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ProductInformation

Monoclonal Anti- Munc13-1
Clone Munc13-71
Purified Mouse Immunoglobulin

Catalog Number **M6194**

Product Description

Monoclonal Anti-Munc13-1 (mouse IgG2b isotype) is derived from the hybridoma Munc13-71 produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 10-27 of rat Munc13-1, conjugated to KLH. This sequence is identical in human and mouse Munc13-1 protein. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO-2.

Monoclonal Anti-Munc13-1 recognizes rat and mouse Munc13-1 (approx. 200 kDa). The product is useful in ELISA and immunoblotting.

Munc13 proteins (also known as UNC13) are a family of neuron specific synaptic molecules that bind to syntaxin, an essential mediator of neurotransmitter release. The family consists of three members: Munc13-1, -2 and -3. Munc13-1 is expressed throughout the brain, whereas Munc13-2 is present in rostral brain regions and Munc13-3 in caudal areas. Munc13-2 and Munc13-3 are expressed in a complementary manner and act in concert with Munc13-1 to modulate neurotransmitter release.[1-2]

Munc13-1 contains a diacylglycerol (DAG)/β phorbol ester-binding C1 domain that is a potential target of the DAG second messenger pathway that may act in parallel with protein kinases C (PKCs). Munc13s are the main presynaptic DAG/β phorbol ester receptors in hippocampal neurons. Alterations of synaptic efficacy and survival are achieved by modulating the activity of Munc13-1 by second messengers via the DAG/β phorbol ester-binding C1 domain. Using knockout mice, it was shown that in hippocampal primary neurons, Munc13-1 and Munc13-2 are expressed in different synapse populations formed by the same axon.[1-2] Munc13-2 driven synapse showed pronounced and transient augmentation of synaptic amplitudes following high frequency stimulation. Thus Munc13s differentially determine short-term plasticity properties of individual synapses.[3]

Reagent

The product is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: approx. 2 mg/ml.

Precautions and Disclaimer

Due to the sodium azide content a material safety 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.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. 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

A working concentration of 1-2 µg/ml is determined by immunoblotting, using cytosolic rat brain S1 fraction.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Augustin, I., et al., *Biochem. J*. **337**, 363-371 (1999).
2. Rhee, J.S., et al., *Cell*, **108**, 121-133 (2002).
3. Rosenmund, C., et al., *Neuron*, **33**, 411-424 (2002).

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