SANTA CRUZ BIOTECHNOLOGY, INC.

# SEMA6A (B-18): sc-74273

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. SEMA6A, also known as SEMA VIA, is a single pass type-I transmembrane protein that exists as a homodimer or oligomer when active. It is expressed in undifferentiated embryonic stem cells, endodermal progenitors and adult brain. SEMA6A functions as a repellent for sympathetic ganglion axons and propagates this activity through its receptors, plexin-A2 and plexin-A4. SEMA6A may also inhibit growth factor- and tumor-induced angiogenesis.

## REFERENCES


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2. Kikuchi, K., et al. 1999. Cloning and characterization of a novel class VI semaphorin, semaphorin Y. Mol. Cell. Neurosci. 13: 9-23.
3. Klostermann, A., et al. 2001. The orthologous human and murine semaphorin 6A-1 proteins (SEMA6A-1/Sema6A-1) bind to the enabled/vasodilator-stimulated phosphoprotein-like protein (EVL) via a novel carboxyl-terminal zyxin-like domain. J. Biol. Chem. 275: 39647-39653.
4. Kerjan, G., et al. 2005. The transmembrane semaphorin SEMA6A controls cerebellar granule cell migration. Nat. Neurosci. 8: 1516-1524.
5. Dhanabal, M., et al. 2005. Recombinant semaphorin 6A-1 ectodomain inhibits *in vivo* growth factor and tumor cell line-induced angiogenesis. Cancer Biol. Ther. 4: 659-668.
6. Suto, F., et al. 2005. Plexin-A4 mediates Axon-repulsive activities of both secreted and transmembrane semaphorins and plays roles in nerve fiber guidance. J. Neurosci. 25: 3628-3637.
7. Gautier, G., et al. 2006. The class 6 semaphorin SEMA6A is induced by interferon-γ and defines an activation status of Langerhans cells observed in pathological situations. Am. J. Pathol. 168: 453-465.
8. Suto, F., et al. 2007. Interactions between plexin-A2, plexin-A4, and semaphorin 6A control lamina-restricted projection of hippocampal mossy fibers. Neuron 53: 535-547.


## CHROMOSOMAL LOCATION

Genetic locus: Sema6a (mouse) mapping to 18 C.

## SOURCE

SEMA6A (B-18) is a rat monoclonal antibody raised against an extracellular domain of SEMA6A of mouse origin.

## PRODUCT

Each vial contains 100 µg $IgG_{2a}$ in 1.0 ml PBS with < 0.1% sodium azide and protein stabilizer.

## APPLICATIONS

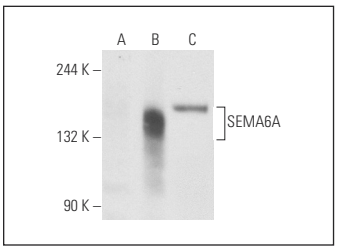
SEMA6A (B-18) is recommended for detection of SEMA6A of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); may cross-react with SEMA6A of human origin; non cross-reactive with SEMA3A or SEMA3B.

Suitable for use as control antibody for SEMA6A siRNA (m): sc-63005, SEMA6A shRNA Plasmid (m): sc-63005-SH and SEMA6A shRNA (m) Lentiviral Particles: sc-63005-V.

Molecular Weight (predicted) of SEMA6A: 114 kDa.

Molecular Weight (observed) of SEMA6A: 160-173 kDa.

## DATA




SEMA6A (B-18): sc-74273. Western blot analysis of SEMA6A expression in non-transfected 293T: sc-117752 (**A**), human SEMA6A transfected 293T: sc-112177 (**B**) and HeLa (**C**) whole cell lysates.

## 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 for detailed protocols and support products.