

# Neuregulin-1 $\alpha$ / $\beta$ 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<sup>erbB4</sup>. *Science* 256: 1205-1210.

## CHROMOSOMAL LOCATION

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

## SOURCE

Neuregulin-1 $\alpha$ / $\beta$ 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- $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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

Blocking peptide available for competition studies, sc-393009 P, (100  $\mu$ 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<sup>°</sup> C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

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

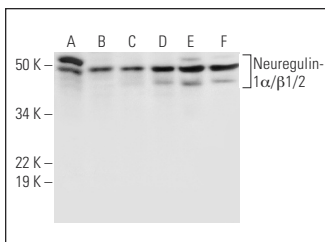
Molecular Weight of HRG- $\alpha$ /HRG- $\alpha$ 1A/HRG- $\alpha$ 2B: 70/71/51 kDa.

Molecular Weight of HRG- $\beta$ 1/HRG- $\beta$ 2: 71/70 kDa.

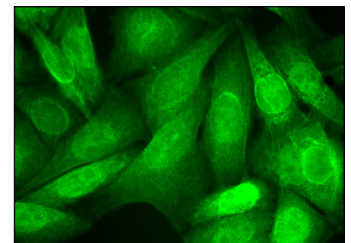
Molecular Weight of Type IV- $\beta$ 1a: 65 kDa.

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 $\alpha$ / $\beta$ 1/2 (D-10): sc-393009. Western blot analysis of Neuregulin-1 $\alpha$ / $\beta$ 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 $\alpha$ / $\beta$ 1/2 (D-10) Alexa Fluor<sup>®</sup> 488: sc-393009 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear and membrane localization. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214.

## SELECT PRODUCT CITATIONS

1. Sun, Y., et al. 2017. A novel regulatory mechanism of smooth muscle  $\alpha$ -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.