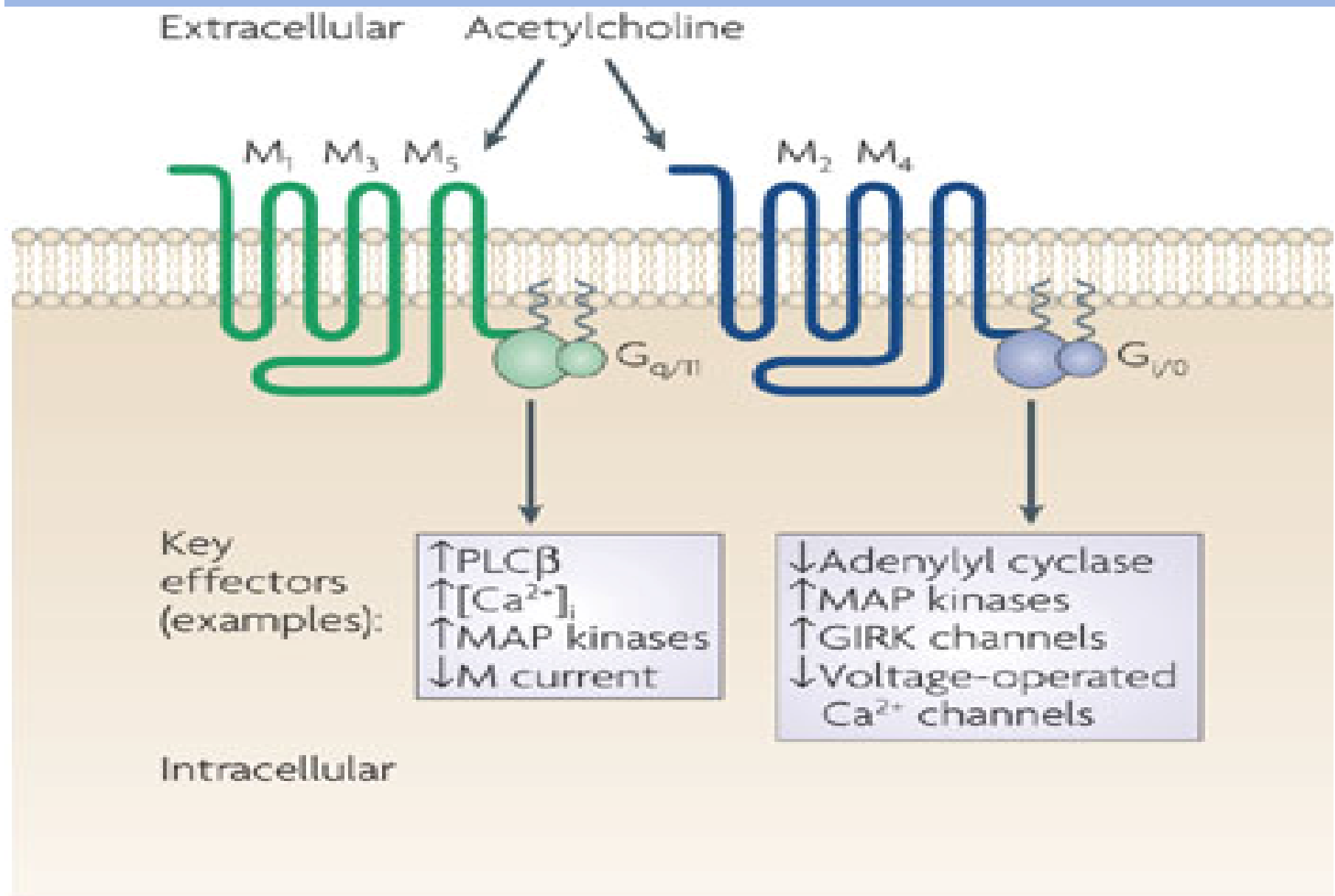


# Cholinergic Receptors

<b>M1</b>	<b>Secretory glands</b>	salivation, stomach acid, sweating, lacrimation
<b>M2</b>	<b>Heart</b>	Decreases heart rate → bradycardia
<b>M3</b>	<b>Smooth muscle (GI/GU/Resp)</b>	Contraction of smooth muscles (some) → diarrhea, bronchospasm, urination
<b>M3</b>	<b>Pupil and ciliary muscle</b>	Contracts → Miosis Increased flow of aqueous humor
<b>Nm</b>	<b>Skeletal muscle end plate</b>	Contraction of skeletal muscle
<b>Nn</b>	<b>Autonomic ganglia, Adrenal Medulla</b>	Secretion of Epinephrine Controls ANS



<https://www.quora.com/How-do-adrenergic-receptors-and-cholinergic-receptors-differ>



## Muscarinic Cholinergic Receptor of Sweat Glands



Fig. 6-3

FMc

# Nicotinic Cholinergic Receptor

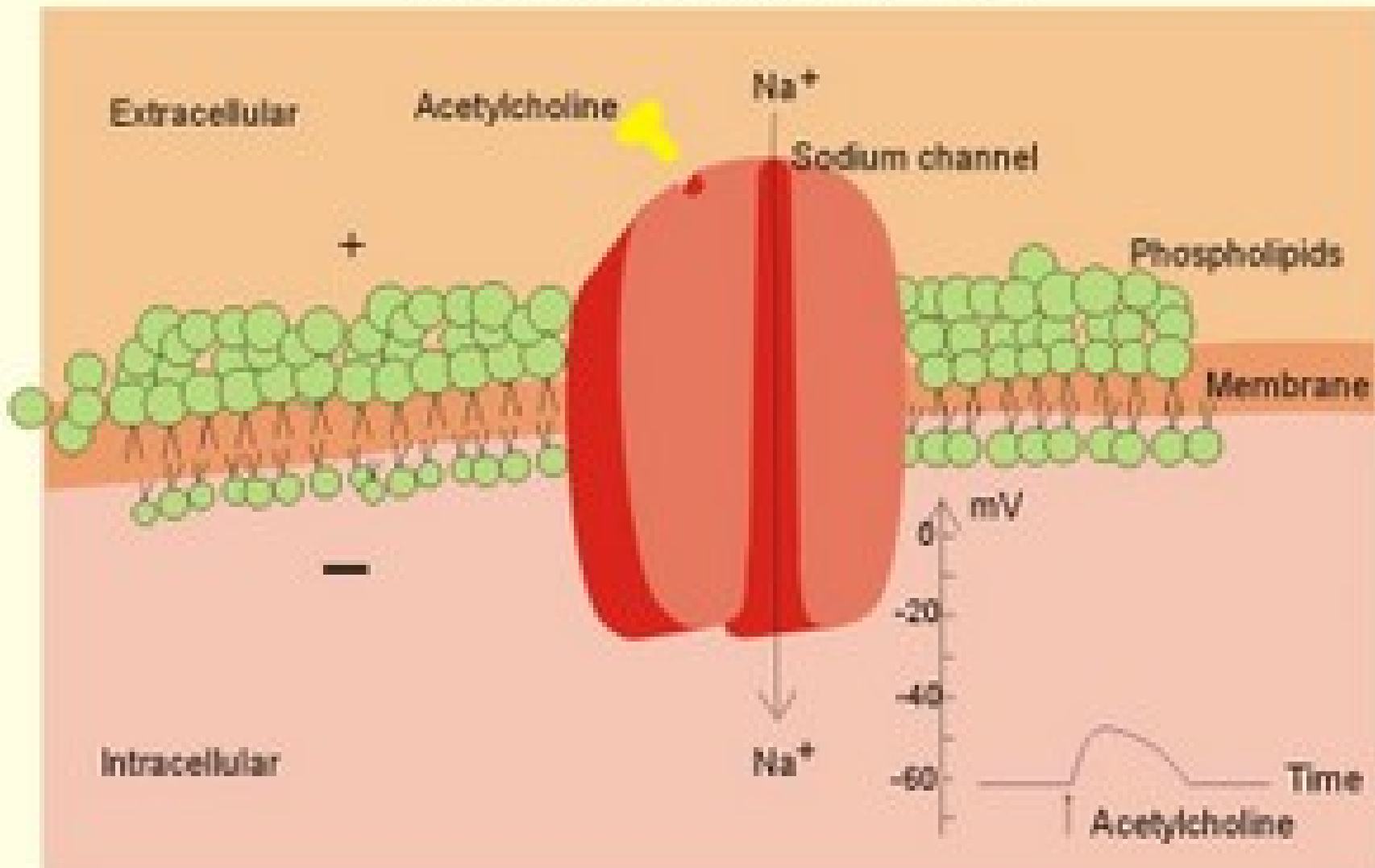
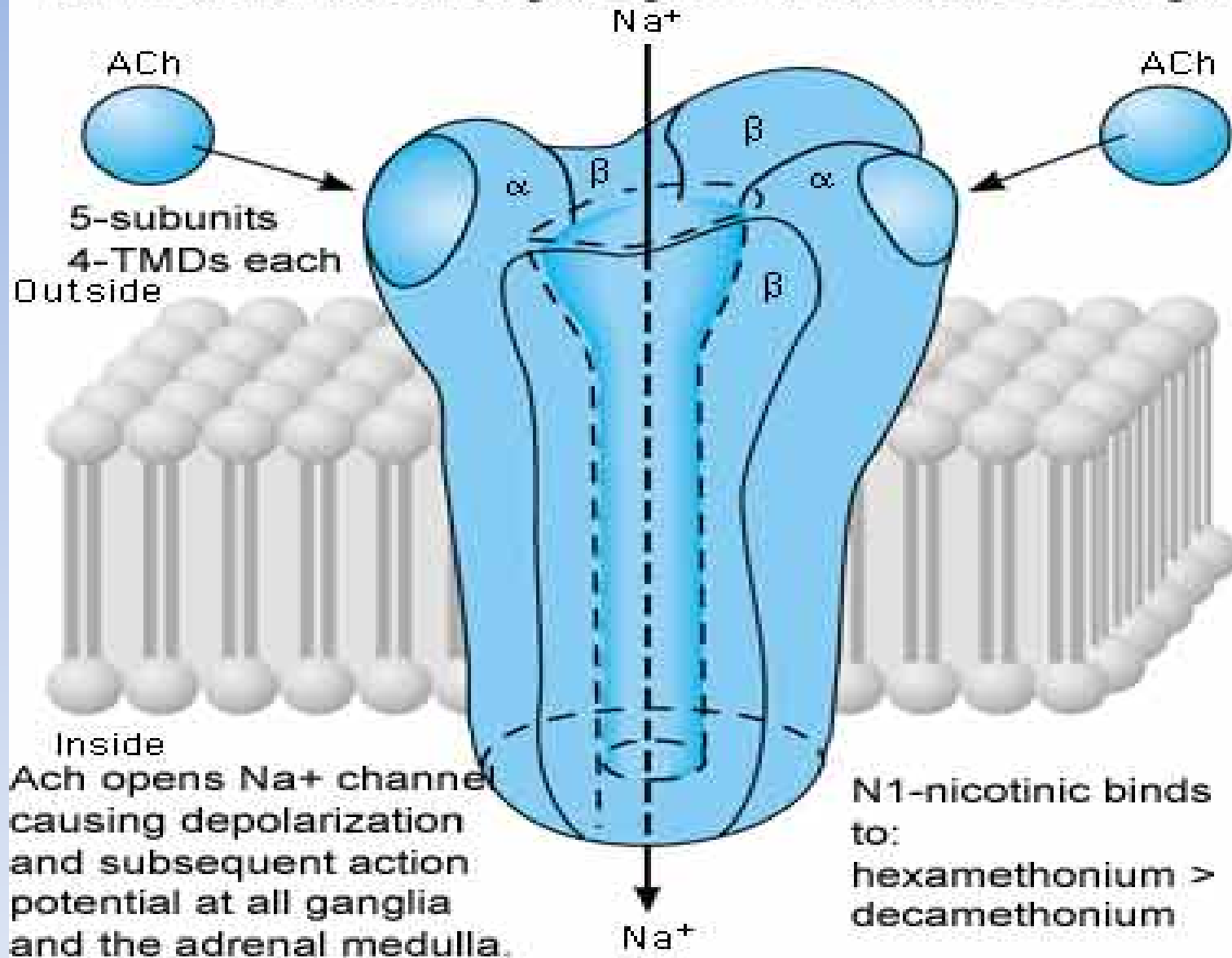


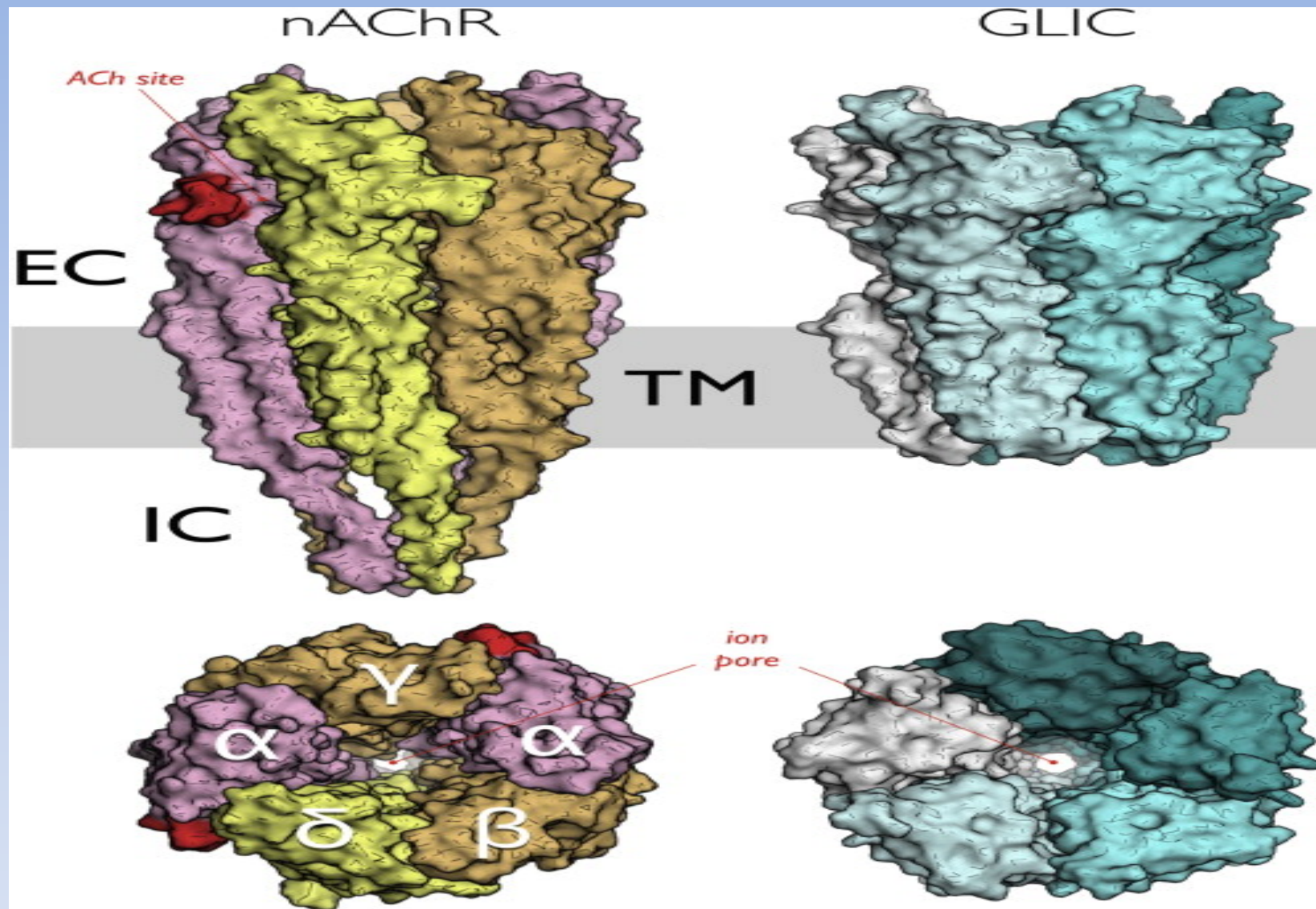
Fig. 6-2

<http://www.zuniv.net/physiology/book/chapter6.html>



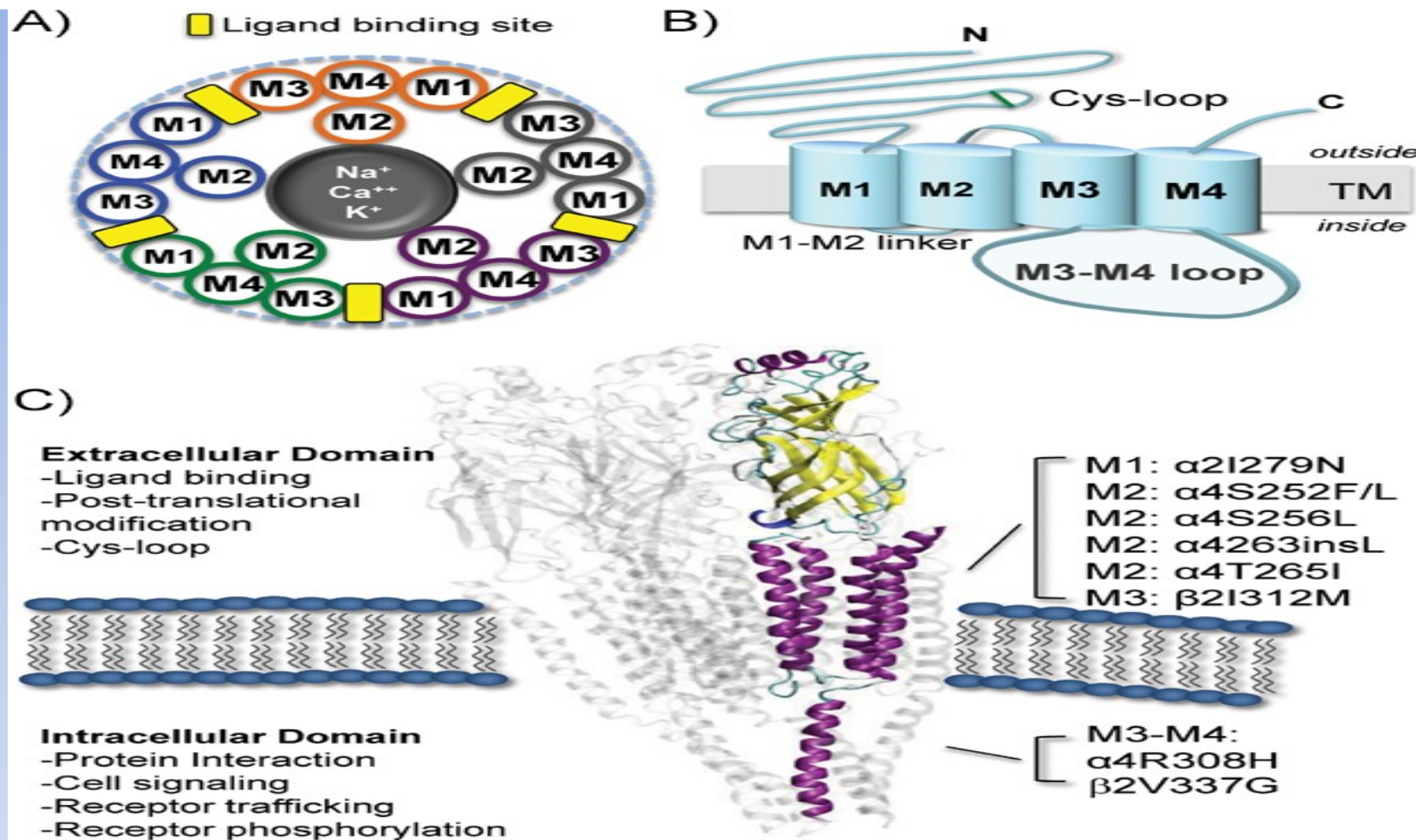
## N1-Neuronal-nicotinic ligand-gated ion channel: at Ganglia





### General topology of pLGICs (Pentameric ligand-gated ion channels)

The nicotinic acetylcholine receptor and its prokaryotic homologues: Structure, conformational transitions & allosteric modulation. [Neuropharmacology](#). 2015 Sep;96(Pt B):137-49. doi: 10.1016/j.neuropharm.2014.12.006. Epub 2014 Dec 18. [Cecchini M](#), [Changeux JP](#).



## nAChR Structure and function.

**A:** The nAChR as viewed from above shows five subunits arranged around a central cation-conducting pore. A ligand-binding site is formed at the interface of two subunits. **B:** An illustration of a single nAChR subunit embedded in the membrane. **C:** The protein structure of the pentameric nAChR obtained from *T. marmorata* (PDB 2BG9) in the plasma membrane. Shown are the location and function of the major receptor domains. A single subunit is highlighted in purple using visual molecular dynamics (VMD). Mutations in the membrane and intracellular regions of the human nAChR are shown

[Bioessays](#). 2013 Dec;35(12):1025-34. Are nicotinic acetylcholine receptors coupled to G proteins? [Kabani N](#)

# The Neuromuscular Junction And Intracellular Events

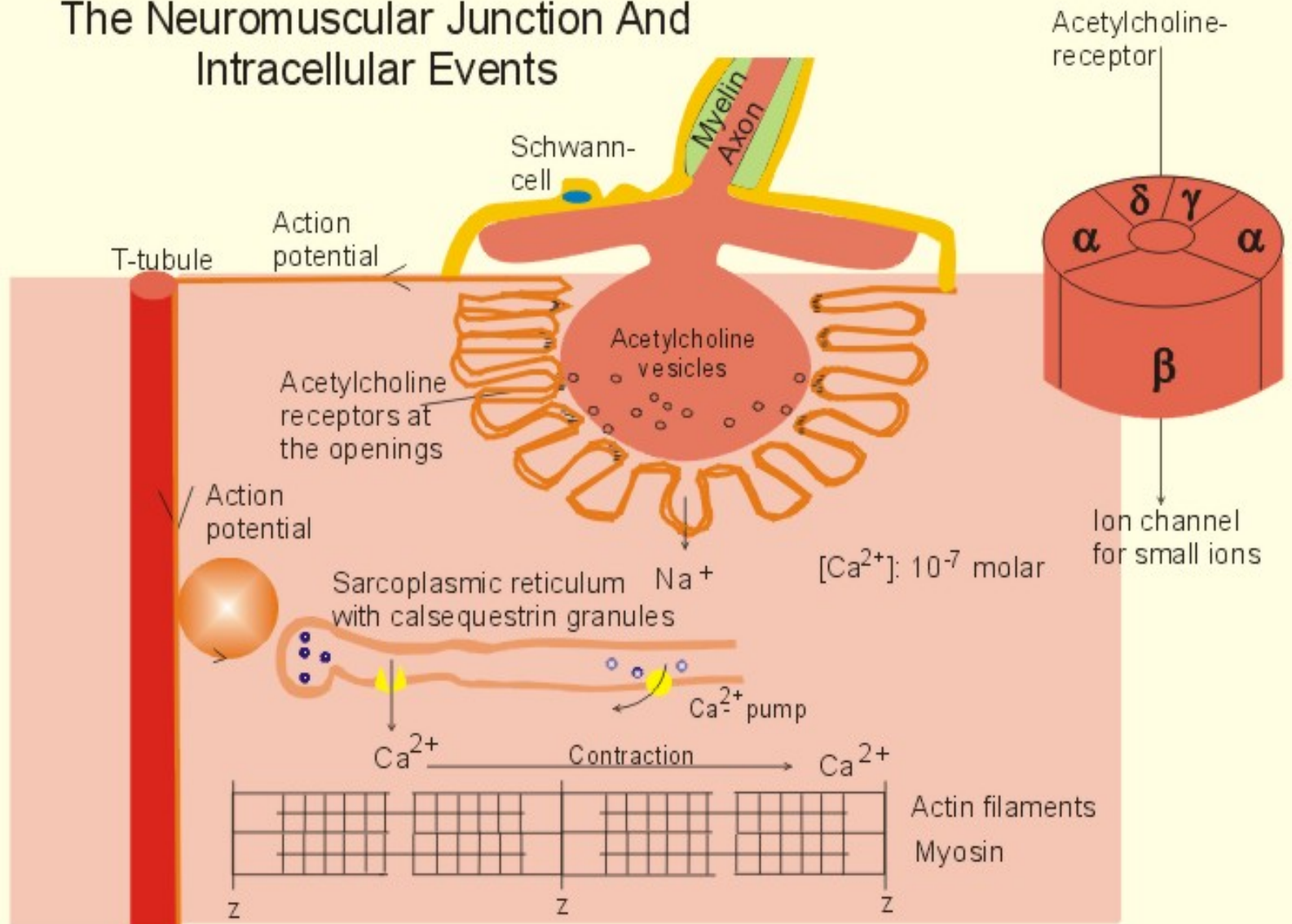


Fig. 2-1

KMc

