

Product Specification Sheet

Recombinant Human Insulin Binding Protein 1 (IGFBP1) Protein

Cat. IGFBP15-R-10 Recombinant Human Insulin Like Growth Factor Binding Protein-1 (IGFBP-1) protein
SIZE: 10 ug

The insulin like growth factors (IGFs) are the major growth-promoting factors in the plasma. IGFs are secreted by a variety of cells and exert a multitude of effects on cellular survival, growth and differentiation. The A and B domains of IGFs are identical to insulin. IGF initiates their biological action through binding to the type IGF receptor (IGF-1R), a heterotrimeric protein complex with a tyrosine kinase activity. The IGF-IIR lacks the kinase activity and is actually identical to the mannose-6-phosphate receptor. Unlike most other peptide hormones, IGFs are complexed with specific binding proteins in the plasma known **IGF Binding proteins (IGFBPs)**. At least 6 related IGFBPs (**IGFBP1-6**) have been well characterized. Recently, **IGFBP-7/Mac25/prostacyclin-stimulating factor (PSF)/tumor adhesion factor (TAF)** was originally identified as a cDNA derived from leptomeninges. These proteins are present in plasma in high concentration as compared to the membrane IGFs. Therefore, IGFBPs have the potential to modulate the IGF action. IGFBPs have been shown to either inhibit or stimulate the IGF effects. The primary structures of mammalian IGFBPs appear to contain three distinct domains of roughly equivalent sizes: the conserved N-terminal domain, the highly variable mid region, and the conserved C-terminal domain. Human IGFBPs share approximately 36% identity. Recently several groups of cysteine-rich proteins with discrete, but striking, structural and functional similarities to the IGFBPs. This has led to the proposal of an IGFBP superfamily, comprised of the IGFBPs and these **IGFBP-related proteins (IGFBP-rP1-9)**.

IGFBP1 is a member of the insulin-like growth factor binding protein (IGFBP) family and encodes a protein with an IGFBP domain and a thyroglobulin type-I domain. The protein binds both insulin-like growth factors (IGFs) I and II and circulates in the plasma. Binding of this protein prolongs the half-life of the IGFs and alters their interaction with cell surface receptors. Alternate transcriptional splice variants, encoding different isoforms, have been characterized

IBP-1, IGF-Binding Protein 1, AFBP, PP12, IGF-BP25, hIGFBP-1, IGFBP-1

Source of Antigen and Antibodies

Human IGFBP-1 protein (mature protein 218 aa, 29 kda) was expressed in NSO cells and purified (>95%). It is supplied in 10 mM HCL in powder form. Working dilution should be made in PBS, pH 7.4 containing 0.1% BSA or HSA (free from IGFII) at 10 ug/ml or higher.

IGFBP protein is stable for at least 6-months at -20oC or below. Store reconstituted protein in suitable size aliquots at -20oC or below for up to 3-months without significant loss of activity.

Endotoxin level: Purified mouse IGFBP-1 has very low Endotoxin level (<1 EU/ug protein).

Biological activity: IGFBP-1 activity was determined by measuring rmlGF-I stimulated proliferation of NUC-1 cells (ED50 ~100 ng/ml Inhibition of serum-induced stimulation of DNA synthesis in chick embryo fibroblast primary cultures: IC₅₀ (1% serum) ~300 ng/ml).

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Shipping: 4oC for solutions and room temp for powder.

General References: (1) Agarwal N et al (1991) Exp. Eye. Res. 52, 549-561; Zapf J et al (1990) JBC 265, 14892-14898; Binkett C et al (1989) EMBO J. 8, 2497-2502; Ehreborg E et al (1991) BBRC 176, 1250-1255; Binkert C et al (1992) Mol. Endocrinol. 6, 826-836; Hwa V et al (1999) Endocrine Rev. 20, 761-787 (review).

*This product is for in vitro research use only.

Related items

IGFBP-1-7 antibodies, IGFBP-1 ELISA kit
IGFBP1-7 recombinant proteins

IGFBP15-R-10 80327A