SANTA CRUZ BIOTECHNOLOGY, INC.

SEMA3E (C-14): sc-49733

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Secreted and cell-bound semaphorins chemically attract and repel the growth of neural axons, guiding the development of intricate networks of neural tissue. SEMA3E is a secreted semaphorin with 775 amino acids. Mutations in the SEMA3E gene are associated with CHARGE syndrome, a disorder characterized by cranial nerve dysfunction, coloboma of the eye, choanal atresia, inner and external ear abnormalities, cardiac anomalies, genitourinary abnormalities and growth retardation.

REFERENCES

1. Steinbach, K., Volkmer, H. and Schlosshauer, B. 2002. Semaphorin 3E/collapsin-5 inhibits growing retinal axons. Exp. Cell Res. 279: 52-61.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608166. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Lalani, S.R., Safiullah, A.M., Molinari, L.M., Fernbach, S.D., Martin, D.M. and Belmont, J.W. 2004. SEMA3E mutation in a patient with CHARGE syndrome. J. Med. Genet. 41: 94.
4. Sahay, A., Kim, C.H., Sepkuty, J.P., Cho, E., Huganir, R.L., Ginty, D.D. and Kolodkin, A.L. 2005. Secreted semaphorins modulate synaptic transmission in the adult hippocampus. J. Neurosci. 25: 3613-3620.
5. Christensen, C., Ambartsumian, N., Gilestro, G., Thomsen, B.,Comoglio, P., Tamagnone, L., Guldberg. P. and Lukanidin, E. 2005. Proteolytic processing converts the repelling signal SEMA3E into an inducer of invasive growth and lung metastasis. Cancer Res. 65: 6167-6177.

CHROMOSOMAL LOCATION

Genetic locus: SEMA3E (human) mapping to 7q21.11; Sema3e (mouse) mapping to 5 A1.

SOURCE

SEMA3E (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of SEMA3E of human origin.

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-49733 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SEMA3E (C-14) is recommended for detection of SEMA3E 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).

SEMA3E (C-14) is also recommended for detection of SEMA3E in additional species, including equine.

Suitable for use as control antibody for SEMA3E siRNA (h): sc-61520, SEMA3E siRNA (m): sc-61521, SEMA3E shRNA Plasmid (h): sc-61520-SH, SEMA3E shRNA Plasmid (m): sc-61521-SH, SEMA3E shRNA (h) Lentiviral Particles: sc-61520-V and SEMA3E shRNA (m) Lentiviral Particles: sc-61521-V.

Molecular Weight of SEMA3E: 95 kDa.

Positive Controls: MDA-MB-231 cell lysate: sc-2232, MCF7 whole cell lysate: sc-2206 or BT-20 cell lysate: sc-2223.

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. Moriya, J., Minamino, T., Tateno, K., Okada, S., Uemura, A., Shimizu, I., Yokoyama, M., Nojima, A., Okada, M., Koga, H. and Komuro, I. 2010. Inhibition of semaphorin as a novel strategy for therapeutic angiogenesis. Circ. Res. 106: 391-398.

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.