plexin-D1 (S-20): sc-46247

SANTA CRUZ® BIOTECHNOLOGY

The Power to Question

BACKGROUND

Plexins are a family of large transmembrane receptors for multiple classes of semaphorins. Plexins are widely expressed and may act as semaphorin receptors alone or in combination with neuropilins. Plexins are divided into four subfamilies, plexin-A, -B, -C and -D. Plexin-D1 is expressed strongly in endothelial cells of developing blood vessels and in lower levels in placenta, heart, brain, kidney, testis and lung. Expression is more robust in mouse and human embryonic cells than in adult cells, and the protein is detected in early ganglia, cortex and striatum. The gene PLXND1, which encodes for the protein, localizes to chromosome 3q21.3. A defect in this gene causes the dominantly inherited disorder Möbius syndrome 2 (MBS2) which is characterized by paralysis of the facial nerve.

REFERENCES

1. Tamagnone, L., et al.1999. Plexins are a large family of receptors for transmembrane, secreted and GPI-anchored semaphorins in vertebrates. Cell 99: 71-80.

2. Deutsch, U. 2004. Semaphorins guide PerPlexeD endothelial cells. Dev. Cell 7: 1-2.

3. Gitler, A.D., et al. 2004. Plexin-D1 and semaphorin signaling are required in endothelial cells for cardiovascular development. Dev. Cell 7: 107-116.

4. Torres-Vazquez, J., et al. 2004. Semaphorin-plexin signaling guides patterning of the developing vasculature. Dev. Cell 7: 117-123.

5. van der Zwaag, B., et al. 2004. Sequence analysis of the PLEXIN-D1 gene in Möbius syndrome patients. Pediatr. Neurol. 31: 114-118.

6. Li, S., et al. 2004. Advanced cardiac morphogenesis does not require heart tube fusion. Science 305: 1619-1622.

7. Perala, N.M., et al. 2005. The expression of plexins during mouse embryogenesis. Gene Expr. Patterns 5: 355-362.

8. Gu, C. 2005. Semaphorin 3E and Plexin-D1 control vascular pattern independently of neuropilins. Science 307: 265-268.

CHROMOSOMAL LOCATION

Genetic locus: PLXND1 (human) mapping to 3q22.1; Plxnd1 (mouse) mapping to 6 E3.

SOURCE

plexin-D1 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of plexin-D1 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-46247 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

plexin-D1 (S-20) is recommended for detection of plexin-D1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

plexin-D1 (S-20) is also recommended for detection of plexin-D1 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for plexin-D1 siRNA (h): sc-45585, plexin-D1 siRNA (m): sc-45586, plexin-D1 shRNA Plasmid (h): sc-45585-SH, plexin-D1 shRNA Plasmid (m): sc-45586-SH, plexin-D1 shRNA (h) Lentiviral Particles: sc-45585-V and plexin-D1 shRNA (m) Lentiviral Particles: sc-45586-V.

Molecular Weight of plexin-D1: 212 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.

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 or our catalog for detailed protocols and support products.