

Human NRG1-beta 1 Protein (ECD)

Catalog Number: 11609-HNCH



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 N-terminal fragment (Ser 2-Lys 246) of human NRG1 isoform beta1 (Q02297-6) was expressed.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 90 % as determined by SDS-PAGE

Bio Activity:

1. Measured in a cell proliferation assay using MCF-7 cells. The ED₅₀ for this effect is typically 2-10 ng/mL.

2. Western blot analysis of extracts from serum-starved MCF-7, untreated (-) or treated with neuregulin-1 (Cat # 11609-HNCH) (100 ng/mL, 5 min) using Phospho-HER3/Erbb3 (Tyr1289) rabbit monoclonal Antibody (Cat# 111146-R0004) at 1:2000 dilution (upper), or Anti-HER3/ERBB3 Antibody, Rabbit Polyclonal (Cat# 10201-RP02) at 1:2000 dilution (middle), or Beta-Tubulin Loading Control Antibody, Mouse MAb (Cat# 100109-MM05T) at 1:2000 dilution (lower) (Routinely tested).

Endotoxin:

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

Predicted N terminal: Ser 2

Molecular Mass:

The recombinant human NRG1 comprises 245 amino acids and has a predicted molecular mass of 26.8 kDa. As a result of glycosylation, it migrates as an approximately 47.7 kDa band in SDS-PAGE under reducing conditions.

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

Stability & Storage:

Samples are stable for twelve months from date of receipt at -20°C to -80°C.

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:



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 the 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.