

SEMA6A (h): 293T Lysate: sc-112177

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

1. Zhou, L., et al. 1997. Cloning and expression of a novel murine semaphorin with structural similarity to insect semaphorin I. *Mol. Cell. Neurosci.* 9: 26-41.
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.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: SEMA6A (human) mapping to 5q23.1.

PRODUCT

SEMA6A (h): 293T Lysate represents a lysate of human SEMA6A transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

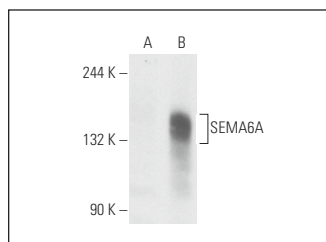
APPLICATIONS

SEMA6A (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive SEMA6A antibodies. Recommended use: 10-20 μ l per lane.

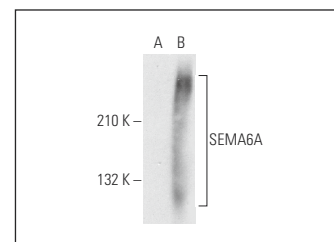
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

SEMA6A (B-18): sc-74273 is recommended as a positive control antibody for Western Blot analysis of enhanced human SEMA6A expression in SEMA6A transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



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



SEMA6A (B-3): sc-398302. Western blot analysis of SEMA6A expression in non-transfected: sc-117752 (A) and human SEMA6A transfected: sc-112177 (B) 293T whole cell lysates.

RESEARCH USE

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