SANTA CRUZ BIOTECHNOLOGY, INC.

Neuregulin-1 (H-210): sc-28916

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (H-210) is a rabbit polyclonal antibody raised against amino acids 21-230 mapping within an N-terminal extracellular domain of Neuregulin-1 isoform HRG-α of human origin.

PRODUCT

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

APPLICATIONS

Neuregulin-1 (H-210) is recommended for detection of Neuregulin-1 isoforms HRG-α, HRG-α1A, HRG-α2B, HRG-α3, HRG-β1, HRG-β2, HRG-β3 (GGF), GGF2 and SMDF of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 (m): sc-37211, Neuregulin-1 shRNA Plasmid (h): sc-37210-SH, Neuregulin-1 shRNA Plasmid (m): sc-37211-SH, Neuregulin-1 shRNA (h) Lentiviral Particles: sc-37210-V and Neuregulin-1 shRNA (m) Lentiviral Particles: sc-37211-V.

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

Positive Controls: A-673 cell lysate: sc-2414, A-431 whole cell lysate: sc-2201 or SK-N-MC cell lysate: sc-2237.

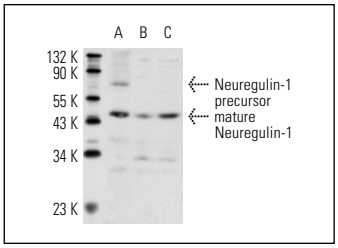
STORAGE

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

RESEARCH USE

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

DATA



Neuregulin-1 (H-210): sc-28916. Western blot analysis of Neuregulin-1 expression in A-431 (**A**), A-673 (**B**) and SK-N-MC (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Savonenko, A.V., et al. 2008. Alteration of BACE1-dependent NRG1/ErbB-4 signaling and schizophrenia-like phenotypes in BACE1-null mice. Proc. Natl. Acad. Sci. USA 105: 5585-5590.
2. Wen, Y., et al. 2008. Interplay between cyclin-dependent kinase 5 and glycogen synthase kinase 3β mediated by Neuregulin signaling leads to differential effects on Tau phosphorylation and amyloid precursor protein processing. J. Neurosci. 28: 2624-2632.
3. Sankaranarayanan, S., et al. 2008. *In vivo* β-secretase 1 inhibition leads to brain Aβ lowering and increased α-secretase processing of amyloid precursor protein without effect on Neuregulin-1. J. Pharmacol. Exp. Ther. 324: 957-969.
4. Freese, C., et al. 2009. The effects of α-secretase ADAM10 on the proteolysis of Neuregulin-1. FEBS J. 276: 1568-1580.
5. Calvo, M., et al. 2010. Neuregulin-ErbB signaling promotes microglial proliferation and chemotaxis contributing to microgliosis and pain after peripheral nerve injury. J. Neurosci. 30: 5437-5450.
6. Benvegnù, S., et al. 2011. Aged PrP null mice show defective processing of neuregulins in the peripheral nervous system. Mol. Cell. Neurosci. 47: 28-35.
7. Wilson, T.R., et al. 2011. Neuregulin-1-mediated autocrine signaling underlies sensitivity to HER2 kinase inhibitors in a subset of human cancers. Cancer Cell 20: 158-172.
8. Tang, C.S., et al. 2012. Mutations in the NRG1 gene are associated with Hirschsprung disease. Hum. Genet. 131: 67-76.