SANTA CRUZ BIOTECHNOLOGY, INC.

SEMA6A (B-3): sc-398302

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

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. 2000. 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.

CHROMOSOMAL LOCATION

Genetic locus: SEMA6A (human) mapping to 5q23.1; Sema6a (mouse) mapping to 18 C.

SOURCE

SEMA6A (B-3) is a mouse monoclonal antibody raised against amino acids 571-750 mapping within an internal region of SEMA6A of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SEMA6A (B-3) is available conjugated to agarose (sc-398302 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398302 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398302 PE), fluorescein (sc-398302 FITC), Alexa Fluor® 488 (sc-398302 AF488), Alexa Fluor® 546 (sc-398302 AF546), Alexa Fluor® 594 (sc-398302 AF594) or Alexa Fluor® 647 (sc-398302 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398302 AF680) or Alexa Fluor® 790 (sc-398302 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

SEMA6A (B-3) is recommended for detection of SEMA6A of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

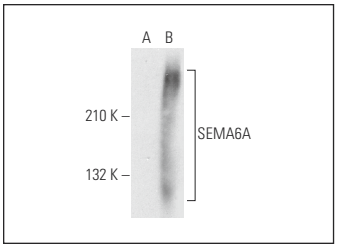
Suitable for use as control antibody for SEMA6A siRNA (h): sc-63004, SEMA6A siRNA (m): sc-63005, SEMA6A shRNA Plasmid (h): sc-63004-SH, SEMA6A shRNA Plasmid (m): sc-63005-SH, SEMA6A shRNA (h) Lentiviral Particles: sc-63004-V and SEMA6A shRNA (m) Lentiviral Particles: sc-63005-V.

Molecular Weight (predicted) of SEMA6A: 114 kDa.

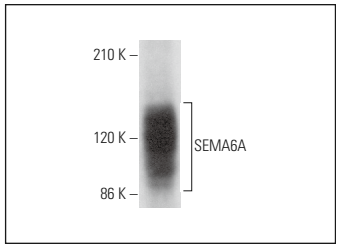
Molecular Weight (observed) of SEMA6A: 160-173 kDa.

Positive Controls: SEMA6A (h): 293T Lysate: sc-112177 or C6 whole cell lysate: sc-364373.

DATA



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.



SEMA6A (B-3): sc-398302. Western blot analysis of SEMA6A expression in C6 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Oikawa, S., et al. 2018. Role of endothelial microRNA-23 clusters in angiogenesis *in vivo*. Am. J. Physiol. Heart Circ. Physiol. 315: H838-H846.
2. Ji, J., et al. 2023. VHL-HIF-2α axis-induced SEMA6A upregulation stabilized β-catenin to drive clear cell renal cell carcinoma progression. Cell Death Dis. 14: 83.

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 for detailed protocols and support products.