

Synaptobrevin 2

Cat.No. 104-2P; control peptide, 100 µg peptide (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg peptide, lyophilized. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use. Control peptides should also be stored at -20°C when still lyophilized!
Immunogen	Synthetic peptide corresponding to AA 2 to 17 from rat Synaptobrevin2 (UniProt Id: P63045)
Recommended dilution	Optimal concentrations should be determined by the end-user.
matching antibodies	104 202, 104 204, 104 211, 104 211BT, 104 211C3, 104 211C5, 104 318, 104 211AT594
Remarks	This control peptide consists of the synthetic peptide (SATAATVPPAAPAGEG) 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 peptide 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

Synaptobrevins/VAMPs represents a family of integral membrane proteins of 11-13 kDa with the N-terminal region exposed to the cytoplasm and a C-terminal transmembrane domain. Two isoforms were identified in the mammalian CNS, synaptobrevin 1 (VAMP 1 or p18-1) and **synaptobrevin 2** (VAMP 2 or p18-2) that differ in their distribution within different brain regions. Synaptobrevin 1 is highly conserved between vertebrates and invertebrates. It is a major constituent of synaptic vesicles and peptidergic secretory granules in all neurons examined so far. In addition, it is present on secretory granules of neuroendocrine cells. Low levels of synaptobrevin 2 are present in many other tissues where the protein resides on specialized microvesicles. In non-neuronal cells the third isoform, cellubrevin (VAMP 3), is present where it is localized to an endosomal membrane pool. Synaptobrevin/VAMP is an essential component of the exocytotic fusion machine, related to a larger protein family referred to as v-SNAREs. It is the sole target for tetanus and several of the botulin neurotoxins which cleave the protein at single sites in the C-terminal portion of the molecule.

Selected General References

- Mechanisms of synaptic vesicle exocytosis.
Lin RC, Scheller RH
Annual review of cell and developmental biology (2000) 16: 19-49.
- Membrane fusion and exocytosis.
Jahn R, Südhof TC
Annual review of biochemistry (1999) 68: 863-911.
- Export of cellubrevin from the endoplasmic reticulum is controlled by BAP31.
Annaert WG, Becker B, Kistner U, Reth M, Jahn R
The Journal of cell biology (1997) 139(6): 1397-410.
- Synaptobrevin binding to synaptophysin: a potential mechanism for controlling the exocytotic fusion machine.
Edelmann L, Hanson PI, Chapman ER, Jahn R
The EMBO journal (1995) 14(2): 224-31.
- The synaptic vesicle cycle: a cascade of protein-protein interactions.
Südhof TC
Nature (1995) 375(6533): 645-53.
- Synaptic vesicles and exocytosis.
Jahn R, Südhof TC
Annual review of neuroscience (1994) 17: 219-46.
- Cellubrevin is a ubiquitous tetanus-toxin substrate homologous to a putative synaptic vesicle fusion protein.
McMahon HT, Ushkaryov YA, Edelmann L, Link E, Binz T, Niemann H, Jahn R, Südhof TC
Nature (1993) 364(6435): 346-9.
- Structures and chromosomal localizations of two human genes encoding synaptobrevins 1 and 2.
Archer BT, Ozçelik T, Jahn R, Francke U, Südhof TC
The Journal of biological chemistry (1990) 265(28): 17267-73.
- A synaptic vesicle membrane protein is conserved from mammals to Drosophila.
Südhof TC, Baumert M, Perin MS, Jahn R
Neuron (1989) 2(5): 1475-81.
- Two vesicle-associated membrane protein genes are differentially expressed in the rat central nervous system.
Elferink LA, Trimble WS, Scheller RH
The Journal of biological chemistry (1989) 264(19): 11061-4.
- Synaptobrevin: an integral membrane protein of 18,000 daltons present in small synaptic vesicles of rat brain.
Baumert M, Maycox PR, Navone F, De Camilli P, Jahn R
The EMBO journal (1989) 8(2): 379-84.
- VAMP-1: a synaptic vesicle-associated integral membrane protein.
Trimble WS, Cowan DM, Scheller RH
Proceedings of the National Academy of Sciences of the United States of America (1988) 85(12): 4538-42.