

Munc 13-2

Cat.No. 126 203; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: not tested yet ICC: not tested yet IHC: not tested yet IHC-P/FFPE: not tested yet
Immunogen	Recombinant protein corresponding to AA 151 to 317 from rat Munc13-2 (UniProt Id: Q62769)
Reactivity	Reacts with: rat (Q62769), mouse (Q9Z1N9). Other species not tested yet.
Specificity	Specific for munc 13-2 brain specific isoform. (K.O. verified)

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

Munc 13s are homologues of the *C. elegans* unc-13 gene product. Three brain specific isoforms, Munc 13-1, -13-2, and -13-3 are expressed in rat where they localize to presynaptic terminals. All three isoforms share multiple regulatory domains that may mediate phorbol ester and diacylglycerol binding.

Munc13-1 shows the broadest expression pattern and is found in cortex, cerebellum, olfactory bulb and hippocampus. Munc 13-2 is mainly expressed in cortex and hippocampus whereas **Munc 13-3** exhibits highest expression levels in cerebellum and pons. Munc13-1 interacts directly with a putative coiled coil domain in the N-terminal part of syntaxin and is involved in synaptic vesicle priming. For Munc13-2 an additional ubiquitously expressed N-terminal splice variant (ubMunc 13-2) has been described.

Munc 13-3 has been shown to be involved in the regulation of cerebellar synaptic transmission and motor learning.

Selected References SYSY Antibodies

Differential Expression of Munc13-2 Produces Unique Synaptic Phenotypes in the Basolateral Amygdala of C57BL/6J and DBA/2J Mice.

Gioia DA, Alexander NJ, McCool BA

The Journal of neuroscience : the official journal of the Society for Neuroscience (2016) 36(43): 10964-10977. **WB**

Selected General References

Regulation of insulin exocytosis by Munc13-1.

Sheu L, Pasyk EA, Ji J, Huang X, Gao X, Varoquaux F, Brose N, Gaisano HY

The Journal of biological chemistry (2003) 278(30): 27556-63.

Rab34 and its effector munc13-2 constitute a new pathway modulating protein secretion in the cellular response to hyperglycemia.

Goldenberg NM, Silverman M

American journal of physiology. Cell physiology (2009) 297(4): C1053-8.

Munc13-2/- baseline secretion defect reveals source of oligomeric mucins in mouse airways.

Zhu Y, Ehre C, Abdullah LH, Sheehan JK, Roy M, Evans CM, Dickey BF, Davis CW

The Journal of physiology (2008) 586(7): 1977-92.

Bidirectional regulation of Munc13-3 protein expression by age and dark rearing during the critical period in mouse visual cortex.

Yang CB, Kiser PJ, Zheng YT, Varoquaux F, Mower GD

Neuroscience (2007) 150(3): 603-8.

Cast: a novel protein of the cytomatrix at the active zone of synapses that forms a ternary complex with RIM1 and munc13-1.

Ohtsuka T, Takao-Rikitsu E, Inoue E, Inoue M, Takeuchi M, Matsubara K, Deguchi-Tawarada M, Satoh K, Morimoto K, Nakanishi H, Takai Y, et al.

The Journal of cell biology (2002) 158(3): 577-90.

Identification of Munc13-3 as a candidate gene for critical-period neuroplasticity in visual cortex.

Yang CB, Zheng YT, Li GY, Mower GD

The Journal of neuroscience : the official journal of the Society for Neuroscience (2002) 22(19): 8614-8.

The cerebellum-specific Munc13 isoform Munc13-3 regulates cerebellar synaptic transmission and motor learning in mice.

Augustin I, Korte S, Rickmann M, Kretschmar HA, Südhof TC, Herms JW, Brose N

The Journal of neuroscience : the official journal of the Society for Neuroscience (2001) 21(1): 10-7.

Munc13-1 acts as a priming factor for large dense-core vesicles in bovine chromaffin cells.

Ashery U, Varoquaux F, Voets T, Betz A, Thakur P, Koch H, Neher E, Brose N, Rettig J

The EMBO journal (2000) 19(14): 3586-96.

Regulation of transmitter release by Unc-13 and its homologues.

Brose N, Rosenmund C, Rettig J

Current opinion in neurobiology (2000) 10(3): 303-11.

Differential expression of two novel Munc13 proteins in rat brain.

Augustin I, Betz A, Herrmann C, Jo T, Brose N

The Biochemical journal (1999) 337 (Pt 3): 363-71.

Direct interaction of the rat unc-13 homologue Munc13-1 with the N terminus of syntaxin.

Betz A, Okamoto M, Benseler F, Brose N

The Journal of biological chemistry (1997) 272(4): 2520-6.

The synaptic vesicle cycle: a cascade of protein-protein interactions.

Südhof TC

Nature (1995) 375(6533): 645-53.

Mammalian homologues of *Caenorhabditis elegans* unc-13 gene define novel family of C2-domain proteins.

Brose N, Hofmann K, Hata Y, Südhof TC

The Journal of biological chemistry (1995) 270(42): 25273-80.

Synaptic vesicles and exocytosis.

Jahn R, Südhof TC

Annual review of neuroscience (1994) 17: 219-46.