

## Product Specification Sheet

### Recombinant Human Insulin Binding Protein 5 (IGFBP-5) Protein

**Cat.** IGFBP55-R-10      Recombinant human Insulin Like Growth Factor Binding Protein-5 (IGFBP-5) 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.

Human IGFBP-5 is a 252-aa mature protein that is expressed by fibroblasts, myoblasts and osteoblasts, making it the predominant IGFBP found in bone extracts. IGFBP-5 has a strong affinity for hydroxyapatite, allowing it to bind to bone cells. When bound to extracellular matrix, IGFBP-5 is protected from proteolysis and potentiates IGF activity, but when it is soluble, IGFBP-5 is cleaved to a biologically inactive 21 kDa fragment.

Protein name Insulin-like growth factor-binding protein 5  
Synonyms IGFBP-5, IBP-5, IGF-binding protein 5, IBP5  
Gene name Name: IGFBP5  
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.  
SUBCELLULAR LOCATION: Secreted.  
TISSUE SPECIFICITY: Osteosarcoma, and at lower levels in liver, kidney and brain.

### Source of Antigen and Antibodies

Human IGFBP-5 protein (~29 kDa) was expressed in E. coli and purified (>95%). It is supplied in 10mM citrate buffer pH 3.0. (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-5 has very low Endotoxin level (<1 EU/ug protein).

**Biological activity:** IGFBP-55 activity was determined by measuring rhIGF-II mediated inhibition of MCF-7 proliferation (ED50 ~0.3 ug/ml in the presence of 15 ng/ml IGFII).

### 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) Kiefer MC (1991) BBRC 176, 219-225; Shimasaki S (1991) JBC 266, 10646-10653; Address DL (1991) BBRC 176, 213-218; Kalus WE (1998) EMBO J 17, 6558-6572

\*This product is for in vitro research use only.

### Related items

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

IGFBP55-R-10

80328A

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