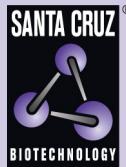


# SEMA3E (H-215): sc-99142



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

- Steinbach, K., et al. 2002. Semaphorin 3E/collapsin-5 inhibits growing retinal axons. *Exp. Cell Res.* 279: 52-61.
- 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/>
- Lalani, S.R., et al. 2004. SEMA3E mutation in a patient with CHARGE syndrome. *J. Med. Genet.* 41: e94.
- Sahay, A., et al. 2005. Secreted semaphorins modulate synaptic transmission in the adult hippocampus. *J. Neurosci.* 25: 3613-3620.
- Christensen, C. et al. 2005. Proteolytic processing converts the repelling signal SEMA3E into an inducer of invasive growth and lung metastasis. *Cancer Res.* 65: 6167-6177.
- Gu, C. et al. 2005. Semaphorin 3E and plexin-D1 control vascular pattern independently of neuropilins. *Science* 307: 265-268.
- Potiron, V. et al. 2005. Class 3 semaphorin signaling: the end of a dogma. *Sci. STKE* 2005: pe24.
- Wang, Z. et al. 2005. KDR and SEMA3 genes expression in bone marrow stromal cells and hematopoietic cells from leukemia patients and normal individuals. *Hematology* 10: 307-312.
- Shifman, M. et al. 2007. Differential expression of class 3 and 4 semaphorins and netrin in the lamprey spinal cord during regeneration. *J. Comp. Neurol.* 501: 631-646.

## CHROMOSOMAL LOCATION

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

## SOURCE

SEMA3E (H-215) is a rabbit polyclonal antibody raised against amino acids 561-775 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.

## APPLICATIONS

SEMA3E (H-215) 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), 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).

SEMA3E (H-215) is also recommended for detection of SEMA3E in additional species, including equine and porcine.

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 goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.