



3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

Product Information

Anti-Mint2

Developed in Rabbit, Affinity Isolated Antibody

Product Number **M 3319**

Synonyms: (Munc-18-1-interacting protein 2; X11 β ; X11L)

Product Description

Anti-Mint2 is developed in rabbit using a synthetic peptide corresponding to amino acids 1-18, located at the N-terminus of rat Mint2, conjugated to KLH, as immunogen. This sequence is highly conserved (single amino acid substitution) in mouse Mint2 and shows limited homology (66% identity) to human Mint2. It does not share homology with the Mint1 and Mint3 isoforms. Anti-Mint2 is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Mint2 specifically recognizes Mint2 (120 kDa). Applications include the detection of Mint2 by immunoblotting and immunoprecipitation. Staining of the Mint2 band in immunoblotting is specifically inhibited with the Mint2 immunizing peptide (rat, amino acids 1-18).

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; X11 α ; mLin-10, 120 kDa) and Mint2 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. The Mint proteins 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, suggesting 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 is known to bind to the cytoplasmic tail of amyloid precursor protein (APP) via the PTB domain, and to presenilins via the PDZ domain, thus reducing the secretion of cellular β -APP and slowing β -APP processing pathways.⁶⁻¹⁰

Mint1 binds specifically to the YENPTY motif that is involved in the internalization of β -APP.⁷ Mint proteins also bind via their PDZ domains to plasma membrane receptors and Ca²⁺ channels. Mint2, but not Mint1 and Mint3, was found to elevate the phosphorylation of β -amyloid precursor protein family members APP and APLP2 in response to cellular stress, by facilitating JNK-mediated phosphorylation.¹¹

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% BSA and 15 mM sodium azide as a preservative.

Antibody concentration: approx. 0.8 mg/ml

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 concentration of 0.25-0.5 μ g/ml is determined by immunoblotting, using a rat brain extract (S1 fraction).

5-10 μ g of the antibody can immunoprecipitate Mint2 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 concentrations by titration test.

References

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