

Recombinant Human NRG1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50739

Size: 10ug, 100ug

Protein Name: Pro-neuregulin-1, membrane-bound isoform (Pro-NRG1) [Cleaved into: Neuregulin-1 (Acetylcholine receptor-inducing activity) (ARIA) (Breast cancer cell differentiation factor p45) (Glial growth factor) (Heregulin) (HRG) (Neu differentiation factor) (Sensory and motor neuron-derived factor)]

Synonym: NRG1, GGF, HGL, HRGA, NDF, SMDF

UniProt ID: Q02297

UniProt Link: www.uniprot.org/uniprotkb/Q02297/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 640 AA

Molecular Weight: 70 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MSEKKEGRGKGKGKKKERGSGKKPESAAGSQSPALPPRLKEMKSQESAAGSKLVLCETSSEYSS
LRFKWFKNELNRKNKPQNIQKKPGKSELINKASLADSGEYMCKVISKLGNDASANITIVESN
EIITGMPASTEGAYVSSSPIRISVSTEGANTSSSTSTTTGTSHLVKCAEKEKTCVNGGECFMVKD
LSNPSRYLCKCQPGFTGARCTENVPMKVQNQEKAEELYQKRVLTITGICIALLVGIMCVVAYCKTKK
QRKKLHDLRLRQSLRSERNMMNIANGPHHPNPPPEENVQLVNQYVSKNVISSEHIVEREAETSFSTS
HYTSTAHHSTTVTQTTPSHSWSNGHTESILSESHSVIVMSSVENSRRHSSPTGGPRGRLNGTGPREC
NSFLRHARETPDSYRDSPHSERYVSAMTTPARMSPVDFHTPSSPKSPPSEMSPPVSSMTVSMPSM
AVSPFMEEERPLLLVTPPRLREKKFDHHPQQFSSFHHPAHDSNSLPASPLRIVEDEEYETTQEYEP
AQEPVKKLANSRRAKRTKPNGHIANRLEVDSENTSSQSSNSESETERVGEDTPFLGIQNPLAASLE
ATPAFRLADSRTNPAGRFSTQEEIQARLSSVIANQDPIAV

3. Buffer Composition



Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Pro-neuregulin-1, membrane-bound isoform (Pro-NGR1) [Cleaved into: Neuregulin-1 (Acetylcholine receptor-inducing activity) (ARIA) (Breast cancer cell differentiation factor p45) (Glial growth factor) (Heregulin) (HRG) (Neu differentiation factor) (Sensory and motor neuron-derived factor)] produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Direct ligand for ERBB3 and ERBB4 tyrosine kinase receptors. Concomitantly recruits ERBB1 and ERBB2 coreceptors, resulting in ligand-stimulated tyrosine phosphorylation and activation of the ERBB receptors. The multiple isoforms perform diverse functions such as inducing growth and differentiation of epithelial, glial, neuronal, and skeletal muscle cells; inducing expression of acetylcholine receptor in synaptic vesicles during the formation of the neuromuscular junction; stimulating lobuloalveolar budding and milk production in the mammary gland and inducing differentiation of mammary tumor cells; stimulating Schwann cell proliferation; implication in the development of the myocardium such as trabeculation of the developing heart. Isoform 10 may play a role in motor and sensory neuron development. Binds to ERBB4 (PubMed:10867024, PubMed:7902537). Binds to ERBB3 (PubMed:20682778). Acts as a ligand for integrins and binds (via EGF domain) to integrins ITGA5:ITGB3 or ITGA6:ITGB4. Its binding to integrins and subsequent ternary complex formation with integrins and ERBB3 are essential for NRG1-ERBB signaling. Induces the phosphorylation and activation of MAPK3/ERK1, MAPK1/ERK2 and AKT1 (PubMed:20682778). Ligand-dependent ERBB4 endocytosis is essential for the NRG1-mediated activation of these kinases in neurons (By similarity).

Subcellular Localization: [Pro-neuregulin-1, membrane-bound isoform]: Cell membrane; Single-pass type I membrane protein. Note=Does not seem to be active.; [Neuregulin-1]: Secreted.; [Isoform 8]: Nucleus. Note=May be nuclear.; [Isoform 9]: Secreted. Note=Has a signal peptide.; [Isoform 10]: Membrane; Single-pass type I membrane protein. Note=May possess an internal uncleaved signal sequence.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.