

Presynaptic Vesicle Cycle Antibody Sampler Kit



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1 Kit (9 x 20 microliters)

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For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Complexin-1 (D5Q5H) Rabbit mAb	17700	20 µl	14 kDa	Rabbit IgG
Complexin-1/2 (D8A6E) Rabbit mAb	28070	20 µl	14-16 kDa	Rabbit IgG
Munc18-1 (D4O6V) Rabbit mAb	13414	20 µl	70 kDa	Rabbit IgG
SNAP25 (D7B4) Rabbit mAb	5308	20 µl	25 kDa	Rabbit IgG
Synaptophysin (D8F6H) XP® Rabbit mAb	36406	20 µl	38 kDa	Rabbit IgG
Synaptotagmin-1 (D33B7) Rabbit mAb	14558	20 µl	60 kDa	Rabbit IgG
Synapsin-1 (D12G5) XP® Rabbit mAb	5297	20 µl	77 kDa	Rabbit IgG
Syntaxin 1A (D4E2W) Rabbit mAb	18572	20 µl	33 kDa	Rabbit IgG
VAMP2 (D6O1A) Rabbit mAb	13508	20 µl	13 kDa	Rabbit
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Presynaptic Vesicle Cycle Antibody Sampler Kit provides an economical means of detecting expression of key synaptic vesicle proteins. The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. *Do not aliquot the antibodies.*

Background

The synapse is the unit of information transfer in the brain between neurons (1). Synaptic transfer is initiated by action potential-initiated synaptic vesicles fusion at the presynaptic terminal to release neurotransmitters. The basic molecular machinery that drives all membrane fusion events in all cells include N-ethylmaleimide-sensitive factor attachment protein receptor (SNARE) proteins that form a trans-ternary complex between to-be-fused membranes. The zippering up of SNARE proteins provides the energy required for membrane fusion. At the synapse, the SNARE proteins include 25 kDa synaptosome-associated protein (SNAP25), syntaxin 1A (STX1A), and vesicle-associated membrane protein 2 (VAMP2, also called synaptobrevin). Neurotransmitter release, however, is a highly regulated process that occurs in response to action potential-initiated Ca²⁺-influx. Regulation of synaptic vesicle fusion is mediated by SNARE-binding proteins like complexin and the Ca²⁺-associated vesicle protein, synaptotagmin-1, that cooperatively function to initiate Ca²⁺-induced synaptic vesicle fusion. The synaptic vesicle cycle represents a cycle of events that prime the synaptic vesicle before fusion and retrieve fused membrane after full fusion. Synaptic vesicle-associated proteins like synaptophysin and synapsin-1, as well as target membrane proteins like Munc18-1, play a complex role in priming synaptic vesicles to be fusion competent.

Background References

1. Südhof, T.C. and Rothman, J.E. (2009) *Science* 323, 474-7.

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