

Cytokines

Human Recombinant GDF-5



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Growth differentiation factor 5

Catalog # 78111
78111.1

50 µg
100 µg

Product Description

Growth differentiation factor 5 (GDF-5) is a member of the bone morphogenetic protein (BMP) subclass of the transforming growth factor beta (TGF-β) superfamily. It binds a receptor complex comprising BMPR1B and BMPR2, which then activates the SMAD signaling pathway (Carreira et al.; Nishitoh et al.; Osório et al.). GDF-5 enhances chondrogenic differentiation of mesenchymal stem cells, skeletogenesis, and dendrite growth during development (Coleman et al.; Francis-West et al.). Studies in rat demonstrated that GDF-5 regulates patterning, neurogenesis, astroglionesis, and neuronal specification (Gajavelli et al.; Kriegstein et al.; O'Keeffe et al.).

Product Information

Alternative Names: BMP-14, Bone morphogenetic protein 14, CDMP-1, Growth differentiation factor 5
Accession Number: P43026
Amino Acid Sequence: MAPLATRQGK RPSKNLKARC SRKALHVNFK DMGWDDWIIA PLEYEAFHCE GLCEFPLRSH LEPTNHAVIQ TLMNSMDPES TPPTCCVPTR LSPISILFIDSA NNVVYKQY EDMVVESCGC R
Predicted Molecular Mass: 13.7 kDa monomer; 27.4 kDa dimer
Species: Human
Cross Reactivity: Mouse
Formulation: Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source: E. coli

Specifications

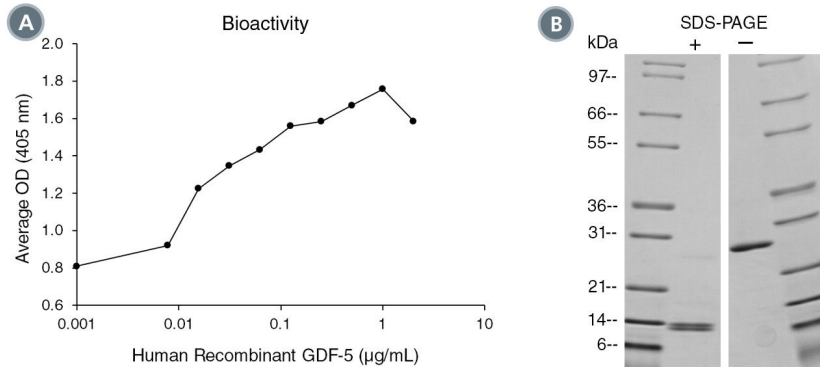
Activity: The specific activity is $\geq 8.3 \times 10^2$ units/mg ($EC_{50} \leq 1.2 \mu\text{g/mL}$) as determined by alkaline phosphatase activity induced in ATDC-5 cells.
Purity: $\geq 95\%$
Endotoxin Level: Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage: Store at -20°C to -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 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant GDF-5 was tested by its ability to induce alkaline phosphatase production in ATDC-5 cells. Alkaline phosphatase production was measured after 63 hours using a fluorometric assay method. The EC₅₀ is defined as the effective concentration of the growth factor at which alkaline phosphatase activity is at 50% of maximum. The EC₅₀ in the above example is 0.017 µg/mL.

(B) 1 µg of Human Recombinant GDF-5 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant GDF-5 has a predicted molecular mass of 27.4 kDa (13.7 kDa per monomer).

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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