SV2B (R-175): sc-28956

SANTA CRUZ®
BIOTECHNOLOGY

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BACKGROUND

In all vertebrates, SV2 proteins are abundant, hydrophobic, membrane glyco-proteins 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 funtionally redundant and are required for maintaining normal brain function in vertebrates. SV2A and SV2B mediate synaptic trans-mission by regulating cytoplasmic Ca^{2+} levels in the nerve terminal during repetitive stimulation.

REFERENCES

1. Buckley, K. and Kelly, R.B. 1985. Identification of transmembrane glyco-protein specific for secretory vesicles fo neural and endocrine cells. J. Cell Biol. 100: 1284-1294.

2. Lowe, A.W., Madeddu, L. and Kelly, R.B. 1988. Endocrine secretory granules and neuronal synaptic vesicles have three integral membrane proteins in common. J. Cell Biol. 106: 51-59.

3. Bajjalieh, S.M., Peterson, K., Linial, M. and Scheller, R.H. 1993. Brain contains two forms of synaptic vesicle protein 2. Proc. Natl. Acad. Sci. USA 90: 2150-2154.

4. Janz, R. and Südhof, T.C. 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., Goda, Y., Geppert, M., Missler, M. and Südhof, T.C. 1999. SV2A and SV2B function as redundant Ca^{2+} regulators in neurotransmitter release. Neuron 24: 1003-1016.

SOURCE

SV2B (R-175) is a rabbit polyclonal antibody raised against amino acids 1-126 mapping at the N-terminus of SV2B of rat origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 or our catalog for detailed protocols and support products.

APPLICATIONS

SV2B (R-175) is recommended for detection of SV2B and, to a lesser extent, SV2A and SV2C of mouse, rat and human origin by Western Blotting (start-ing dilution 1:200, 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 (start-ing dilution 1:30, dilution range 1:30-1:3000).

SV2B (R-175) is also recommended for detection of SV2B and, to a lesser extent, SV2A and SV2C in additional species, including equine, canine, bovine and porcine.

Molecular Weight of SV2B: 75 kDa.

Positive Controls: rat cerebellum extract: sc-2398, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecip-itation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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Try **SV2B (F-7): sc-166104** or **SV2B (C-3): sc-166004**, our highly recommended monoclonal alternatives to SV2B (R-175).