

IGFBP-3 Protein, Human

Cat. No.:	HY-P7020
Synonyms:	rHuIGF-BP3; IBP-3; IGF-binding protein 3; IGFBP-3
Species:	Human
Source:	E. coli
Accession:	P17936 (G28-K291)
Gene ID:	3486
Molecular Weight:	Approximately 28.8 kDa

PROPERTIES

AA Sequence	<p> G A S S G G L G P V V R C E P C D A R A L A Q C A P P P A V C A E L V R E P G C G C C L T C A L S E G Q P C G I Y T E R C G S G L R C Q P S P D E A R P L Q A L L D G R G L C V N A S A V S R L R A Y L L P A P P A P G N A S E S E E D R S A G E V E S P S V S S T H R V S D P K F H P L H S K I I I I K K G H A K D S Q R Y K V D Y E S Q S T D T Q N F S S E S K R E T E Y G P C R R E M E D T L N H L K F L N V L S P R G V H I P N C D K K G F Y K K K Q C R P S K G R K R </p>
Biological Activity	The ED ₅₀ is <200 ng/mL as measured by serum free human MCF-7 cells, corresponding to a specific activity of >5.0 × 10 ³ units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Insulin-like Growth Factor-Binding Proteins (IGFBPs) modulate the actions of secreted insulin-like growth facts (IGFs) by binding to them and increase the IGF halflife in the extracellular milieu and circulation by sequestering them in this bound form. IGFBPs either enhance or inhibit IGF actions on target cells; the individual IGFBPs either inhibit or potentiate IGF
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effects on osteoblasts in bone^[1]. Insulin-like Growth Factor-Binding Protein 3 (IGFBP3) is involved in prolonging the half-life of the IGFs (from 12 minutes to 12 hours), inhibits interaction of IGFs with their cell surface receptors, as well as, it is a circulating reservoir of IGFs. Moreover, IGFBP3 functions in cancer reduction, by both IGF-dependent and IGF-independent mechanisms. IGFBP3 has been shown to reduce the risk of breast cancer in high doses. A high concentration of IGFBP3 prevents IGF1:IGF1R interaction and blocks the IGF1R tyrosine kinase activity, resulting in the inhibition of the formation of intracellular signaling cascades^[2].

REFERENCES

[1]. Richman C, et al. Recombinant human insulin-like growth factor-binding protein-5 stimulates bone formation parameters in vitro and in vivo. *Endocrinology*. 1999 Oct;140(10):4699-705.

[2]. Khodadadi E, et al. Cloning and expression of full-length human insulin-like growth factor binding protein 3 (IGFBP3) in the *Escherichia coli*. *Adv Biomed Res*. 2015 Mar 25;4:66.

Caution: Product has not been fully validated for medical applications. For research use only.

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