

Cytokines

Human Recombinant IGF-I



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Insulin-like growth factor 1

Catalog # 78022.1
78022

100 µg
500 µg

Product Description

Insulin-like growth factor 1 (IGF-I) is a polypeptide that belongs to the family of insulin-like growth factors that are similar in molecular structure to proinsulin. IGF-I binds to the IGF-I receptor and is a potent activator of the PI3K/AKT pathway and also activates ERK1/2 signaling. IGF-I is required for embryonic development, and it is produced mainly in the liver in response to a hepatocyte growth hormone. In the absence of insulin, IGF-I is necessary for the maintenance of human pluripotent stem cells (Wang et al.). Together with IL-3, IGF-I stimulates differentiation and proliferation of myeloid cells and has been shown to regulate lymphopoiesis by stimulating proliferation and differentiation of T and B cells in lymphoid organs (Heemskerk et al.).

Product Information

Alternative Names: IBP1, IGF-IA, IGF-IB, IGF1A, Insulin-like growth factor 1, Mechano growth factor, MGF, Somatomedin C
Accession Number: P05019
Amino Acid Sequence: GPETLCGAEL VDALQFVCGD RGFYFNKPTG YGSSSRRAPQ TGIVDECCFR SCDLRRLEMY CAPLKPAKSA
Predicted Molecular Mass: 7.7 kDa
Species: Human
Cross Reactivity: Mouse, Rat
Formulation: Lyophilized after dialysis against phosphate-buffered saline.
Source: E. coli

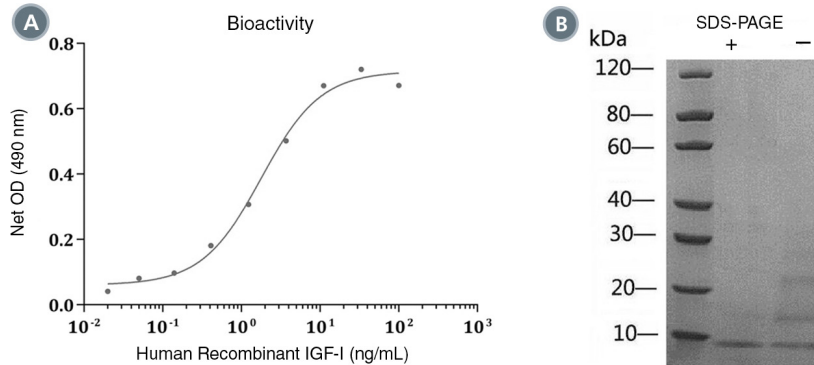
Specifications

Activity: The specific activity is $\geq 2 \times 10^5$ units/mg ($EC_{50} \leq 5$ ng/mL) as determined by a cell proliferation assay using FDC-P1 cells.
Purity: $\geq 95\%$
Endotoxin Level: Measured by kinetic Limulus amoebocyte 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. As a general guide, do not store at 2 - 8°C for more than 2 weeks or at -20°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant IGF-I was tested by its ability to promote the proliferation of FDC-P1 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 5 ng/mL.

(B) 2 µg of Human Recombinant IGF-I was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IGF-I has a predicted molecular mass of 7.7 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

- Heemskerk VH et al. (1999) Insulin-like growth factor-1 (IGF-1) and growth hormone (GH) in immunity and inflammation. *Cytokine Growth Factor Rev* 10(1): 5–14.
- 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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