

# Canine NRG1 / Neuregulin 1 Protein (His Tag)



Sino Biological  
Biological Solution Specialist

Catalog Number: 70084-D08H

## General Information

### Gene Name Synonym:

NRG1

### Protein Construction:

A DNA sequence encoding the canine NRG1 (XP\_858147.1) extracellular domain (Ser19-Lys240) was expressed with a C-terminal polyhistidine tag.

Source: Canine

Expression Host: HEK293 Cells

## QC Testing

Purity: > 90 % as determined by SDS-PAGE

### Bio Activity:

Measured in a serum-free cell proliferation assay using MCF7 human breast cancer cells. The  $ED_{50}$  for this effect is typically 0.2-2  $\mu\text{g/mL}$ .

### Endotoxin:

< 1.0 EU per  $\mu\text{g}$  of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at  $-70^{\circ}\text{C}$

Predicted N terminal: Ser 19

### Molecular Mass:

The recombinant canine NRG1 comprises 233 amino acids and has a predicted molecular mass of 25.5 kDa. The apparent molecular mass of the protein is approximately 39-46 kDa in SDS-PAGE under reducing conditions due to glycosylation.

### 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

### Storage:

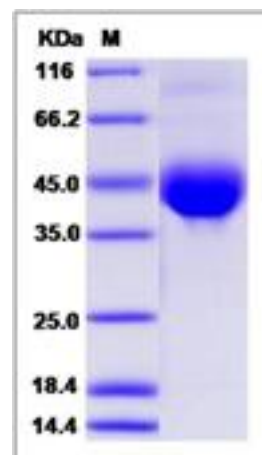
Store it under sterile conditions at  $-20^{\circ}\text{C}$  to  $-80^{\circ}\text{C}$  upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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 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.

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