

Product Specification Sheet

Recombinant Human Insulin Binding Protein 4 (IGFBP-4) Protein

Cat. IGFBP45-R-10 Recombinant human Insulin Like Growth Factor Binding Protein-4 (IGFBP-4) 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 (**IGFBP-1-6**) 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.

Insulin-like growth factor binding protein-4 (IGFBP-4, 22-237 aa mature protein, protein accession # P22692) is expressed in multiple tissues including adrenal, testis, spleen, heart, lung, kidney, liver, stomach, hypothalamus, and brain cortex. High expression levels are found in the non-paranchymal cells of the liver.4 IGFBP-4 is the predominant IGFBP expressed by human osteoblast-like cells and is also expressed in skin fibroblasts.5

Protein name Insulin-like growth factor-binding protein 4
Synonyms IGFBP-4; IBP-4, IGF-binding protein 4, IBP4
Gene name Name: IGFBP4
FUNCTION: IGF-binding proteins prolong the half-life of the IGFs and have been shown to either inhibit or stimulate the growth promoting effects of the IGFs on cell culture. They alter the interaction of IGFs with their cell surface receptors.
SUBUNIT: Binds IGF2 more than IGF1.
SUBCELLULAR LOCATION: Secreted.
SIMILARITY: Contains 1 IGFBP N-terminal domain.
SIMILARITY: Contains 1 thyroglobulin type-1 domain.

Source of Antigen and Antibodies

Human IGFBP-4 protein (mature protein 22-258 aa, ~30 kDa) was expressed as human CD33 signal peptide at the N-terminus in NSO cells and purified (>95%). Recombinant proteins migrates as 32 kDa and 25 kDa protein under reducing and non-reducing conditions. It is supplied in 30% acetonitrile/0.1% TFA in powder form (see lot sp concn on the vial). 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 -20°C or below. Store reconstituted protein in suitable size aliquots at -20°C or below for up to 3-months without significant loss of activity.

Endotoxin level: Purified mouse IGFBP-4 has very low Endotoxin level (<1 EU/ug protein).

Biological activity: IGFBP-4 activity was determined by measuring rhIGF-I stimulated proliferation of MCF-7 cells.

Storage

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

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

Stability: 6-12 months at -20°C or below.

Shipping: 4°C for solutions and room temp for powder.

General References: (1) Latour D (1990) Mol. Endocrinol. 4, 1806; Shimasaki S (1990) Mol Endocrinol. 4, 1451; Kiefer MC (1991) JBC 266, 9043

*This product is for in vitro research use only.

Related items

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

IGFBP45-R-10

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India Contact:

Life Technologies (India) Pvt. Ltd.

306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com