

SEMA (H-300): sc-10720

BACKGROUND

Semaphorins (SEMA) 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. Secreted and cell-bound semaphorins are known to chemically attract and repel the growth of neural axons, guiding the development of intricate networks of neural tissue. In addition to their role in axonal guidance, semaphorins have also been associated with the progression of cancer. Many semaphorins bind to the receptors neuropilin and neuropilin-2, thus competing with VEGF for this interaction which ultimately results in the suppression of angiogenesis. The loss of functional semaphorins to compete with VEGF may play an important role in tumor progression.

CHROMOSOMAL LOCATION

Genetic locus: SEMA3A (human) mapping to 7q21.11; Sema3a (mouse) mapping to 5 A1.

SOURCE

SEMA (H-300) is a rabbit polyclonal antibody raised against amino acids 103-402 of SEMA3A 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

SEMA (H-300) is recommended for detection of Semaphorin family members 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).

SEMA (H-300) is also recommended for detection of SEMA in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of SEMA family members: 80-140 kDa.

Positive Controls: rat brain extract: sc-2392.

STORAGE

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

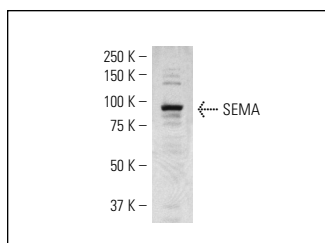
PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

RESEARCH USE

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

DATA



SEMA (H-300): sc-10720. Western blot analysis of SEMA expression in rat brain tissue extract.

SELECT PRODUCT CITATIONS

- Good, P.F., et al. 2004. A role for semaphorin 3A signaling in the degeneration of hippocampal neurons during Alzheimer's disease. *J. Neurochem.* 91: 716-736.
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- Morita, A., et al. 2006. Regulation of dendritic branching and spine maturation by semaphorin 3A-Fyn signaling. *J. Neurosci.* 26: 2971-2980.
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- Lepelletier, Y., et al. 2006. Immunosuppressive role of semaphorin 3A on T cell proliferation is mediated by inhibition of Actin cytoskeleton reorganization. *Eur. J. Immunol.* 36: 1782-1793.
- Narazaki, M., et al. 2006. Ligand-induced internalization selects use of common receptor neuropilin-1 by VEGF165 and semaphorin3A. *Blood* 107: 3892-3901.
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Try **SEMA (A-12): sc-74554** or **SEMA (C-1): sc-74555**, our highly recommended monoclonal alternatives to SEMA (H-300).