Synaptic Transmission

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Keywords and Key concepts

Definition of synapse

Electrical synapse

Connexin molecules

Chemical synapse

Neuromuscular junction

Quantum

Quantal theory

Calcium chelators

Miniature endplate potentials (EPP)

Spontaneous vs evoked events

Calcium dependence of transmitter release

Residual calcium

Release probability

Calyx of Held

Squid giant axon

Paired pulse experiments

Paired pulse facilitation

Paired pulse depression

Readily releasable pool

Synaptic vesicle cycle (endocytosis, translocation, sorting, loading, storage, mobilization, docking, priming, fusion)

Vesicle pool refill rate

Vesicle depletion

Presynaptic GABAB receptors

Postsynaptic density (PSD)

Neurotransmitter transporter

Vesicle coating proteins (no need to know in detail)

Synaptotagmin is a calcium sensor

Postsynaptic receptors

Ionotropic

Metabotropic

Temporal characteristics of postsynaptic responses

Caged compounds (GABA, glutamate)

Postsynaptic spines

Spine morphology

Spine morphology influence on calcium dynamics

Corelease of neurotransmitters

I-V curves

Inward rectification

Magnesium block

Coincidence detector

AMPA and NMDA receptor ion permeability

Spine dynamics

Synaptic pruning

Subcellular fractionation

Synaptosomes

Cell adhesion molecules

Kinases

Phosphatases

Long-term potentiation (LTP)

Theta-burst stimulation (behaviour)

Mechanisms of LTP (pre- and postsynaptic)

Post-tetanic potentiation

Short-term potentiation

Immediate early genes

AMPA receptor trafficking

Silent synapses