

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:

Reconstituted with sterile deionized water to 0.15 mg/mL. Reconstitution conditions may vary depending on the lot.

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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