

**DESCRIPTION**

<b>Source</b>	Chinese Hamster Ovary cell line, CHO-derived human Neuregulin-3/NRG3 protein Ser93-Arg359, with a C-terminal 6-His tag Accession # P56975.1
<b>N-terminal Sequence Analysis</b>	Ser93 and Leu158
<b>Predicted Molecular Mass</b>	30 kDa

**SPECIFICATIONS**

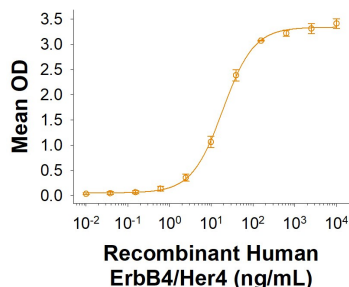
<b>SDS-PAGE</b>	35-74 kDa, under reducing conditions.
<b>Activity</b>	Measured by its binding ability in a functional ELISA. Recombinant Human Neuregulin-3/NRG3 His-tag (Catalog # 11520-NR) binds to Recombinant Human ErbB4/Her4 Fc Chimera (Catalog # 1131-ER) with an ED <sub>50</sub> of 5.00-50.0 ng/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 500 µg/mL in PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

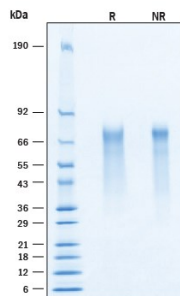
**DATA**

**Binding Activity**



**Recombinant Human Neuregulin-3/NRG3 His-tag Protein Binding Activity.**  
Measured by its binding ability in a functional ELISA. Recombinant Human Neuregulin-3/NRG3 His-tag Protein (Catalog # 11520-NR) binds to Recombinant Human ErbB4/Her4 Fc Chimera Protein (Catalog # 1131-ER) with an ED<sub>50</sub> of 5.00-50.0 ng/mL.

**SDS-PAGE**



**Recombinant Human Neuregulin-3/NRG3 His-tag Protein SDS-PAGE.** 2 µg/lane of Recombinant Human Neuregulin-3/NRG3 His-tag Protein (Catalog # 11520-NR) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 35-74 kDa, under reducing conditions.

**BACKGROUND**

Neuregulin-3 is a member of the neuregulin family of EGF proteins. Human NRG3, sharing 93% homology with mouse and rat NRG3, is a 78 kDa, 720 aa protein containing a 339 aa cytoplasmic domain, a 21 aa transmembrane domain, and a 360 extracellular domain with an epidermal growth factor (EGF) motif which acts as a ligand for the ErbB4 receptor tyrosine kinase that plays pleotropic roles in neurodevelopment (1-2). Unlike many NRG1 family members but similar to sensory and motor neuron-derived factor (SMDF), NRG3 does not contain Ig-like or kringle-like domains but does contain a stretch of nonpolar aa (W66–V91). This region is thought to help translocation across the endoplasmic reticulum. NRG3 also lacks sites for N-linked glycosylation but contains many O-linked sites in a mucin-like Ser/Thr rich region. NRG3-ErbB4 was implicated in the signaling in neurodevelopment and adult brain function by promoting oligodendrocyte survival via the ErbB4/PI3K/AKT1 pathway (3). NRG3 and NRG1 can serve as potential independent biomarkers in brain lower grade glioma and glioblastoma multiforme (4). Several studies have proved that NRG1 and NRG3 play important roles in brain development, including neural plasticity (5), differentiation (6), and Schwann cell migration (7). It was also shown that NRG3 signaling acts to promote the initiation of mammary placode development and promoted the differentiation of squamous epithelia into the mammary epithelia (8).

**References:**

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