Molecular Mechanisms Of Neurotransmitter Release Contemporary Neuroscience

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Molecular Mechanisms Of Neurotransmitter Release

The aim of Molecular Mechanisms of Neurotransmitter Release is to provide up-to-date, in-depth coverage of essentially all major mole- lar mechanisms of neurotransmitter release. The contributors have made great efforts to write concisely but with sufficient background information, and to use figures/diagrams to present clearly key concepts or experiments.

Molecular Mechanisms of Neurotransmitter Release ...

In Molecular Mechanisms of Neurotransmitter Release, leading experts provide concise, up-to-date information on all major molecular mechanisms involved, with complete background information and figures and diagrams to further elucidate key concepts or experiments.

Molecular Mechanisms of Neurotransmitter Release | Zhao ...

During synaptic transmission, Ca2+influx into the presynaptic terminal triggers neurotransmitter release. This process involves sensing Ca2+, and subsequently fusing neurotransmitter-filled synaptic vesicles with the presynaptic membrane in less than a millisecond (122, 139).

Molecular mechanisms of fast neurotransmitter release

Some of the molecular processes that govern neurotransmitter release are now becoming better understood. The steps involved can be broken down into two partially overlapping presynaptic cycles, the neurotransmitter cycle and the synaptic vesicle cycle. The neurotransmitter cycle involves transmitter biosynthesis, storage, reuptake, and degradation.

Molecular mechanisms of neurotransmitter release - Fon ...

In Molecular Mechanisms of Neurotransmitter Release, leading experts provide concise, up-to-date information on all major molecular mechanisms involved, with complete background information and figures and diagrams to further elucidate key concepts or experiments.

Molecular Mechanisms of Neurotransmitter Release ...

The vesicle hypothesis of neurotransmitter release was first formulated in the 1950s, but only recently have the molecular mechanisms involved in neurotransmitter release begun to be elucidated. This short review summarizes current concepts on neurosecretion and the available information on synaptic vesicle exocytosis.

Molecular mechanisms in neurotransmitter release ...

Leading international investigators examine the properties and composition of the vesicles that store neurotransmitters and the molecular and cellular mechanisms that cause a vesicle to release

transmitters in response to a nerve impulse. Coverage includes detailed analyses of quantal release of transmitters in the central and peripheral nervous systems.

Molecular & Cellular Mechanisms of Neurotransmitter ...

This chapter focuses on the mechanism of neurotransmitter release. The primary form of intercellular communication within the nervous system is mediated by chemical transmission at synapses. Upon propagation of an action potential into the nerve terminal, there is an influx of Ca 2+ through voltage-activated Ca 2+ channels, which triggers the fusion of docked synaptic vesicles with the presynaptic membrane.

Mechanisms of Neurotransmitter Release - ScienceDirect

Single SV contains ~5000 molecules of neurotransmitter. Mean number of quanta released per impulse = N (number of release sites) x p (probability of release per release site) At NMJ, hundreds of quanta can be released from a large number of release sites. (NMJ is an all-or-none synapse, designed to faithfully transmit.)

Presynaptic mechanisms: neurotransmitter release, synaptic ...

This review addresses the multiple mechanisms of action that underlie these compounds' most prominent and paradigmatic biological effect—to elevate extracellular levels of catecholamines and serotonin via a mechanism that is independent of the classical means of transmitter release by secretory vesicle fusion.

Mechanisms of neurotransmitter release by amphetamines: A ...

Molecular Mechanisms of Fast Neurotransmitter Release Annu Rev Biophys . 2018 May ... 1 Department of Molecular and Cellular Physiology, Department of Neurology and Neurological Sciences, Department of Structural Biology, Department of Photon ... and highlights recent insights

in the cooperation of these proteins for neurotransmitter release.

Molecular Mechanisms of Fast Neurotransmitter Release

The extensive molecular remodeling of the release machinery induced by activity withdrawal requires regulation of protein turnover at synapses, which might be in principal driven by two mechanisms: (1) alteration of protein synthesis rates at transcriptional or translational level or (2) regulation of the selective removal of synaptic proteins, mostly via the ubiquitin-proteasome system (UPS; Figures 1B,C).

Molecular mechanisms driving homeostatic plasticity of ...

Nerve cells communicate by releasing the contents of neurotransmitter-bearing synaptic vesicles into the space between adjoining cells. This process depends on a handful of proteins that promote vesicle and nerve cell membrane fusion.

Molecular mechanisms of neurotransmitter release

Molecular Mechanisms of Fast Neurotransmitter Release. Annual Review of Biophysics Vol. 47:469-497 (Volume publication date May ... -18), and Munc13 (mammalian uncoordinated-13), and highlights recent insights in the cooperation of these proteins for neurotransmitter release.

Molecular Mechanisms of Fast Neurotransmitter Release ...

Download Citation | Molecular mechanisms of neurotransmitter release | The release of neurotransmitter from neurons represents one of the pivotal events in synaptic transmission. Neurotransmitters ...

Molecular mechanisms of neurotransmitter release

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Contemporary Neuroscience: Molecular Mechanisms of ...

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Molecular mechanisms in neurotransmitter release — Italian ...

Neurotransmitter, any of a group of chemical substances released by neurons to stimulate other neurons or muscle or gland cells. Signaling by neurotransmitters allows impulses to be passed from one cell to the next throughout the nervous system. Learn more about the types and functions of neurotransmitters.

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