SANTA CRUZ BIOTECHNOLOGY, INC.

SEMA4G (C-12): sc-515644

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Secreted and cell-bound semaphorins chemically attract and repel the growth of neural axons, guiding the development of intricate networks of neural tissue. SEMA4G (semaphorin-4G) is an 838 amino acid single-pass type I membrane protein that is thought to play a role in axon guidance. Existing as three alternatively spliced isoforms, SEMA4G contains one Ig-like C2-type (immunoglobulin-like) domain, a PSI domain and a single SEMA domain.

REFERENCES

1. Li, H., et al. 1999. Characterization and expression of sema4g, a novel member of the semaphorin gene family. Mech. Dev. 87: 169-173.
2. Holtmaat, A.J., et al. 2002. Semaphorins: contributors to structural stability of hippocampal networks? Prog. Brain Res. 138: 17-38.
3. Dickson, B.J. 2002. Molecular mechanisms of axon guidance. Science 298: 1959-1964.
4. Pasterkamp, R.J., et al. 2003. Semaphorin junction: making tracks toward neural connectivity. Curr. Opin. Neurobiol. 13: 79-89.
5. 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.
6. Shifman, M.I. and Selzer, M.E. 2006. Semaphorins and their receptors in lamprey CNS: Cloning, phylogenetic analysis, and developmental changes during metamorphosis. J. Comp. Neurol. 497: 115-132.

CHROMOSOMAL LOCATION

Genetic locus: SEMA4G (human) mapping to 10q24.31; Sema4g (mouse) mapping to 19 C3.

SOURCE

SEMA4G (C-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 26-47 within an N-terminal extracellular domain of SEMA4G of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-515644 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

SEMA4G (C-12) is recommended for detection of SEMA4G 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 SEMA4G siRNA (h): sc-62998, SEMA4G siRNA (m): sc-62999, SEMA4G shRNA Plasmid (h): sc-62998-SH, SEMA4G shRNA Plasmid (m): sc-62999-SH, SEMA4G shRNA (h) Lentiviral Particles: sc-62998-V and SEMA4G shRNA (m) Lentiviral Particles: sc-62999-V.

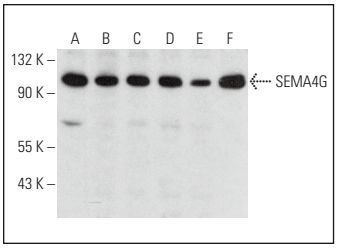
Molecular Weight of SEMA4G: 92 kDa.

Positive Controls: WiDr cell lysate: sc-24779, HeLa whole cell lysate: sc-2200 or SW480 cell lysate: sc-2219.

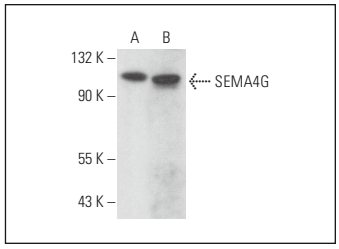
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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



SEMA4G (C-12): sc-515644. Western blot analysis of SEMA4G expression in 293T (**A**), SW480 (**B**), HeLa (**C**), WiDr (**D**) and COLO 320DM (**E**) whole cell lysates and human rectum tissue extract (**F**).



SEMA4G (C-12): sc-515644. Western blot analysis of SEMA4G expression in SW480 whole cell lysate (**A**) and mouse postnatal brain tissue extract (**B**).

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.