

# SEMA5A (C-20): sc-67953

## 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. SEMA5A (semaphorin-5A), also known as semF or SEMAF (Semaphorin-F), is 1,074 amino acid single-pass type I membrane protein that belongs to the semaphorin family and is involved in axonal guidance cue in mammalian midbrain neurons. Sema5A promotes multiple functional responses through a plexin-B3 receptor.

## REFERENCES

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- Goldberg, J.L., et al. 2004. An oligodendrocyte lineage-specific semaphorin, SEMA5A, inhibits axon growth by retinal ganglion cells. *J. Neurosci.* 24: 4989-4999.
- Kantor, D.B., et al. 2004. Semaphorin 5A is a bifunctional axon guidance cue regulated by heparan and chondroitin sulfate proteoglycans. *Neuron* 44: 961-975.
- Maraganore, D.M., et al. 2005. High-resolution whole-genome association study of Parkinson disease. *Am. J. Hum. Genet.* 77: 685-693.
- Fiore, R., et al. 2005. Inactivation of the SEMA5A gene results in embryonic lethality and defective remodeling of the cranial vascular system. *Mol. Cell Biol.* 25: 2310-2319.
- Jin, Z., et al. 2006. SEMA3D, SEMA3F, and SEMA5A are expressed in overlapping and distinct patterns in chick embryonic heart. *Dev. Dyn.* 235: 163-169.
- Melin, M., et al. 2006. Constitutional downregulation of SEMA5A expression in autism. *Neuropsychobiology* 54: 64-69.

## CHROMOSOMAL LOCATION

Genetic locus: SEMA5A (human) mapping to 5p15.31; Sema5a (mouse) mapping to 15 B3.1.

## SOURCE

SEMA5A (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal extracellular domain of SEMA5A of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-67953 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

SEMA5A (C-20) is recommended for detection of SEMA5A 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).

SEMA5A (C-20) is also recommended for detection of SEMA5A in additional species, including equine, canine, bovine, porcine and avian.

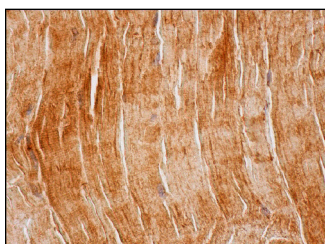
Suitable for use as control antibody for SEMA5A siRNA (h): sc-63000, SEMA5A siRNA (m): sc-63001, SEMA5A shRNA Plasmid (h): sc-63000-SH, SEMA5A shRNA Plasmid (m): sc-63001-SH, SEMA5A shRNA (h) Lentiviral Particles: sc-63000-V and SEMA5A shRNA (m) Lentiviral Particles: sc-63001-V.

Molecular Weight of SEMA5A: 130 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



SEMA5A (C-20): sc-67953. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes.

## 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.