

Cytokines

Human Recombinant Heregulin-beta 1

Heregulin-beta 1



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Catalog # 78071
78071.1

10 µg
50 µg

Product Description

Heregulin-beta 1 also known as neuregulin-1 (NRG-1) is a member of the epidermal growth factor (EGF) family of growth factors and acts as a ligand for ErbB family receptor tyrosine kinases (Britsch et al.). Heregulin/neuregulin is a family of structurally related polypeptide growth factors derived from alternatively spliced genes (NRG1, NRG2, NRG3, and NRG4). Heregulin-beta 1 plays an important role during the development of the nervous system, heart, and mammary glands (Britsch). Heregulin-beta 1 is expressed in neuronal cells, and modulates cell growth and differentiation of the cells during development and wound healing (Mei & Xiong). It has been implicated through in vivo and in vitro studies that heregulin-beta 1/ErbB signaling is crucial for multiple aspects of cardiovascular development and protects the heart from ischemic injury (Odiete et al.). Heregulin-beta 1 also promotes invasiveness and metastasis of breast cancer cells (Hutcheson et al.). It has also been shown that heregulin-beta 1 has role a in the growth and maintenance of human embryonic stem cells (Wang et al.).

Product Information

Alternative Names: Acetylcholine receptor-inducing activity, ARIA, Breast cancer cell differentiation factor p45, Glial growth factor, Heregulin Neu differentiation factor, HRG, HRG1, HRG1-beta 1, Neuregulin-1, NRG1, NRG1-beta 1, Sensory and motor neuron-derived factor

Accession Number: Q02297-6

Amino Acid Sequence: SHLVKCAEKE KTFCVNGGEC FMVKDLSNPS RYLCKCPNEF TGDRQCQNYVM ASFYKHLGIE FMEAE

Predicted Molecular Mass: 7.5 kDa

Species: Human

Cross Reactivity: Mouse, Rat

Formulation: Lyophilized from a sterile-filtered solution in phosphate-buffered saline.

Source: CHO

Specifications

Activity: The specific activity is $\geq 1 \times 10^7$ units/mg ($EC_{50} \leq 0.1$ ng/mL) as determined by a cell proliferation assay using human MCF-7 cells.

Purity: $\geq 95\%$

Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

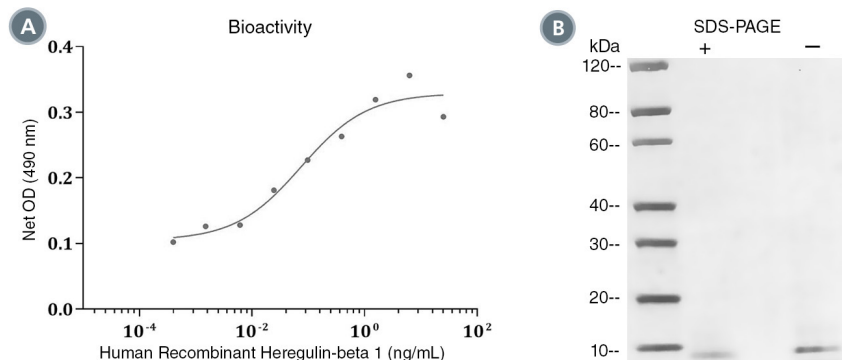
Storage: Store at -80°C.

Stability: Stable as supplied for 12 months from date of receipt.

Preparation: Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 week or at -20°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant Heregulin-beta 1 was tested by its ability to promote the proliferation of MCF-7 cells. Cell proliferation was measured using a fluorometric assay method. The EC₅₀ is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC₅₀ in the above example is less than 0.1 ng/mL.

(B) 2 µg of Human Recombinant Heregulin-beta 1 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant Heregulin-beta 1 has a predicted molecular mass of 7.5 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

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- Mei L & Xiong W-C. (2008) Neuregulin 1 in neural development, synaptic plasticity and schizophrenia. *Nat Rev Neurosci* 9(6): 437–52.
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- Wang L et al. (2007) Self-renewal of human embryonic stem cells requires insulin-like growth factor-1 receptor and ERBB2 receptor signaling. *Blood* 110(12): 4111–9.

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