

Neuregulin-1 SMDF (N-12): sc-33270

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

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. Yarden, Y. and Ullrich, A. 1988. Growth factor receptor tyrosine kinases. *Annu. Rev. Biochem.* 57: 433-478.
3. Holmes, W.E., et al. 1992. Identification of heregulin, a specific activator of p185erbB4. *Nature* 366: 473-475.
4. Plowman, G.D., et al. 1993. Heregulin induces tyrosine phosphorylation of HER4/p180erbB4. *Nature* 366: 473-475.
5. Marchionni, M.A., et al. 1993. Glial growth factors are alternatively spliced ErbB2 ligands expressed in the nervous system. *Nature* 362: 312-318.
6. Carraway, K.L., III, et al. 1994. The erbB3 gene product is a receptor for heregulin. *J. Biol. Chem.* 269: 14303-14306.
7. Carraway, K.L., III, et al. 1994. A Neu acquaintance for ErbB3 and ErbB4: a role for receptor heterodimerization in growth signaling. *Cell* 78: 5-8.
8. Sliwkowski, M.X., et al. 1994. Coexpression of ErbB2 and ErbB3 proteins reconstitutes a high affinity receptor for heregulin. *J. Biol. Chem.* 269: 14661-14665.
9. Meyer, D., et al. 1997. Isoform-specific expression and function of neuregulin. *Development* 124: 3575-3586.

CHROMOSOMAL LOCATION

Genetic locus: NRG1 (human) mapping to 8p12.

SOURCE

Neuregulin-1 SMDF (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Neuregulin-1 SMDF of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-33270 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Neuregulin-1 SMDF (N-12) is recommended for detection of Neuregulin-1, SMDF isoform of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 shRNA Plasmid (h): sc-37210-SH and Neuregulin-1 shRNA (h) Lentiviral Particles: sc-37210-V.

Molecular Weight of Neuregulin-1 SMDF: 32 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, THP-1 cell lysate: sc-2238 or MCF7 whole cell lysate: sc-2206.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.