# Data Sheet (Cat.No.TMPY-02705)

TargetMol

## NRG1 beta 1 Protein, Human, Recombinant (hFc)

### General Information

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| Synonyms: | MSTP131;HRG1;NRG1-IT2;ARIA;HGL;SMDF;GGF;Heregulin beta-1;HRG;NDF;MST131; neuregulin 1;HRGA;GGF2;NRG1 β1 |
| Protein Construction: | Ser2-Lys246 |
| Species: | Human |
| Expression Host: | HEK293 Cells |
| Accession: | Q02297-6 |
| Molecular Weight: | 54 kDa (predicted); 70-80 kDa (reducing condition, due to glycosylation) |

### QC Testing

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| Biological Activity: | Immobilized Human Her4, His Tag at 2 μg/ml (100 μl/well) on the plate. Dose response curve for Human NRG1 Beta 1, hFc Tag with the EC50 of 18.7 ng/ml determined by ELISA (QC Test). <br> Immobilized Human Her3, His Tag at 2 μg/ml (100 μl/well) on the plate. Dose response curve for Human NRG1 Beta 1, hFc Tag with the EC50 of 17.1 ng/ml determined by ELISA. |
| Purity: | > 95% as determined by Bis-Tris PAGE; > 95% as determined by HPLC |
| Endotoxin: | < 1.0 EU/μg of the protein as determined by the LAL method. |
| Formulation: | Lyophilized from 0.22 μm filtered solution in PBS (pH 7.4). Normally 8% trehalose is added as protectant before lyophilization. |

### Preparation and Storage

Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

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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