ProductInformation

ANTI-SYNTAXIN 2
Developed in Rabbit, Affinity Isolated Antibody

Product Number **S5687**

Product Description

Anti-Syntaxin 2 (epimorphin) is developed in rabbit using a highly purified peptide RDRLPDLTACRKSD-DGDN corresponding to amino acid residues 2-19 of rat syntaxin 2.[1] The antibody was affinity isolated using immobilized immunogen.

Anti-Syntaxin 2 recognizes Syntaxin 2 protein (35 kDa)from rat brain by immunoblotting. The epitope is specific for the N-terminal region of all splice variants of Syntaxin 2. The epitope is highly homologous in human and mouse Syntaxin 2 (respectively, 16 of 17 and 15 of 17 amino acids identical).

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.[1] 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,[2] and synapsin I, exhibit properties suggestive of a role in synaptic vesicle docking or fusion. Syntaxin (also cited as HPC-1 antigen),[1,3] a 35 kDa molecule with carboxyl-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.[1,3,4] 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.[4,5] 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.[5] 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.

Syntaxin 2 is a membrane-associated protein implicated in regulation of morphogenesis of the lungs and skin[6] as well as lumen formation and villus morphogenesis in the developing fetal gut.[7]

Reagents

Anti-Syntaxin 2 is supplied lyophilized at 0.3 mg/ml from phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin, 5% sucrose, and 0.025% sodium azide.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous 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 4°C for up to 2 weeks. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. 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

The recommended working dilution is 1:200 - 1:600 (0.5 - 1.5 µg/ml) for immunoblotting using peroxidase conjugated-goat anti-rabbit IgG and detection by chemiluminescence.

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

References

1. Bennett, M.K. et al., Science, **257**, 255-259 (1992).
2. Devoto, S. and Barnstable, C., Ann. N.Y. Acad. Sci., **493**, 493 (1987).
3. Barinaga, M., Science, **260**, 487-489 (1993).
4. Bennett, M.K. and Scheller, R., Proc. Natl. Acad. Sci. (USA), **90**, 2559-2563 (1993).
5. Hirai, Y. et al., Cell, **73**, 426 -427 (1993).
6. Hirai, Y. et al., Cell, **69**, 471-481 (1992).
7. Goyal, A. et al., Am. J. Physiol., **275**, G114-G124 (1998).

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