

NRG1 beta 1 Protein, Human, Recombinant

General Information

Synonyms:	NDF;GGF;MSTP131;Neuregulin 1;MST131;ARIA;NRG1-IT2;SMDF;NRG1 β 1;HGL;Heregulin beta-1;HRG1;GGF2;HRGA;HRG
Protein Construction:	A DNA sequence encoding the N-terminal fragment (Ser 2-Lys 246) of human NRG1 isoform beta1 (Q02297-6) was expressed. Predicted N terminal: Ser 2
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q02297-6
Molecular Weight:	26.8 kDa (predicted); 47.7 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured in a cell proliferation assay using MCF-7 cells. The ED50 for this effect is typically 2-10 ng/mL.
Purity:	> 90 % 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.

Shipping:

In general, Lyophilized powders are shipping with blue 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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