Datasheet

Cat. No. PH2054

Recombinant Human IGFBP3

Information

Accession #	P17936
Alternate Names	growth hormone-dependent binding protein; IBP-3; IBP3BP-53; IGF-binding protein 3;IGFBP-3
Source	Human embryonic kidney cell, HEK293-derived human IGFBP3 protein
Protein sequence	Gly28-Lys291
M.Wt	28.7 kDa
Appearance	Solution protein
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. - 3 years from date of receipt, -20 to -70°C as supplied.
Concentration	0. 2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	The EC50 for this effect is 6-14 ng/mL.. Measured by its ability to inhibit the biological activity of IGF-I or IGF-II on MCF-7 human breast cancer cells.
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	<0.010 EU per 1 ug of the protein by the LAL method.

Description

Insulin-like growth factor binding protein-3 (IGFBP-3) is one of six members of the insulinlike growth factor (IGF) binding protein superfamily which function to modulate the biological activity of IGF [1]. Human IGFBP-3 is the major binding protein of IGF where it exists in circulation as a ternary complex with the acid-labile subunit (ALS) [2]. Like other IGFBP members, human IGFBP-3 includes a cysteine-rich C-terminal domain, a highly variable central linker domain, and another N-terminal cysteine-rich domain [2, 3]. Human IGFBP-3 cDNA encodes a 291 amino acid (aa) precursor protein with a 27 aa signal peptide that is processed to generate the 264 aa mature protein. Mature human IGFBP-3 shares 82% aa sequence identity with both mouse and rat IGFBP-3. Post-translational glycosylation and phosphorylation of IGFBP-3 modifies the affinities of the binding protein. Proteolysis of IGFBP-3 by tissue

plasminogen activator (tPA), a disintegrin and metaloproteases (ADAMs), and prostate specific antigen (PSA) contributes to IGFBP-3 degradation or a reduction in its affinity for IGF [4-6]. The majority of soluble IGFBP-3 found in circulation is secreted from hepatic non-parenchymal cells. IGFBP-3 expression can be modulated by p53 as well as by various cytokines and growth factors [7, 8]. In addition to its role in stabilizing and transporting circulating IGF, IGFBP-3 has been shown to potentiate EGF-EGFR-mediated cell growth through the activation of sphingosine kinase1 (SPHK1) and sphingosin-1-phosphate (S1P) [9, 10]. IGFBP-3 has also been shown to modulate adipogenesis [11]. Binding of IGFBP-3 to non-IGF-related ligands has been shown to regulate TGF-beta signaling, DNA damage, apoptosis, autophagy, and gene transcription [12]..

Reference

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