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ProductInformation

Insulin-Like Growth Factor Binding Protein-5 (IGFBP-5)
Mouse, Recombinant
Expressed in mouse NSO cells

Product Number **I 3782**

Product Description

Insulin-like Growth Factor Binding Protein-5 (IGFBP-5) is produced from a DNA sequence encoding the mature mouse IGFBP-5 protein[1] fused to the signal peptide of CD33. Mature mouse IGFBP-5 has a calculated molecular mass of 28.9 kDa. As a result of glycosylation, the recombinant protein contains at least three bands migrating with apparent molecular weights ranging from 28-38 kDa in SDS-PAGE under reducing conditions. Mouse, human, and rat IGFBP-5 share approximately 97% amino acid sequence identity.

Insulin-like growth factor binding protein-5 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 amino-terminal and the carboxy-terminal regions of the molecule.

IGFBPs hold a central position in IGF ligand-receptor interactions through influences on both the bioavailability and distribution of IGFs in the extracellular environment.[2] IGFBPs will either inhibit or enhance the biological activities of IGF or act in an IGF-independent manner. Post-translational modification of IGFBPs, including phosphorylation and proteolysis, will modify the affinities of the binding proteins for IGF and may indirectly regulate IGF actions.[3]

Insulin-like growth factor binding protein-5 is expressed in fibroblasts, myoblasts, and osteoblasts. It is the predominant IGFBP found in bone extracts. IGFBP-5 has a strong affinity for hydroxyapatite (calcium phosphate hydroxyapatite), allowing it to bind to bone cells. When IGFBP-5 is bound to extracellular matrix (ECM), it is protected from proteolysis and potentiates IGF activity, but when IGFBP-5 is soluble, it is cleaved to a biologically inactive 21 kDa fragment.

Reagents

Recombinant Mouse Insulin-Like Growth Factor Binding Protein-5 (IGFBP-5) is supplied as approximately 25 µg of protein lyophilized from a 0.2 µm filtered solution in 30% acetonitrile and 0.1% TFA containing 1.25 mg of bovine serum albumin.

Reconstitution

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 10 µg/ml.

Storage/Stability

Store at –20 °C.
Upon reconstitution, store at 2 °C to 8 °C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

Product Profile

Insulin-Like Growth Factor Binding Protein-5 is measured by its ability to inhibit the biological activity of recombinant mouse IGF-II on MCF-7 cells.[4]

The ED_{50} for this effect is typically 0.5-2.5 µg/ml in the presence of 30 ng/ml recombinant mouse IGF-II.

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

Endotoxin level is <1.0 endotoxin units/µg cytokine as determined by the LAL (Limulus amebocyte lysate) method.

References

1. James, P. L., et al., J. Biol. Chem., **268**, 22305-22312 (1993).
2. Kelley, K. M., et al., Int. J. Biochem. Cell Biol., **28,** 619-637 (1996).
3. Jones, J. I., and Clemmons, D. R., Endocr. Rev., **16**, 3 (1995).
4. Karey, K. P., and Sirbasku, D. A., Cancer Re., **48,** 4083-4092 (1988).

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