

SV2 B

Cat.No. 119 102; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/Storage	200 µl antiserum, lyophilized. For reconstitution add 200 µl H ₂ O, then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) (see remarks) IP: yes ICC: 1 : 200 up to 1 : 2000 IHC: 1 : 200 up to 1 : 2000 IHC-P/FFPE: 1 : 200
Immunogen	Synthetic peptide corresponding to AA 2 to 17 from rat SV2B (UniProt Id: Q63564)
Reactivity	Reacts with: human (Q7L112), rat (Q63564), mouse (Q8BG39), hamster, chicken. Other species not tested yet.
Specificity	Specific for SV 2B. (K.O. verified)
matching control	119-1P
Remarks	WB: SV 2 aggregates after boiling, making it necessary to run SDS-PAGE only with non-boiled samples.

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

SV 2s (synaptic vesicle protein 2) are integral membrane glycoproteins present in all synaptic vesicles. They have 12 transmembrane domains predicted by sequence analysis. There are three characterized isoforms, SV 2A, SV 2B and SV 2C. SV 2A is expressed ubiquitously throughout the brain and is probably involved in the maintenance of a pool of synaptic vesicles competent for calcium-stimulated exocytosis. **SV 2B** has a more restricted distribution with varying degrees of coexpression with SV 2A. SV 2C is more closely related to SV 2A but shows a very restricted expression pattern. The highest expression levels were observed in phylogenetically old brain areas like pallidum, the midbrain and the olfactory bulb. SV2 expression has also been observed in other organs. In kidney it localizes to podocytes.

Selected References SYSY Antibodies

- Synaptic vesicle protein 2B is expressed in podocyte, and its expression is altered in proteinuric glomeruli. Miyauchi N, Saito A, Karasawa T, Harita Y, Suzuki K, Koike H, Han GD, Shimizu F, Kawachi H *Journal of the American Society of Nephrology* : JASN (2006) 17(10): 2748-59. **WB, ICC, IHC**
- Extensive remodeling of the presynaptic cytomatrix upon homeostatic adaptation to network activity silencing. Lazarevic V, Schöne C, Heine M, Gundelfinger ED, Fajtova A *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2011) 31(28): 10189-200. **WB, ICC**
- Loss of the Synaptic Vesicle Protein SV2B results in reduced neurotransmission and altered synaptic vesicle protein expression in the retina. Morgans CW, Kense-Hammes P, Hurley JB, Burton K, Idzerda R, McKnight GS, Bajjalieh SM *PLoS one* (2009) 4(4): e5230. **WB, IHC; KO verified; tested species: mouse**
- Brain synaptic junctional proteins at the acrosome of rat testicular germ cells. Redecker P, Kreutz MR, Bockmann J, Gundelfinger ED, Boeckers TM *The journal of histochemistry and cytochemistry : official journal of the Histochemistry Society* (2003) 51(6): 809-19. **WB, IHC**
- SV2C is a synaptic vesicle protein with an unusually restricted localization: anatomy of a synaptic vesicle protein family. Janz R, Südhof TC *Neuroscience* (1999) 94(4): 1279-90. **WB, IHC**
- SV2B is essential for the integrity of the glomerular filtration barrier. Fukusumi Y, Wakamatsu A, Takashima N, Hasegawa E, Miyauchi N, Tomita M, Kawachi H *Laboratory investigation; a journal of technical methods and pathology* (2015) 95(5): 534-45. **IHC**
- Expression pattern of synaptic vesicle protein 2 (SV2) isoforms in patients with temporal lobe epilepsy and hippocampal sclerosis. Crèvecoeur J, Kaminski RM, Rogister B, Foerch P, Vandenplas C, Neveux M, Mazzuferi M, Kroonen J, Poulet C, Martin D, Sadzot B, et al. *Neuropathology and applied neurobiology* (2014) 40(2): 191-204. **IHC; tested species: human**
- Physiological characterisation of human iPSC-derived dopaminergic neurons. Hartfield EM, Yamasaki-Mann M, Ribeiro Fernandes HJ, Vowles J, James WS, Cowley SA, Wade-Martins R *PLoS one* (2014) 9(2): e87388. **ICC; tested species: human**
- Proteomic screening of glutamatergic mouse brain synaptosomes isolated by fluorescence activated sorting. Biesemann C, Grønborg M, Luquet E, Wichert SP, Bernard V, Bungers SR, Cooper B, Varoquaux F, Li L, Byrne JA, Urlaub H, et al. *The EMBO journal* (2014) 33(2): 157-70. **WB; tested species: mouse**
- Expression of SV2 isoforms during rodent brain development. Crèvecoeur J, Foerch P, Doupagne M, Thielen C, Vandenplas C, Moonen G, Deprez M, Rogister B *BMC neuroscience* (2013) 14: 87. **IHC**
- Identification of the SV2 protein receptor-binding site of botulinum neurotoxin type E. Mahrhold S, Strotmeier J, Garcia-Rodriguez C, Lou J, Marks JD, Rummel A, Binz T *The Biochemical journal* (2013) 453(1): 37-47. **WB**
- Tetanus toxin and botulinum toxin utilize unique mechanisms to enter neurons of the central nervous system. Blum FC, Chen C, Kroken AR, Barbieri JT *Infection and immunity* (2012) 80(5): 1662-9. **WB**
- Preferential entry of botulinum neurotoxin A Hc domain through intestinal crypt cells and targeting to cholinergic neurons of the mouse intestine. Couesnon A, Molgó J, Connan C, Popoff MR *PLoS pathogens* (2012) 8(3): e1002583. **WB**
- Cortico-hippocampal hyperexcitability in synapsin I/II/III knockout mice: age-dependency and response to the antiepileptic drug levetiracetam. Boido D, Farisello P, Cesca F, Ferrea E, Valtorta F, Benfenati F, Baldelli P *Neuroscience* (2010) 171(1): 268-83. **WB**
- SV2 mediates entry of tetanus neurotoxin into central neurons. Yeh FL, Dong M, Yao J, Tepp WH, Lin G, Johnson EA, Chapman ER *PLoS pathogens* (2010) 6(11): e1001207. **IHC; tested species: mouse**
- Botulinum neurotoxins C, E and F bind gangliosides via a conserved binding site prior to stimulation-dependent uptake with botulinum neurotoxin F utilising the three isoforms of SV2 as second receptor. Rummel A, Häfner K, Mahrhold S, Darashchonak N, Holt M, Jahn R, Beermann S, Karnath T, Bigalke H, Binz T *Journal of neurochemistry* (2009) 110(6): 1942-54. **WB; tested species: mouse**
- Receptor-mediated transcytosis of botulinum neurotoxin A through intestinal cell monolayers. Couesnon A, Pereira Y, Popoff MR *Cellular microbiology* (2008) 10(2): 375-87. **WB**