

SEMA3A (C-17): sc-1146

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, SEMA3B (human) mapping to 3p21.31; Sema3a (mouse) mapping to 5 A1, Sema3b (mouse) mapping to 9 F1.

SOURCE

SEMA3A (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-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-1146 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SEMA3A (C-17) is recommended for detection of SEMA3A and SEMA3B 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), immunohistochemistry (including paraffin-embedded sections) (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 (C-17) is also recommended for detection of SEMA3A and SEMA3B in additional species, including equine, canine, bovine and avian.

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.

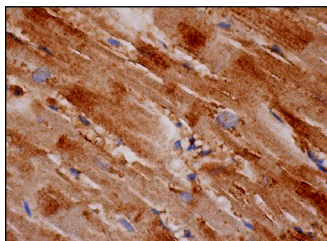
STORAGE

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

RESEARCH USE

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

DATA



SEMA3A (C-17): sc-1146. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

- Deroanne, C., et al. 2002. Histone deacetylases inhibitors as anti-angiogenic agents altering vascular endothelial growth factor signaling. *Oncogene* 21: 427-436.
- Serini, G., et al. 2003. Class 3 semaphorins control vascular morphogenesis by inhibiting integrin function. *Nature* 424: 391-397.
- Wey, J.S., et al. 2005. Overexpression of neuropilin-1 promotes constitutive MAPK signalling and chemoresistance in pancreatic cancer cells. *Br. J. Cancer* 93: 233-241.
- 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.
- Gannon, P.O., et al. 2010. Androgen-regulated expression of arginase 1, arginase 2 and interleukin-8 in human prostate cancer. *PLoS ONE* 5: e12107.

PROTOCOLS

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