

netrin G1 (D-2): sc-271774

BACKGROUND

Netrin G1 and netrin G2, also referred to as laminin-1 and laminin-2, are membrane bound axon guidance molecules involved in synaptic formation and maintenance. They comprise a subgroup within the UNC-6/netrin family. Both genes have been associated with schizophrenia involving single nucleotide polymorphisms. They are both expressed in the brain but G1 is most predominantly expressed in the thalamus and G1 is most predominantly expressed in the cortex. These two proteins differ from classical netrins by their failure to bind netrin receptors, the presence of a glycosyl phosphatidylinositol membrane anchor, and the generation of multiple isoforms. Netrin G1 has at least nine isoforms, all of which are expressed in adult brain. Isoforms G1a, c, d, and e are also expressed in fetal brain. G1c and G1d are the most highly expressed netrin G1 isoforms. Netrin G1 is involved in NMDA receptor function and may play a role in Rett syndrome (RTT), atypical autism, epilepsy and mental retardation.

REFERENCES

1. Yin, Y., et al. 2002. Laminets: laminin- and netrin-related genes expressed in distinct neuronal subsets. *Mol. Cell. Neurosci.* 19: 344-358.
2. Fukasawa, M., et al. 2004. Case-control association study of human netrin G1 gene in Japanese schizophrenia. *J. Med. Dent. Sci.* 51: 121-128.
3. Miyashita, T., et al. 2005. Strong expression of netrin G2 in the monkey claustrum. *Neuroscience* 136: 487-496.

CHROMOSOMAL LOCATION

Genetic locus: NTNG1 (human) mapping to 1p13.3; Ntng1 (mouse) mapping to 3 F3.

SOURCE

netrin G1 (D-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 47-77 near the N-terminus of netrin G1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

netrin G1 (D-2) is available conjugated to agarose (sc-271774 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271774 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271774 PE), fluorescein (sc-271774 FITC), Alexa Fluor[®] 488 (sc-271774 AF488), Alexa Fluor[®] 546 (sc-271774 AF546), Alexa Fluor[®] 594 (sc-271774 AF594) or Alexa Fluor[®] 647 (sc-271774 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271774 AF680) or Alexa Fluor[®] 790 (sc-271774 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271774 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

netrin G1 (D-2) is recommended for detection of precursor and mature netrin G1 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), 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).

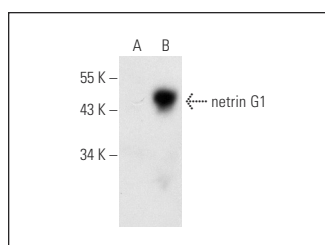
netrin G1 (D-2) is also recommended for detection of precursor and mature netrin G1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for netrin G1 siRNA (h): sc-72290, netrin G1 siRNA (m): sc-149917, netrin G1 shRNA Plasmid (h): sc-72290-SH, netrin G1 shRNA Plasmid (m): sc-149917-SH, netrin G1 shRNA (h) Lentiviral Particles: sc-72290-V and netrin G1 shRNA (m) Lentiviral Particles: sc-149917-V.

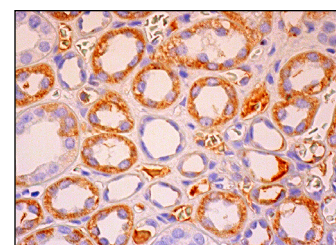
Molecular Weight of netrin G1: 61 kDa.

Positive Controls: netrin G1 (h): 293T Lysate: sc-114149.

DATA



netrin G1 (D-2): sc-271774. Western blot analysis of netrin G1 expression in non-transfected: sc-117752 (A) and human netrin G1 transfected: sc-114149 (B) 293T whole cell lysates.



netrin G1 (D-2): sc-271774. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Francescone, R., et al. 2021. netrin G1 promotes pancreatic tumorigenesis through cancer-associated fibroblast-driven nutritional support and immunosuppression. *Cancer Discov.* 11: 446-479.
2. Reinhard, L., et al. 2022. netrin G1 is a novel target antigen in primary membranous nephropathy. *J. Am. Soc. Nephrol.* 33: 1823-1831.
3. Raghavan, K.S., et al. 2022. netrin G1⁺ cancer-associated fibroblasts generate unique extracellular vesicles that support the survival of pancreatic cancer cells under nutritional stress. *Cancer Res. Commun.* 2: 1017-1036.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

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