

# Neuregulin-1 (7D5): sc-57384

## 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.

## REFERENCES

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3. Marchionni, M.A., et al. 1993. Glial growth factors are alternatively spliced ErbB2 ligands expressed in the nervous system. *Nature* 362: 312-318.
4. Meyer, D., et al. 1997. Isoform-specific expression and function of neuregulin. *Development* 124: 3575-3586.
5. Britsch, S., et al. 1998. The ErbB-2 and ErbB-3 receptors and their ligand, Neuregulin-1, are essential for development of the sympathetic nervous system. *Genes Dev.* 12: 1825-1836.
6. Osheroff, P.L., et al. 1999. Receptor binding and biological activity of mammalian expressed sensory and motor neuron-derived factor (SMDF). *Growth Factors* 16: 241-253.
7. Steinthorsdottir, V., et al. 2004. Multiple novel transcription initiation sites for NRG-1. *Gene* 342: 97-105.
8. Petryshen, T.L., et al. 2005. Support for involvement of Neuregulin-1 in schizophrenia pathophysiology. *Mol. Psychiatry* 10: 366-374.
9. Li, D., et al. 2006. Meta-analysis shows strong positive association of the Neuregulin-1 (NRG1) gene with schizophrenia. *Hum. Mol. Genet.* 15: 1995-2002.

## CHROMOSOMAL LOCATION

Genetic locus: Nrg1 (mouse) mapping to 8 A3.

## SOURCE

Neuregulin-1 (7D5) is a mouse monoclonal antibody raised against recombinant extracellular domain of Neuregulin-1 of rat origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains IgG<sub>2a</sub> in 250 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Neuregulin-1 (7D5) is recommended for detection of Neuregulin-1 of mouse and rat origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:1000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:50-1:500).

Suitable for use as control antibody for Neuregulin-1 siRNA (m): sc-37211, Neuregulin-1 shRNA Plasmid (m): sc-37211-SH and Neuregulin-1 shRNA (m) Lentiviral Particles: sc-37211-V.

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

## SELECT PRODUCT CITATIONS

1. Jiang, J., et al. 2014. Activation of spinal neuregulin 1-ErbB2 signaling pathway in a rat model of cancer-induced bone pain. *Int. J. Oncol.* 45: 235-244.

## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **Neuregulin-1 (E-12): sc-393006** for Neuregulin-1 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647.