

SEMA4B (V-15): sc-160793

BACKGROUND

Semaphorins are a family of cell surface and secreted proteins that are conserved from insects to humans. Members of this family of proteins are approximately 750 amino acids in length (including signal sequences) and are defined by a conserved extracellular "semaphorin" domain of approximately 500 amino acids containing 14-16 cysteines, blocks of conserved sequences and no obvious repeats. The transmembrane semaphorins are characterized by an additional 80 amino acid transmembrane domain and an 80-110 amino acid cytoplasmic domain. Secreted and cell-bound semaphorins chemically attract and repel the growth of neural axons, guiding the development of intricate networks of neural tissue. SEMA4B (semaphorin-4B), also known as SemC or SEMAC, is an 832 amino acid single-pass type I membrane protein that belongs to the semaphorin family and exists as two alternatively spliced isoforms. Containing one Ig-like C2-type (immunoglobulin-like) domain, a PSI domain and a single sema domain, SEMA4B is encoded by a gene located on human chromosome 15.

REFERENCES

- Kolodkin, A.L., et al. 1993. The semaphorin genes encode a family of transmembrane and secreted growth cone guidance molecules. *Cell* 75: 1389-1399.
- Dodd, J. and Schuchardt, A. 1995. Axon guidance: a compelling case for repelling growth cones. *Cell* 81: 471-474.
- Matthes, D.J., et al. 1995. Semaphorin II can function as a selective inhibitor of specific synaptic arborizations. *Cell* 81: 631-639.
- Inagaki, S., et al. 1995. Identification of a member of mouse semaphorin family. *FEBS Lett.* 370: 269-272.
- Püschel, A.W., et al. 1995. Murine semaphorin D/collapsin is a member of a diverse gene family and creates domains inhibitory for axonal extension. *Neuron* 14: 941-948.
- Burkhardt, C., et al. 2005. Semaphorin 4B interacts with the post-synaptic density protein PSD-95/SAP90 and is recruited to synapses through a C-terminal PDZ-binding motif. *FEBS Lett.* 579: 3821-3828.
- Nagai, H., et al. 2007. CLCP1 interacts with semaphorin 4B and regulates motility of lung cancer cells. *Oncogene* 26: 4025-4031.
- Pasterkamp, R.J. and Giger, R.J. 2009. Semaphorin function in neural plasticity and disease. *Curr. Opin. Neurobiol.* 19: 263-274.

CHROMOSOMAL LOCATION

Genetic locus: SEMA4B (human) mapping to 15q26.1; Sema4b (mouse) mapping to 7 D3.

SOURCE

SEMA4B (V-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of SEMA4B of human origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-160793 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SEMA4B (V-15) is recommended for detection of SEMA4B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other SEMA4 family members.

SEMA4B (V-15) is also recommended for detection of SEMA4B in additional species, including equine and canine.

Suitable for use as control antibody for SEMA4B siRNA (h): sc-90197, SEMA4B siRNA (m): sc-153333, SEMA4B shRNA Plasmid (h): sc-90197-SH, SEMA4B shRNA Plasmid (m): sc-153333-SH, SEMA4B shRNA (h) Lentiviral Particles: sc-90197-V and SEMA4B shRNA (m) Lentiviral Particles: sc-153333-V.

Molecular Weight of SEMA4B: 92 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

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