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Product Information

Insulin-Like Growth Factor Binding Protein-3 (IGFBP-3)

Human, Recombinant

Expressed in mouse NSO cells

Product Number **I 5278**

Product Description

Insulin-Like Growth Factor Binding Protein-3 (IGFBP-3) is a member of the superfamily of insulin-like growth factor (IGF) binding proteins which include six high-affinity IGF binding proteins (IGFBP) and at least four low-affinity binding proteins referred to as IGFBP related proteins (IGFBP-rP). The IGFBP members are cysteine-rich proteins with conserved cysteine residues, clustered in the N-terminal and C-terminal regions of the molecule. Human IGFBP-3 is the major IGF binding protein in plasma where it exists in a ternary complex with IGF-I or IGF-II and an acid-labile subunit. IGFBPs hold a central position in IGF ligand-receptor interactions through influences on both the bioavailability and distribution of IGFs in the extracellular environment.¹ IGFBP-3 can modulate the mitogenic and metabolic effects of the insulin-like growth factors (IGFs).

Insulin-Like growth factor binding protein-3 (IGF Binding Protein-3, IGFBP-3) is expressed in multiple tissues. The highest expression level is found in the non-paranchymal cells of the liver. The expression levels are higher during extrauterine life and peak during puberty. Insulin-like growth factors (IGFs) and IGF binding proteins (IGFBPs) play important roles in cell growth and differentiation.² IGFBP-3 is one of the factors in serum that is responsible for high-serum-induced apoptosis in PC-3 cells, a prostate cancer cell line.³ IGFBP-3 is important in controlling glucose homeostasis with increased urinary levels in type I diabetes with persistent microalbuminuria.⁴

Mature recombinant human IGFBP-3, expressed in a mouse myeloma cell line NSO, has a cDNA sequence encoding the mature human IGFBP-3 protein⁵ and is fused to the signal peptide of CD33. Mature recombinant human insulin-like growth factor binding protein-3 contains 265 amino acid residues and has a calculated molecular mass of approximately 29 kDa. Met 17 from the CD33 signal peptide is retained in the mature human recombinant IGFBP-3. As a result of glycosylation, the recombinant protein migrates to 41 kDa.

Reagent

Insulin-Like Growth Factor Binding Protein-3 (IGFBP-3) is lyophilized from a 0.2 μ m filtered solution in 30% acetonitrile and 0.1% trifluoroacetic acid (TFA).

Storage/Stability

Store at -20°C . Upon reconstitution, store at $2-8^{\circ}\text{C}$ for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended.

Reconstitution

Reconstitute the contents of the vial using sterile phosphate buffered saline containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 25 μ g/ml.

Product Profile

IGFBP-3 is measured by its ability to inhibit the biological activity of recombinant human IGF-I or recombinant human IGF-II on MCF-7 cells.⁶

The ED₅₀ for this effector is typically 0.05-0.15 µg/ml in the presence of 14 ng/ml recombinant human IGF-II.

The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Endotoxin: < 1.0 endotoxin units (EU)/µg of IGFBP-3, determined by the LAL method

References

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