Recombinant Human Neuregulin-2/NRG2 His-tag

Catalog Number: 11355-NR

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human Neuregulin-2/NRG2 protein Cys112-Lys404, with a C-terminal 6-His tag Accession # O14511.1
N-terminal Sequence Analysis	Cys112
Predicted Molecular Mass	34 kDa

SPECIFICATIONS

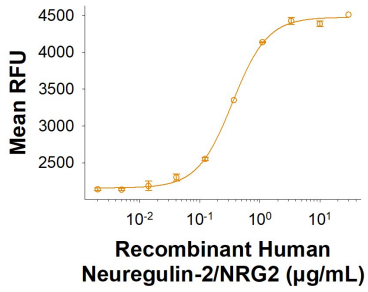
SDS-PAGE	41-51 kDa, under reducing conditions.
Activity	Measured in a serum-free cell proliferation assay using MCF-7 human breast cancer cells. Karey, K.P. *et al.* (1988) Cancer Research **48**:4083. The ED_{50} for this effect is 0.100-1.00 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

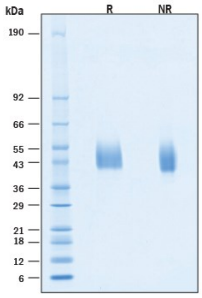
DATA

Bioactivity



Recombinant Human Neuregulin-2/NRG2 His-tag Protein Bioactivity. Recombinant Human Neuregulin-2/NRG2 His-tag Protein (Catalog # 11355-NR) induces MCF-7 human breast cancer cell proliferation. The ED_{50} for this effect is 0.100-1.00 µg/mL

SDS-PAGE



Recombinant Human Neuregulin-2/NRG2 His-tag Protein SDS-PAGE. 2 µg/lane of Recombinant Human Neuregulin-2/NRG2 His-tag Protein (Catalog # 11355-NR) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 41-51 kDa.

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

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BACKGROUND

Neuregulins (NRGs) are a family of six related physiological ligands all containing a receptor-binding epidermal growth factor (EGF)-like domain that mediate their binding to cellular receptors. The EGF-like domain is responsible for binding to the HER RTK family members (EGFR, HER2, HER3, and HER4). Human NRG2, also known as NTAK (neural-and thymus-derived activator for ErbB kinases), is a ~92 kDa, 850 aa protein composed of a 111 aa signal sequence, 294 aa extracellular domain, 21 aa transmembrane domain, and a 424 aa cytoplasmic domain. Human NRG2 shares 95% homology with mouse and rat NRG. NRG-2 encodes six to eight isoforms that contain Ig-like domains near their N-termini. The NRG family are involved in the development of the nervous and cardiovascular systems through the ErbB signaling pathway (1). They also regulate multiple intercellular signal transduction and a wide range of biological processes, such as differentiation, migration, and myelination (2). The primary receptor for NRG-2 is HER4, but binds directly to both ErbB3 and ErbB4, and transactivates ErbB1 and ErbB2 via heterodimerization with ErbB3 or ErbB4 (3, 4). Interaction between NRGs and their receptors plays an important role in the pathogenesis and treatment of neurodegenerative diseases (5). NRGs can be used as targets for therapeutic or clinical trials for their multiple roles in many neurological disorders, such as ALS, brain trauma, spinal cord injury, peripheral neuropathy, and schizophrenia (2). NRG-2 promotes neuronal survival when bound to ErbB3 on neurons (6). NRG-2 can indirectly transactivate HER2 and trigger downstream signaling pathways linked to carcinogenesis, tumor progression, and resistance to cancer therapies (7). NRG-2 binds to HER3 and HER4 to mediate downstream signaling linked to breast cancer initiation and progression (8, 9).

References:

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