

Cytokines

Human Recombinant IGFBP-4



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Catalog # 78164
78164.1

Insulin-like growth factor-binding protein 4

10 µg
50 µg

Product Description

Insulin-like growth factor-binding protein 4 (IGFBP-4) inhibits the actions of IGF-I and IGF-II. The distribution of IGFBP-4 in tissues is dependent on its glycosylation state, however it preferentially targets connective tissue (Firth & Baxter; Qin et al.). IGFBP-4 is also produced in liver, adrenal glands, Leydig cells, developing embryos, spinal cord, and thymic cortex. IGFBP-4 inhibits WNT/ β -catenin signaling, which downregulates prostate cancer proliferation (Zhu et al.). In vitro studies suggest that IGFBP-4 inhibits proliferation of neuroblastoma and glioma, while promoting bone loss in osteosarcoma and multiple myeloma (Durai et al.).

Product Information

Alternative Names: Colon cancer cell growth factor, HT29-IGF-BP, IBP-4, Insulin-like growth factor binding protein 4
Accession Number: P22692
Amino Acid Sequence: DEAIHCPPCS EEKLARCRPP VGCEELVREP GCGCCATCAL GLGMPCGVYT PRCGSGRLRCY PPRGVEKPLH TLMHGQGVCM ELAEIEAIQE SLQPSDKDEG DHPNNSFSPC SAHRRRCLQK HFAKIRDRTS SGGKMKVNGA PREDARPVPQ GSCQSELHRA LERLAASQSR THEDLYIPI PNCDRNGNFH PKQCHPALDG QRGKWCVDR KTGVKLPGGGL EPKGELDCHQ LADSFREHHH HHH
Predicted Molecular Mass: 26.8 kDa
Species: Human
Cross Reactivity: Reported to be species-specific
Formulation: Lyophilized after dialysis against phosphate-buffered saline.
Source: HEK293

Specifications

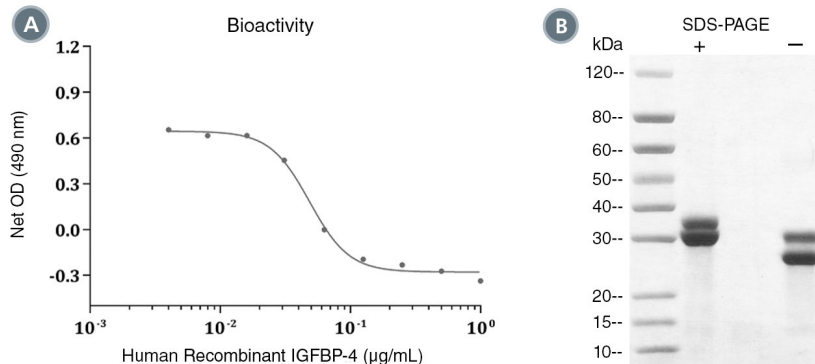
Activity: The specific activity is $\geq 2 \times 10^4$ units/mg ($EC_{50} \leq 0.05$ µg/mL) as determined by a bioassay using FDC-P1 cells in the presence of 15 µg/mL of IGF-II.
Purity: $\geq 95\%$
Endotoxin Level: Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

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 or phosphate-buffered saline 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 to -80°C for more than 2 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant IGFBP-4 was tested by its ability to inhibit IGF-II induced 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 example above is less than 0.05 µg/mL.

(B) 5 µg of Human Recombinant IGFBP-4 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IGFBP-4 has a predicted molecular mass of 26.8 kDa.

Related Products

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References

- Durai R et al. (2006) Biology of insulin-like growth factor binding protein-4 and its role in cancer (review). *Int J Oncol* 28(6): 1317–25.
- Firth SM & Baxter RC. (2002) Cellular actions of the insulin-like growth factor binding proteins. *Endocr Rev* 23(6): 824–54.
- Qin X et al. (1998) Structure-function analysis of the human insulin-like growth factor binding protein-4. *J Biol Chem* 273(36): 23509–16.
- Zhu W et al. (2008) IGFBP-4 is an inhibitor of canonical Wnt signalling required for cardiogenesis. *Nature* 454(7202): 345–9.

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