

SEMA6B (G-7): sc-390928

BACKGROUND

Semaphorins are a family of cell surface and secreted proteins involved in neural development that are conserved from insects to humans. Members of this family 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. SEMA6B, also known as SEMA Z, is a single pass type-I transmembrane protein highly expressed in adult brain and heart. It contains a proline-rich cytoplasmic domain with SH3 domain binding sites. SEMA6B functions as a repellent for sympathetic ganglion axons and suppresses neurite outgrowth. This activity is propagated through its receptor, plexin-A4. In addition, SEMA6B may play a role in tumor progression.

REFERENCES

1. Kikuchi, K., et al. 1997. Molecular cloning of a novel member of semaphorin family genes, semaphorin Z. *Brain Res. Mol. Brain Res.* 51: 229-237.
2. Eckhardt, F., et al. 1997. A novel transmembrane semaphorin can bind c-Src. *Mol. Cell. Neurosci.* 9: 409-419.
3. Correa, R.G., et al. 2001. Human semaphorin 6B [(HSA)SEMA6B], a novel human class 6 semaphorin gene: alternative splicing and all-*trans*-retinoic acid-dependent downregulation in glioblastoma cell lines. *Genomics* 73: 343-348.

CHROMOSOMAL LOCATION

Genetic locus: SEMA6B (human) mapping to 19p13.3; Sema6b (mouse) mapping to 17 D.

SOURCE

SEMA6B (G-7) is a mouse monoclonal antibody raised against amino acids 48-118 mapping near the N-terminus of SEMA6B of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SEMA6B (G-7) is available conjugated to agarose (sc-390928 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390928 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390928 PE), fluorescein (sc-390928 FITC), Alexa Fluor® 488 (sc-390928 AF488), Alexa Fluor® 546 (sc-390928 AF546), Alexa Fluor® 594 (sc-390928 AF594) or Alexa Fluor® 647 (sc-390928 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390928 AF680) or Alexa Fluor® 790 (sc-390928 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

SEMA6B (G-7) is recommended for detection of SEMA6B 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), immunohistochemistry (including paraffin-embedded sections) (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 SEMA6B siRNA (h): sc-63006, SEMA6B siRNA (m): sc-63007, SEMA6B shRNA Plasmid (h): sc-63006-SH, SEMA6B shRNA Plasmid (m): sc-63007-SH, SEMA6B shRNA (h) Lentiviral Particles: sc-63006-V and SEMA6B shRNA (m) Lentiviral Particles: sc-63007-V.

Molecular Weight of SEMA6B: 110 kDa.

Molecular Weight of SEMA6Ba isoform: 73 kDa.

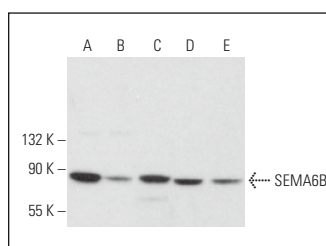
Positive Controls: MCF7 whole cell lysate: sc-2206, H4 cell lysate: sc-2408 or EOC 20 whole cell lysate: sc-364187.

RECOMMENDED SUPPORT REAGENTS

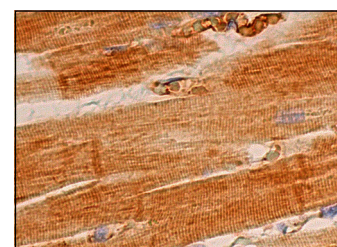
To ensure optimal results, the following support reagents are recommended:

- 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 A/G PLUS-Agarose: sc-2003 (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.
- 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



SEMA6B (G-7): sc-390928. Western blot analysis of SEMA6B expression in MCF7 (A), MDA-MB-231 (B), H4 (C), Neuro-2A (D) and EOC 20 (E) whole cell lysates.



SEMA6B (G-7): sc-390928. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing membrane and cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

1. Poltavski, D.M., et al. 2019. Venous endothelin modulates responsiveness of cardiac sympathetic axons to arterial semaphorin. *Elife* 8: e42528.

RESEARCH USE

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