Munc18-1

Cat.No. 116 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage 100 µg purified IgG, lyophilized. For reconstitution add 100 µl H2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.

Applications WB: 1 : 1000 up to 1 : 5000 (AP staining) (see remarks)
IP: yes
ICC: 1 : 1000
IHC: not recommended
IHC-P/FFPE: not recommended
ELISA: yes (see remarks)

Clone 131.1

Subtype IgG2a (κ light chain)

Immunogen Recombinant protein corresponding to AA 1 to 594 from rat Munc18-1 (UniProt Id: P61765)

Reactivity Reacts with: rat (P61765), mouse (O08599).
Other species not tested yet.

Specificity Specific for munc 18-1 with a minor cross-reactivity to munc 18-2.

Remarks WB: This antibody detects two smaller bands (possible degradation products) of unknown identity.

ELISA: Suitable as capture antibody for sandwich-ELISA with cat. no. 116 002 as detector antibody (protocol for sandwich-ELISA).

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

Munc 18 is an abundant neuronal protein that tightly binds to the synaptic fusion protein syntaxin 1. It is highly homologous to the C. elegans unc-18 gene product, and weakly related to the yeast sec1, sly1, and slp1 genes.

There are three munc 18 isoforms in mammals. Munc 18-1 or 18a, also referred to as rb-sect1, n-sect1, stxbp1 and p67, is primarily expressed in neurons. Munc 18-2 or 18b, also referred to as stxbp2, and Munc 18-3 or 18c are expressed ubiquitously.

Selected References SYSY Antibodies

The effects of antidepressant treatment in prematurely stressed rats support the glutamatergic hypothesis of stress-related disorders.

Dendritic position is a major determinant of presynaptic strength.
de Jong AP, Schmitz SK, Toonen RF, Verhage M

The reduction in glutamate release is predictive of cognitive and emotional alterations that are corrected by the positive modulator of AMPA receptors S 47445 in perinatal stressed rats.

Riluzole attenuates the efficacy of glutamatergic transmission by interfering with the size of the readily releasable neurotransmitter pool.
Lazarevic V, Yang Y, Ivanova D, Feljtova A, Svenningson P
Neuropsychopharmacology (2018) : 1 ; ICC; tested species: rat

Potentiation of exocytotic synaptic transmission ameliorates aggression in mice with Stxbp1 haploinsufficiency.

Synaptic vesicle glycoprotein 2A (SV2A) regulates kindling epileptogenesis via GABAergic neurotransmission.
Scientific reports (2016) 6: 27420. WB

Small-scale isolation of synaptic vesicles from mammalian brain.
Ahmed S, Holt M, Riedel D, Jahn R

Anxiety-like behavior of prematurely stressed rats is associated with a selective reduction of glutamate release in the ventral hippocampus.

Munc18-1 regulates first-phase insulin release by promoting granule docking to multiple syntaxin isoforms.
Oh E, Kalwat MA, Kim MJ, Verhage M, Thurmord DC

Stimulus-induced S-nitrosylation of Syntaxin 4 impacts insulin granule exocytosis.
Wiseman DA, Kalwat MA, Thurmord DC

Endosomal sorting of readily releasable synaptic vesicles.

Selected General References

Molecular identification of two novel Munc-18 isoforms expressed in non-neuronal tissues.
Tellam JT, McIntosh S, James DE

Slip-a-granulinphilin-a interacts with syntaxin-2/3 in a Munc18-2-dependent manner.
Fukuda M, Imai A, Nishida T, Shimomura H

Evidence of a role for Munc18-2 and microtubules in mast cell granule exocytosis.
Martin-Verdeaux S, Pombo I, Iannascoli B, Roa M, Varin-Blank N, Rivera J, Blank U

Munc18-2, a functional partner of syntaxin 3, controls apical membrane trafficking in epithelial cells.
Riento K, Kauppi M, Keranen S, Oikonen VM

A novel ubiquitinous form of Munc-18 interacts with multiple syntaxins. Use of the yeast two-hybrid system to study interactions between proteins involved in membrane traffic.
Hata Y, Südholz TG