

# Neuregulin-1 (E-12): sc-393006

## BACKGROUND

The neuregulins are a family of ErbB/HER ligands encoded by four genes. Neuregulin-1 gene, NRG1, 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Neuregulin-1 (E-12) is a mouse monoclonal antibody raised against amino acids 21-230 mapping within an N-terminal extracellular domain 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 (E-12) is available conjugated to agarose (sc-393006 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393006 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393006 PE), fluorescein (sc-393006 FITC), Alexa Fluor® 488 (sc-393006 AF488), Alexa Fluor® 546 (sc-393006 AF546), Alexa Fluor® 594 (sc-393006 AF594) or Alexa Fluor® 647 (sc-393006 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393006 AF680) or Alexa Fluor® 790 (sc-393006 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Neuregulin-1 (E-12) is recommended for detection of Neuregulin-1 isoforms HRG- $\alpha$ , HRG- $\alpha$ 1A, HRG- $\alpha$ 2B, HRG- $\alpha$ 3, HRG- $\beta$ 1, HRG- $\beta$ 2, HRG- $\beta$ 3 (GGF), GGF2 and SMDF 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).

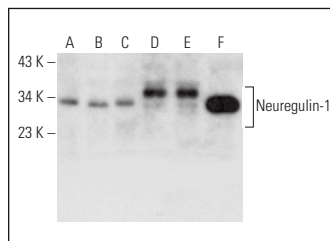
Suitable for use as control antibody for Neuregulin-1 siRNA (h): sc-37210, Neuregulin-1 siRNA (m2): sc-270410, Neuregulin-1 shRNA Plasmid (h): sc-37210-SH, Neuregulin-1 shRNA Plasmid (m2): sc-270410-SH, Neuregulin-1 shRNA (h) Lentiviral Particles: sc-37210-V and Neuregulin-1 shRNA (m2) Lentiviral Particles: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

Molecular Weight of Neuregulin-1 isoforms: 26-71 kDa.

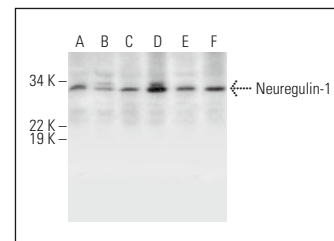
## STORAGE

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

## DATA



Neuregulin-1 (E-12): sc-393006. Western blot analysis of Neuregulin-1 expression in A-673 (A), NIH/3T3 (B), C2C12 (C), MDA-MB-231 (D) and A549 (E) whole cell lysates and mouse brain tissue extract (F).



Neuregulin-1 (E-12): sc-393006. Western blot analysis of Neuregulin-1 expression in MCF7 (A), HeLa (B), A-431 (C), SK-N-MC (D), SK-BR-3 (E) and A-673 (F) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Ho, Y.J., et al. 2018. Single-cell RNA-seq analysis identifies markers of resistance to targeted BRAF inhibitors in melanoma cell populations. *Genome Res.* 28: 1353-1363.
- Fledrich, R., et al. 2019. NRG1 type I dependent autocrine stimulation of Schwann cells in onion bulbs of peripheral neuropathies. *Nat. Commun.* 10: 1467.
- Wang, J., et al. 2021. Neuregulin-1/ErbB4 signaling contributes to the anti-epileptic effects of the ketogenic diet. *Cell Biosci.* 11: 29.
- Chen, P., et al. 2021. Spine impairment in mice high-expressing Neuregulin-1 due to LIMK1 activation. *Cell Death Dis.* 12: 403.
- Ma, Y., et al. 2022. Neuregulin-1 regulates the conversion of M1/M2 microglia phenotype via ErbB4-dependent inhibition of the NF- $\kappa$ B pathway. *Mol. Biol. Rep.* 49: 3975-3986.
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- Huang, Z., et al. 2023. Metformin promotes Schwann cell remyelination, preserves neural tissue and improves functional recovery after spinal cord injury. *Neuropeptides* 100: 102348.
- Kim, G., et al. 2023. Fluorescent chiral quantum dots to unveil origin-dependent exosome uptake and cargo release. *bioRxiv*. Published.
- Mao, R., et al. 2024. Impairments of GABAergic transmission in hippocampus mediate increased susceptibility of epilepsy in the early stage of Alzheimer's disease. *Cell Commun. Signal.* 22: 147.

## RESEARCH USE

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

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