

SV2 A

Cat.No. 119 002; 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 IHC: 1 : 500 IHC-P/FFPE: 1 : 200
Immunogen	Synthetic peptide corresponding to AA 2 to 17 from human SV2A (UniProt Id: Q7L0J3)
Reactivity	Reacts with: human (Q7L0J3), rat (Q02563), mouse (Q9JIS5), Guinea pig, cow, hamster, chicken, zebrafish. Other species not tested yet.
Specificity	Specific for SV 2A.
matching control	119-0P
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

Decreased expression of synaptic vesicle protein 2A, the binding site for levetiracetam, during epileptogenesis and chronic epilepsy.

van Vliet EA, Aronica E, Redeker S, Boer K, Gorter JA
Epilepsia (2009) 50(3): 422-33. **WB, IHC, IHC-P**

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**

Traffic of botulinum toxins A and E in excitatory and inhibitory neurons.
Verderio C, Grumelli C, Raiteri L, Coco S, Paluzzi S, Caccin P, Rossetto O, Bonanno G, Montecucco C, Matteoli M
Traffic (Copenhagen, Denmark) (2007) 8(2): 142-53. **ICC; tested species: rat**

Pentraxin 3 regulates synaptic function by inducing AMPA receptor clustering via ECM remodeling and β 1-integrin.
Fossati G, Pozzi D, Canzi A, Mirabella F, Valentino S, Morini R, Ghirardini E, Filipello F, Moretti M, Gotti C, Annis DS, et al.
The EMBO journal (2018) : . **WB; tested species: mouse**

The Microglial Innate Immune Receptor TREM2 Is Required for Synapse Elimination and Normal Brain Connectivity.
Filipello F, Morini R, Corradini I, Zerbi V, Canzi A, Michalski B, Erreni M, Markicevic M, Starvaggi-Cucuzza C, Otero K, Piccio L, et al.
Immunity (2018) : . **WB; tested species: mouse**

The effects of proteasomal inhibition on synaptic proteostasis.
Hakim V, Cohen LD, Zuchman R, Ziv T, Ziv NE
The EMBO journal (2016) 35(20): 2238-2262. **ICC**

Synaptic vesicle glycoprotein 2A modulates vesicular release and calcium channel function at peripheral sympathetic synapses.
Vogl C, Tanifuji S, Danis B, Daniels V, Foerch P, Wolff C, Whalley BJ, Mochida S, Stephens GJ
The European journal of neuroscience (2015) 41(4): 398-409. **ICC; KD verified; tested species: rat**

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**

Reduced SNAP-25 increases PSD-95 mobility and impairs spine morphogenesis.
Fossati G, Morini R, Corradini I, Antonucci F, Trepte P, Edry E, Sharma V, Papale A, Pozzi D, Defilippi P, Meier JC, et al.
Cell death and differentiation (2015) 22(9): 1425-36. **ICC**

A soluble biocompatible guanidine-containing polyamidoamine as promoter of primary brain cell adhesion and in vitro cell culturing.
Tonna N, Bianco F, Matteoli M, Cagnoli C, Antonucci F, Manfredi A, Mauro N, Ranucci E, Ferruti P
Science and technology of advanced materials (2014) 15(4): 045007. **ICC**

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**

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**

Reduced SNAP-25 alters short-term plasticity at developing glutamatergic synapses.
Antonucci F, Corradini I, Morini R, Fossati G, Menna E, Pozzi D, Pacioni S, Verderio C, Bacci A, Matteoli M
EMBO reports (2013) 14(7): 645-51. **ICC**

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**

Metabolic turnover of synaptic proteins: kinetics, interdependencies and implications for synaptic maintenance.
Cohen LD, Zuchman R, Sorokina O, Müller A, Dieterich DC, Armstrong JD, Ziv T, Ziv NE
PLoS one (2013) 8(5): e63191. **ICC; tested species: rat**

Preferential entry of botulinum neurotoxin A Hc domain through intestinal crypt cells and targeting to cholinergic neurons of the mouse intestine.
Coesnon A, Molgó J, Connan C, Popoff MR
PLoS pathogens (2012) 8(3): e1002583. **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**