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Product Information

Anti-Syntaxin 4
produced in rabbit, affinity isolated antibody

Catalog Number **S9924**

Product Description

Anti-Syntaxin 4 is produced in rabbit using a highly purified peptide RDRTHELRQGDNISDD-EDEVRV(C) ($Synt4_{2-23}$) corresponding to residues 2-23 of rat or mouse syntaxin 4,[1,2] with additional C-terminal cysteine as immunogen. The antibody was affinity isolated on immobilized Synt4 (residues 2-23).

Anti-Syntaxin 4 recognizes syntaxin 4 protein from rat by immunoblotting. Anti-Syntaxin 4 can also be used for immunohistochemistry.[3]

Chemical neurotransmitters are stored within the nerve terminal in synaptic vesicles that are often found associated with cytoskeletal components or the pre-synaptic plasma membrane.[4] Upon nerve stimulation, activation of voltage-gated Ca^{2+} channels in the nerve terminal plasma membrane results in an influx of Ca^{2+}. The increase in cytosolic Ca^{2+} concentration triggers the fusion of a portion of the synaptic vesicle population with the presynaptic plasma membrane, resulting in the neurotransmitter release. The docking and subsequent fusion of synaptic vesicles with the presynaptic plasma membrane occur at a restricted, morphologically distinct domain known as the active zone. The process of synaptic vesicle docking with the presynaptic membrane may represent the assembly of a prefusion complex that is likely to include components of each membrane. Three synaptic vesicle membrane proteins, synaptotagmin, synaptophysin,[5] and synapsin I, exhibit properties suggestive of a role in synaptic vesicle docking or fusion. Syntaxin (also cited as HPC-1 antigen),[4,6] a 35 kDa molecule with carboxy-terminal membrane anchor, is a synaptic protein identified by its ability to interact with the synaptic vesicle protein synaptotagmin. It has been implicated in docking at synaptic vesicles of presynaptic neurotransmitter release sites.[4,6,7] The molecular machinery for secretion seems to be conserved from yeast to neurons, since three genes have been identified in yeast that encode proteins with a carboxyl-terminal membrane anchor and significant homology to syntaxin, primarily over a 70 amino acid segment near the membrane anchor.[7,8] In addition, epimorphin, a protein expressed in mesenchymal cells that regulates the morphogenesis of adjacent epithelial cells, is also closely related (63% identical) to syntaxins A and B.[8] Antibodies reacting specifically against syntaxins are useful for studies on the molecular machinery of secretion, cellular heterogeneity, and the development of the central nervous system.

Reagents

Supplied lyophilized from phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 0.025% sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the lyophilized vial with 0.05 mL or 0.2 mL deionized water, depending on the package size purchased. Antibody dilutions should be made in buffer containing 1-3% bovine serum albumin.

Storage/Stability

Prior to reconstitution, store at –20 °C. After reconstitution, the stock antibody solution may be stored at 2-8 °C for up to 2 weeks. For extended storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile
Immunoblotting: the recommended working antibody dilution is 1:300-1:600 using Anti-Rabbit-Peroxidase and detection by ECL.

Note: In order to obtain the best results and assay sensitivities of various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

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