

SV2B (C-3): sc-166004

BACKGROUND

In all vertebrates, SV2 proteins are abundant, hydrophobic, membrane glycoproteins that are expressed as two major isoforms, SV2A and SV2B, and one minor isoform, SV2C. SV2 proteins are differentially expressed in the brain and are present on all synaptic vesicles, independent of transmitter type. SV2A is abundantly expressed in the subcortex, specifically in the synaptic vesicles of all presynaptic nerve terminals, and also in most neuroendocrine secretory granules. SV2B displays a more restricted pattern of expression in that it is only present on a small subset of synapses in the hippocampus and cortex. SV2A and SV2B are functionally redundant and are required for maintaining normal brain function in vertebrates. SV2A and SV2B mediate synaptic transmission by regulating cytoplasmic Ca²⁺ levels in the nerve terminal during repetitive stimulation.

REFERENCES

1. Buckley, K., et al. 1985. Identification of transmembrane glycoprotein specific for secretory vesicles of neural and endocrine cells. *J. Cell Biol.* 100: 1284-1294.
2. Lowe, A.W., et al. 1988. Endocrine secretory granules and neuronal synaptic vesicles have three integral membrane proteins in common. *J. Cell Biol.* 106: 51-59.
3. Bajjaleih, S.M., et al. 1993. Brain contains two forms of synaptic vesicle protein 2. *Proc. Natl. Acad. Sci. USA* 90: 2150-2154.
4. Janz, R., et al. 1999. SV2C is a synaptic vesicle protein with an unusually restricted localization: anatomy of a synaptic vesicle protein family. *Neuroscience* 94: 1279-1290.
5. Janz, R., et al. 1999. SV2A and SV2B function as redundant Ca²⁺ regulators in neurotransmitter release. *Neuron* 24: 1003-1016.

CHROMOSOMAL LOCATION

Genetic locus: SV2B (human) mapping to 15q26.1; Sv2b (mouse) mapping to 7 D2.

SOURCE

SV2B (C-3) is a mouse monoclonal antibody raised against amino acids 1-126 mapping at the N-terminus of SV2B of rat origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SV2B (C-3) is available conjugated to agarose (sc-166004 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166004 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166004 PE), fluorescein (sc-166004 FITC), Alexa Fluor® 488 (sc-166004 AF488), Alexa Fluor® 546 (sc-166004 AF546), Alexa Fluor® 594 (sc-166004 AF594) or Alexa Fluor® 647 (sc-166004 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166004 AF680) or Alexa Fluor® 790 (sc-166004 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

SV2B (C-3) is recommended for detection of SV2B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for SV2B siRNA (h): sc-36577, SV2B siRNA (m): sc-36578, SV2B shRNA Plasmid (h): sc-36577-SH, SV2B shRNA Plasmid (m): sc-36578-SH, SV2B shRNA (h) Lentiviral Particles: sc-36577-V and SV2B shRNA (m) Lentiviral Particles: sc-36578-V.

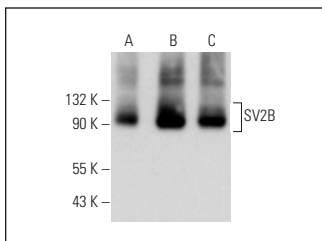
Molecular Weight of SV2B: 75 kDa.

Positive Controls: rat cerebellum extract: sc-2398, mouse cerebellum extract: sc-2403 or rat brain extract: sc-2392.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



SV2B (C-3): sc-166004. Western blot analysis of SV2B expression in rat brain (A), rat cerebellum (B) and mouse cerebellum (C) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.