

# Neuregulin-4 (P-15): sc-13498

## BACKGROUND

The ErbB/HER family of receptor tyrosine kinases consists of four receptors that bind a large number of growth factor ligands sharing an epidermal growth factor-(EGF)-like motif. The neuregulins (NRGs) are a diverse family of proteins that arise by alternative splicing from a single gene. These proteins play an important role in controlling the growth and differentiation of glial, epithelial, and muscle cells. Whereas ErbB-1 binds seven different ligands whose prototype is EGF, the four families of neuregulins activate ErbB-3 and/or ErbB-4. Neuregulin-1 (also known as heregulin) has diverse functions in neural development, and one of them is to up regulate the expression of acetylcholine receptors at muscle fibers during the formation of neuromuscular junctions. Neuregulin-2 exhibits a distinct expression pattern in adult brain and developing heart. Neuregulin-3 is expressed in cell lines derived from breast cancer and is a potential regulator of normal and malignant breast epithelial cells. Neuregulin-4 is detected in the adult pancreas and weakly in muscle.

## 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., et al. 1988. Growth factor receptor tyrosine kinases. *Ann. Rev. Biochem.* 57: 433-478.
3. Holmes, W.E., et al. 1992. Identification of heregulin, a specific activator of p185ErbB4. *Science* 256: 1205-1210.
4. Marchionni, M.A., et al. 1993. Glial growth factors are alternatively spliced ErbB2 ligands expressed in the nervous system. *Nature* 362: 312-318.
5. Plowman, G.D., et al. 1993. Heregulin induces tyrosine phosphorylation of HER4/p180ErbB4. *Nature* 366: 473-475.
6. Carraway, K.L. III, et al. 1994. The erbB3 gene product is a receptor for heregulin. *J. Biol. Chem.* 269: 14303-14306.
7. 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.
8. 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.
9. Carraway, K.L., et al. 1997. Neuregulin-2, a new ligand of ErbB3/ErbB4-receptor tyrosine kinases. *Nature* 387: 512-516.

## STORAGE

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

## PROTOCOLS

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

## CHROMOSOMAL LOCATION

Genetic locus: Nrg4 (mouse) mapping to 9 B.

## SOURCE

Neuregulin-4 (P-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Neuregulin-4 of mouse origin.

## 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-13498 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Neuregulin-4 (P-15) is recommended for detection of Neuregulin-4 of mouse and rat 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).

Neuregulin-4 (P-15) is also recommended for detection of Neuregulin-4 in additional species, including equine and porcine.

Suitable for use as control antibody for Neuregulin-4 siRNA (m): sc-39684, Neuregulin-4 shRNA Plasmid (m): sc-39684-SH and Neuregulin-4 shRNA (m) Lentiviral Particles: sc-39684-V.

## 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.