

NRG1 alpha Protein, Human, Recombinant (His)

General Information

Synonyms:	HRGA;NDF;neuregulin 1;SMDF;NRG1 α ;NRG1-IT2;GGF2;GGF;HRG;MSTP131;HGL;MST131;HRG1;ARIA
Protein Construction:	A DNA sequence encoding the human NRG1 isoform alpha (Q02297-1) extracellular domain (Ser 20-Lys 241) was fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 20
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q02297-1
Molecular Weight:	25.5kDa (predicted); 40-45 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	1. Measured by its ability to biotinylated Human ErbB4-Fc in functional Elisa. 2. Measured by its ability to biotinylated Rhesus ErbB3-His in functional Elisa. 3. Measured by its ability to biotinylated Rhesus ErbB3 in functional Elisa.
Purity:	> 98 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

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.

Reference

- 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.
- 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.
- Holmes WE, et al. (1992) Identification of heregulin, a specific activator of p185erbB2. Science. 256 (5060): 1205-10.

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