

SEMA3A (N-15): sc-1148

BACKGROUND

Semaphorins are 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, blocks of conserved sequences and no obvious repeats. Secreted and cell-bound semaphorins chemically attract and repel the growth of neural axons, guiding the development of intricate networks of neural tissue. SEMA3A (semaphorin-3A), also known as SEMA1, SEMAD, SEMAL, coll-1, Hsema-I, SEMAIII or Hsema-III, is a 771 amino acid secreted protein that belongs to the semaphorin family and can function as both a chemoattractive agent or a chemorepulsive agent. SEMA3A binds neuropilin and is able to induce the collapse and paralysis of neuronal growth cones. SEMA3A contains one immunoglobulin-like (Ig-like) domain, one PSI domain and one semaphorin domain.

CHROMOSOMAL LOCATION

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

SOURCE

SEMA3A (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of SEMA3A of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1148 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SEMA3A (N-15) is recommended for detection of SEMA3A of mouse, rat, human, chicken 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).

SEMA3A (N-15) is also recommended for detection of SEMA3A in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SEMA3A siRNA (h): sc-36470, SEMA3A siRNA (m): sc-36471, SEMA3A shRNA Plasmid (h): sc-36470-SH, SEMA3A shRNA Plasmid (m): sc-36471-SH, SEMA3A shRNA (h) Lentiviral Particles: sc-36470-V and SEMA3A shRNA (m) Lentiviral Particles: sc-36471-V.

Molecular Weight of proSEMA3A: 125 kDa.

Molecular Weight of activated SEMA3A: 95 kDa.

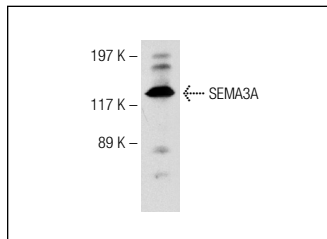
Molecular Weight of SEMA3A proteolytic fragments: 65/45 kDa.

Positive Controls: rat brain extract: sc-2392.

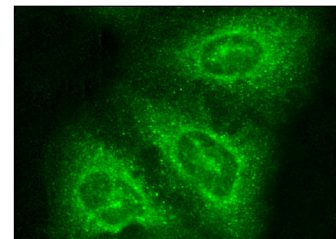
STORAGE

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

DATA



SEMA3A (N-15): sc-1148. Western blot detection of the non-secreted SEMA3 precursor in rat brain extract.



SEMA3A (N-15): sc-1148. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Giordano, A., et al. 2001. SEMA3A is produced by brown adipocytes and its secretion is reduced following cold acclimation. *J. Neurocytol.* 30: 5-10.
- Marzioni, D., et al. 2004. Restricted innervation of uterus and placenta during pregnancy: evidence for a role of the repelling signal Semaphorin 3A. *Dev. Dyn.* 231: 839-848.
- Gomez, C., et al. 2005. Expression of Semaphorin-3A and its receptors in endochondral ossification: potential role in skeletal development and innervation. *Dev. Dyn.* 234: 393-403.
- de Wit, J., et al. 2006. Vesicular trafficking of Semaphorin 3A is activity-dependent and differs between axons and dendrites. *Traffic* 7: 1066-1077.
- Gomez, C., et al. 2007. Absence of mechanical loading in utero influences bone mass and architecture but not innervation in MyoD-Myf-5-deficient mice. *J. Anat.* 210: 259-271.
- Tannemaat, M.R., et al. 2007. Human neuroma contains increased levels of semaphorin 3A, which surrounds nerve fibers and reduces neurite extension *in vitro*. *J. Neurosci.* 27: 14260-14264.
- Long, J.B., et al. 2009. VEGF-A and semaphorin 3A: modulators of vascular sympathetic innervation. *Dev. Biol.* 334: 119-132.
- Staton, C.A., et al. 2011. Expression of class 3 semaphorins and their receptors in human breast neoplasia. *Histopathology* 59: 274-282.

RESEARCH USE

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


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