

Neuregulin-1 α / β 1/2 (D-10): sc-393009

BACKGROUND

The neuregulins are a family of ERBB/HER ligands encoded by four genes. Neuregulin-1 gene, NRG-1, encodes numerous splice variants with differing transcription initiation sites. Neuregulin-1 includes a range of isoforms with varying glycosylation, regulation of expression and function. Neuregulin-1 splice variants each bear an EGF-like domain, though, otherwise have unique domain structures, differing functions, and discrete tissue distribution. Six types of Neuregulin-1 isoform groups have been defined based on their structural features. Three types are most often described, type I (ARIA, NDF, or HRG), type II (GGF), and type III (SMDF). Neuregulin-1 has been linked to schizophrenia and has diverse neural functions. Neuregulin-1 affects cell migration, the differentiation of neural crest and Schwann cells and acts to upregulate the expression of acetylcholine receptors at muscle fibers during the formation of neuromuscular junctions.

REFERENCES

1. Coussens, L., et al. 1985. Tyrosine kinase receptor with extensive homology to EGF receptor shares chromosomal location with neu oncogene. *Science* 230: 1132-1139.
2. Holmes, W.E., et al. 1992. Identification of heregulin, a specific activator of p185^{erbB4}. *Science* 256: 1205-1210.

CHROMOSOMAL LOCATION

Genetic locus: NRG1 (human) mapping to 8p12; Nrg1 (mouse) mapping to 8 A3.

SOURCE

Neuregulin-1 α / β 1/2 (D-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 414-425 near the C-terminus of Neuregulin-1 isoform HRG- α of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Neuregulin-1 α / β 1/2 (D-10) is available conjugated to agarose (sc-393009 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393009 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393009 PE), fluorescein (sc-393009 FITC), Alexa Fluor[®] 488 (sc-393009 AF488), Alexa Fluor[®] 546 (sc-393009 AF546), Alexa Fluor[®] 594 (sc-393009 AF594) or Alexa Fluor[®] 647 (sc-393009 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-393009 AF680) or Alexa Fluor[®] 790 (sc-393009 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393009 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

Neuregulin-1 α / β 1/2 (D-10) is recommended for detection of Neuregulin-1 isoforms HRG- α , HRG- α 1A, HRG- α 2B, HRG- β 1, HRG- β 2, and Type IV- β 1a of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

Neuregulin-1 α / β 1/2 (D-10) is also recommended for detection of Neuregulin-1 isoforms HRG- α , HRG- α 1A, HRG- α 2B, HRG- β 1, HRG- β 2, and Type IV- β 1a in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for Neuregulin-1 siRNA (h): sc-37210, Neuregulin-1 siRNA (m2): sc-270410, Neuregulin-1 shRNA Plasmid (h): sc-37210-SH, Neuregulin-1 shRNA Plasmid (m2): sc-270410-SH, Neuregulin-1 shRNA (h) Lentiviral Particles: sc-37210-V and Neuregulin-1 shRNA (m2) Lentiviral Particles: sc-270410-V.

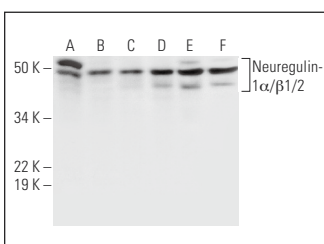
Molecular Weight of HRG- α /HRG- α 1A/HRG- α 2B: 70/71/51 kDa.

Molecular Weight of HRG- β 1/HRG- β 2: 71/70 kDa.

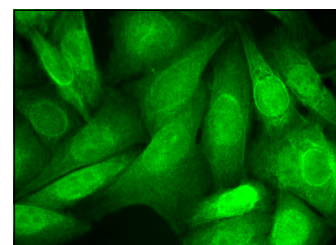
Molecular Weight of Type IV- β 1a: 65 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, MCF7 whole cell lysate: sc-2206 or A-673 cell lysate: sc-2414.

DATA



Neuregulin-1 α / β 1/2 (D-10): sc-393009. Western blot analysis of Neuregulin-1 α / β 1/2 expression in A-431 (A), MCF7 (B), A-673 (C), SK-N-MC (D), MDA-MB-231 (E) and HeLa (F) whole cell lysates.



Neuregulin-1 α / β 1/2 (D-10) Alexa Fluor[®] 488: sc-393009 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear and membrane localization. Blocked with UltraCruz[®] Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Sun, Y., et al. 2017. A novel regulatory mechanism of smooth muscle α -Actin expression by NRG-1/circACTA2/miR-548f-5p axis. *Circ. Res.* 121: 628-635.
2. Sun, Y., et al. 2019. Angiotensin II inhibits apoptosis of mouse aortic smooth muscle cells through regulating the circNRG-1/miR-193b-5p/NRG-1 axis. *Cell Death Dis.* 10: 362.

RESEARCH USE

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