

SV2C (R-300): sc-28957

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. While SV2A and SV2B are expressed ubiquitously throughout the brain, SV2C displays a more restricted pattern of expression. SV2C is only present on a small subset of synapses in phylogenetically old brain areas, indicating that SV2C could be evolutionary more ancient than SV2A or SV2B. Specifically, SV2C is expressed in the central neuraxis, which includes the striatum, midbrain, hindbrain and the olfactory bulb. SV2C, whose molecular mass ranges due to N-glycosylation, contains cytoplasmic N-terminal and C-terminal domains. The restricted pattern of SV2C expression suggests that it may be used as a specific synaptic marker in the study of degenerative diseases, such as Parkinson's disease.

REFERENCES

1. Buckley, K., et al. 1985. Identification of transmembrane glycoprotein specific for secretory vesicles fo 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.

SOURCE

SV2C (R-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of SV2C 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

SV2C (R-300) is recommended for detection of SV2C and, to a lesser extent, SV2A and SV2B of mouse, rat and human origin by Western Blotting (starting 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 (starting dilution 1:30, dilution range 1:30-1:3000).

SV2C (R-300) is also recommended for detection of SV2C and, to a lesser extent, SV2A and SV2B in additional species, including equine, canine, bovine and avian.

Molecular Weight of SV2C: 82 kDa.

Positive Controls: Rat brain extract: sc-2392, mouse brain extract: sc-2253 or SK-N-SH cell lysate: sc-2410.

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) Immunoprecipitation: 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.

SELECT PRODUCT CITATIONS

1. Gelman, B.B. and Nguyen, T.P. 2010. Synaptic proteins linked to HIV-1 infection and immunoproteasome induction: proteomic analysis of human synaptosomes. *J. Neuroimmune Pharmacol.* 5: 92-102.