

SV2B (F-7): sc-166104

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 Ca^{2+} 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 Ca^{2+} regulators in neurotransmitter release. *Neuron* 24: 1003-1016.

CHROMOSOMAL LOCATION

Genetic locus: Sv2b (mouse) mapping to 7 D2.

SOURCE

SV2B (F-7) 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 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SV2B (F-7) is available conjugated to agarose (sc-166104 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166104 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166104 PE), fluorescein (sc-166104 FITC), Alexa Fluor[®] 488 (sc-166104 AF488), Alexa Fluor[®] 546 (sc-166104 AF546), Alexa Fluor[®] 594 (sc-166104 AF594) or Alexa Fluor[®] 647 (sc-166104 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-166104 AF680) or Alexa Fluor[®] 790 (sc-166104 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

SV2B (F-7) is recommended for detection of SV2B of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 (m): sc-36578, SV2B shRNA Plasmid (m): sc-36578-SH and SV2B shRNA (m) Lentiviral Particles: sc-36578-V.

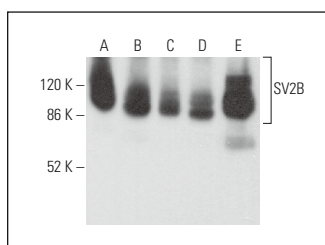
Molecular Weight of SV2B: 75 kDa.

Positive Controls: mouse brain extract: sc-2253, mouse testis extract: sc-2405 or rat cerebellum extract: sc-2398.

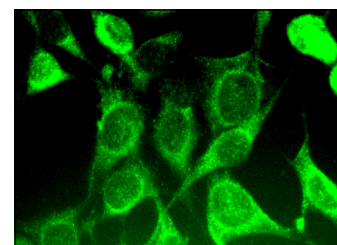
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 (F-7): sc-166104. Western blot analysis of SV2B expression in human cerebellum (A), mouse brain (B), human brain (C), rat cerebellum (D) and mouse testis (E) tissue extracts.



SV2B (F-7): sc-166104. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

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.