

Human NRG1-beta 1 Protein (EGF Domain, Fc Tag)

Catalog Number: 11609-H01H



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

ARIA; GGF; GGF2; HGL; HRG; HRG1; HRGA; MST131; MSTP131; NDF; Neuregulin 1; NRG1-IT2; SMDF

Protein Construction:

A DNA sequence encoding the EGF-like domain (Thr 176-Lys 246) of human NRG1 isoform beta1 (Q02297-6) was fused with the Fc region of human IgG1 at the N-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 86 % as determined by SDS-PAGE

Bio Activity:

1. Measured by its binding ability in a functional ELISA.

2. Immobilized Rhesus ErbB3 at 2 µg/mL (100 µl/well) can bind human NRG1 (isoform Beta1), The EC50 of human NRG1 (isoform Beta1) is 0.58 µg/mL.

3. Immobilized human ErbB3 at 2 µg/mL (100 µl/well) can bind human NRG1 (isoform Beta1), The EC50 of human NRG1 (isoform Beta1) is 0.43 µg/mL.

4. Human breast cancer organoids were cultured with FGF7(Cat#10210-H07E), RSPO1(Cat#11083-HNAS), IGF1(Cat#10598-HNAE), EGF(Cat#50482-MNCH), NRG1 Beta 1(Cat#11609-H01H), NOG(Cat#50688-M02H). (Routinely tested). Data provided by D1 Medical Technology.

5. Human breast organoids were cultured with IGF1(Cat#10598-HNAE), NRG1 Beta 1(Cat#11609-H01H). (Routinely tested). Data provided by D1 Medical Technology.

6. Human ovarian organoids were cultured with IGF1(Cat#10598-HNAE), NRG1 Beta 1(Cat#11609-H01H), RSPO1(Cat#11083-HNAS), EGF(Cat#50482-MNCH), NOG(50688-M02H). (Routinely tested). Data provided by D1 Medical Technology.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Glu

Molecular Mass:

The recombinant human NRG1 (aa176-246) /Fc chimera is a disulfide-linked homodimeric protein. The reduced monomer consists of 331 amino acids and has a calculated molecular mass of 36.7 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rh NRG1/Fc monomer is approximately 38 kDa.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

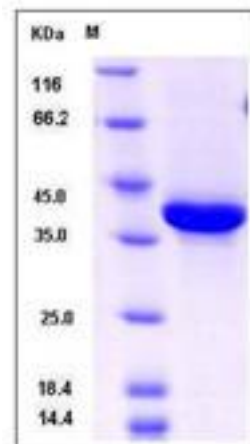
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



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Protein Description

Neuregulin 1 or NRG1 is one of four proteins in the neuregulin family that act on the EGFR family of receptors. This growth factor was originally identified as a 44-kD glycoprotein that interacts with the NEU / ERBB2 receptor tyrosine kinase to increase its phosphorylation on tyrosine residues. NRG1 is a trophic factor that has been implicated in neural development, neurotransmission, and synaptic plasticity. NRG1 has multiple isoforms that are generated by usage of different promoters and alternative splicing of a single gene. Neuregulin 1 (NRG1) is essential for the development and function of multiple organ systems, and its dysregulation has been linked to diseases such as cancer and schizophrenia. NRG1 is a schizophrenia candidate gene and plays an important role in brain development and neural function. Schizophrenia is a complex disorder, with etiology likely due to epistasis.

References

1. Nicodemus KK, et al. (2010) Biological validation of increased schizophrenia risk with NRG1, ERBB4, and AKT1 epistasis via functional neuroimaging in healthy controls. *Arch Gen Psychiatry*. 67 (10): 991-1001.
2. Tan W, et al. (2007) Molecular cloning of a brain-specific, developmentally regulated neuregulin 1 (NRG1) isoform and identification of a functional promoter variant associated with schizophrenia. *J Biol Chem*. 282 (33): 24343-51.
3. Holmes WE, et al. (1992) Identification of heregulin, a specific activator of p185erbB2. *Science*. 256 (5060): 1205-10.

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