

Mint 1

Cat.No. 144-1P; control protein, 100 µg protein (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg protein, lyophilized. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in TBS. Then aliquot and store at -20°C until use.
Immunogen	Recombinant protein corresponding to AA 2 to 265 from rat Mint1 (UniProt Id: O35430)
Recommended dilution	Optimal concentrations should be determined by the end-user.
matching antibodies	144 103
Remarks	This control protein consists of the recombinant protein (aa 2 265 of rat Mint 1) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of protein needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Mints (also referred to as X11-like proteins) are adaptor-proteins that consist of divergent N-terminal sequences and conserved C-terminal PTB and PDZ domains.

Three isoforms (**Mint 1**, 2 and 3) have been described. Mint 1 exclusively binds to the synaptic protein CASK via its N-terminal sequence. Munc18-1 has been shown to be an interaction partner of Mint 1 and 2. The more C-terminal located PTB and PDZ domains present in all Mint isoforms bind to widely distributed proteins like APP, presenilins and Ca²⁺ channels.

A Mint 1 knock out had no obvious effect on brain architecture and development, nor was synaptic plasticity in excitatory synapses affected. In inhibitory synapses of knock out strains the release of gamma-aminobutyric acid (GABA) was impaired.

Selected General References

Mint1, a Munc-18-interacting protein, is expressed in insulin-secreting beta-cells.

Zhang W, Lilja L, Bark C, Berggren PO, Meister B

Biochemical and biophysical research communications (2004) 320(3): 717-21.

A multiprotein trafficking complex composed of SAP97, CASK, Veli, and Mint1 is associated with inward rectifier Kir2 potassium channels.

Leonoudakis D, Conti LR, Radeke CM, McGuire LM, Vandenberg CA

The Journal of biological chemistry (2004) 279(18): 19051-63.

A role for Mints in transmitter release: Mint 1 knockout mice exhibit impaired GABAergic synaptic transmission.

Ho A, Morishita W, Hammer RE, Malenka RC, Sudhof TC

Proceedings of the National Academy of Sciences of the United States of America (2003) 100(3): 1409-14.

Regulation of APP-dependent transcription complexes by Mint/X11s: differential functions of Mint isoforms.

Biederer T, Cao X, Südhof TC, Liu X

The Journal of neuroscience : the official journal of the Society for Neuroscience (2002) 22(17): 7340-51.

CASK participates in alternative tripartite complexes in which Mint 1 competes for binding with caskin 1, a novel CASK-binding protein.

Tabuchi K, Biederer T, Butz S, Sudhof TC

The Journal of neuroscience : the official journal of the Society for Neuroscience (2002) 22(11): 4264-73.

Amyloid precursor protein associates independently and collaboratively with PTB and PDZ domains of mint on vesicles and at cell membrane.

Okamoto M, Nakajima Y, Matsuyama T, Sugita M

Neuroscience (2001) 104(3): 653-65.

Modulation of amyloid precursor protein metabolism by X11alpha/Mint-1. A deletion analysis of protein-protein interaction domains.

Mueller HT, Borg JP, Margolis B, Turner RS

The Journal of biological chemistry (2000) 275(50): 39302-6.