

Product Information

Anti-Mint1

Developed in Rabbit, IgG Fraction of Antiserum

Product Number **M 3194**

Product Description

Anti-Mint1 is developed in rabbit using a synthetic peptide corresponding to amino-acids 1-19 located at the N-terminus of rat Mint1, conjugated to KLH, as immunogen. This sequence is highly conserved (90% identity) in human Mint1. It does not share homology with the Mint2 and Mint3 isoforms. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-Mint1 specifically recognizes Mint1 (120 kDa). Applications include the detection of Mint1 by immunoblotting. Staining of the Mint1 band in immunoblotting is specifically inhibited with the Mint1 immunizing peptide (rat, amino acids 1-19).

Synaptic transmission involves the regulated exocytosis of vesicles containing neurotransmitters at the synaptic vesicle zone. Munc-18-1 is an abundant neuronal protein that is essential for exocytosis of synaptic vesicles.^{1,2} The function of Munc-18-1 is thought to be mediated by two Munc-interacting proteins, Mint1 (Munc-18-1 interacting protein 1, also named X11 α , mLin-10, 120kDa) and Mint2 (X11 β , X11L, 120 kDa), that are 50% homologous. Mint1 and Mint2 are expressed exclusively in brain and bind Munc-18-1 with high affinity.^{3,5} A third isoform Mint3 (X11 γ , X11-like2, 60 kDa) is ubiquitously expressed. They are multidomain proteins, composed of specific N-terminal Munc-18-1-interacting domain (MID), a middle phosphotyrosine-binding (PTB) domain, and two C-terminal PDZ domains. This suggests that Mint proteins link vesicle exocytosis to Tyr phosphorylation and/or localization at specific plasma membrane domains. Mint1 localizes Munc-18-1 to the plasma membrane, whereas Munc-18-1 binds to the cytoplasmic tails of neurexins to form a multiprotein complex.⁵ Mint-1/X11 α is known to bind to the cytoplasmic tail of amyloid precursor protein (APP) via the PTB domain, and to presenilins via the PDZ domain, reducing the secretion of cellular β -APP and slowing β -APP processing pathways.⁶⁻¹⁰ Mint 1/X11 α binds specifically to the YENPTY motif that is involved in the internalization of β -APP.⁷

Mint1/X11 α directly binds to the adaptor protein CASK/mLin-2 to form a heterotrimeric complex containing Mint1CASK/mLin-7.⁴ Mint proteins also bind via their PDZ domains to plasma membrane receptors and Ca²⁺ channels. Mint1/X11 α is involved in the trafficking of the NMDA glutamate receptor by interacting with the motor protein kinesin Kif17.¹¹

Reagent

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

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.

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 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

A working dilution of 1:1,000-1:2,000 is determined by immunoblotting, using a rat brain and a mouse brain extract (S1 fraction).

10-20 μ l of the antibody can immunoprecipitate Mint1 protein from a rat brain extract (S1 fraction).

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

References

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