SANTA CRUZ BIOTECHNOLOGY, INC.

SEMA7A (E-18): sc-67969

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Semaphorins comprise 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, many 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. These semaphorin proteins regulate the growth of the axons during embryogenesis by repelling growth cones from regions of high semaphorin expression. Also designated CD108, semaphorin 7A (SEMA7A) promotes axonal growth in the central nervous system and plays a critical role in negative regulation of T cell activation and function.

REFERENCES

1. Mudad, R., Rao, N., Angelisova, P., Horejsi, V. and Telen, M.J. 1995. Evidence that CDw108 membrane protein bears the JMH blood group antigen. Transfusion 35: 566-570.
2. Angelisová, P., Drbal, K., Cerný, J., Hilgert, I. and Horejsí, V. 1999. Characterization of the human leukocyte GPI-anchored glycoprotein CDw108 and its relation to other similar molecules. Immunobiology 200: 234-245.
3. Mine, T., Harada, K., Matsumoto, T., Yamana, H., Shirouzu, K., Itoh, K. and Yamada, A. 2000. CDw108 expression during T-cell development. Tissue Antigens 55: 429-436.
4. Holmes, S., Downs, A.M., Fosberry, A., Hayes, P.D., Michalovich, D., Murdoch, P., Moores, K., Fox, J., Deen, K., Pettman, G., Wattam, T. and Lewis, C. 2002. SEMA7A is a potent monocyte stimulator. Scand. J. Immunol. 56: 270-275.
5. Elhabazi, A., Marie-Cardine, A., Chabbert-de Ponnat, I., Bensussan, A. and Boumsell, L. 2003. Structure and function of the immune semaphorin CD100/SEMA4D. Crit. Rev. Immunol. 23: 65-81.
6. Pasterkamp, R.J., Peschon, J.J., Spriggs, M.K. and Kolodkin, A.L. 2003. Semaphorin 7A promotes axon outgrowth through integrins and MAPKs. Nature 424: 398-405.
7. Lallier, TE. 2004. Semaphorin profiling of periodontal fibroblasts and osteoblasts. J. Dent. Res. 83: 677-682.

CHROMOSOMAL LOCATION

Genetic locus: SEMA7A (human) mapping to 15q24.1; Sema7a (mouse) mapping to 9 B.

SOURCE

SEMA7A (E-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SEMA7A 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-67969 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SEMA7A (E-18) is recommended for detection of SEM7A 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).

SEMA7A (E-18) is also recommended for detection of SEMA7A in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SEMA7A siRNA (h): sc-63010, SEMA7A siRNA (m): sc-63011, SEMA7A shRNA Plasmid (h): sc-63010-SH, SEMA7A shRNA Plasmid (m): sc-63011-SH, SEMA7A shRNA (h) Lentiviral Particles: sc-63010-V and SEMA7A shRNA (m) Lentiviral Particles: sc-63011-V.

Molecular Weight of SEMA7A: 80 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.

SELECT PRODUCT CITATIONS

1. Messina, A., Ferraris, N., Wray, S., Cagnoni, G., Donohue, D.E., Casoni, F., Kramer, P.R., Derijck, A.A., Adolfs, Y., Fasolo, A., Pasterkamp, R.J. and Giacobini, P. 2011. Dysregulation of Semaphorin7A/β1-integrin signaling leads to defective GnRH-1 cell migration, abnormal gonadal development and altered fertility. Hum. Mol. Genet. 20: 4759-4774.

STORAGE

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