Data Sheet (Cat.No.TMPY-00836)

TargetMol

IGFBP-4 Protein, Human, Recombinant (His)

General Information

Synonyms:	HT29-IGFBP;IBP4;BP-4;IGFBP-4;insulin-like growth factor binding protein 4
Protein Construction:	A DNA sequence encoding the human IGFBP4 (NP_001543.2) precursor (Met 1-Glu 258) with a C-terminal polyhistidine tag was expressed. Predicted N terminal: Asp 22
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P22692
Molecular Weight:	27.4 kDa (predicted); 32 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	1. Measured by its ability to bind human IGF1 in functional ELISA. 2. Measured by its ability to bind human IGF2 in functional ELISA. 3. Measured by its ability to inhibit the biological activity of IGFI or IGFII on MCF7 human breast adenocarcinoma cells (Karey, K.P. et al. (1988) Cancer Research 48:4083.). The ED50 for this effect is typically 0.04-0.4 μg/mL in the presence of 14 ng/mL human IGFII.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Insulin-like growth factor-binding protein 4 (IGFBP-4) is a 24-kDa protein that binds insulin-like growth factor 1 (IGF-1) and IGF-2 with high affinity and inhibits IGF action in vitro. The Insulin-like growth factor-binding protein

also known as IGFBP serves as a carrier protein for Insulin-like growth factor 1. IGFBPs are distinct but are sharing regions with strong homology. All members of the IGFBP family bind IGF-I and IGF-II with about equal affinity. Insulin-like growth factor (IGF) binding proteins (IGFBPs) have been shown to either inhibit or enhance the action of IGF or act in an IGF-independent manner in the prostate. IGF-binding protein-4 (IGFBP-4) inhibits IGF-I action in vitro and is the most abundant IGFBP in the rodent arterial wall. Expression of IGFBP-4 mRNA in nontransgenic littermates was maximal in the liver and kidney. IGFBP-4 is a functional antagonist of IGF-I action on SMC. There is mounting evidence that the structure of the IGFBP proteins plays a key role in the regulation of IGF bioavailability, by modulating its molecular size, capillary membrane permeability, target tissue specificity, cell membrane adherence, and IGF affinity.

Reference

Wang J,et al.(1998) Overexpression of insulin-like growth factor-binding protein-4 (IGFBP-4) in smooth muscle cells of transgenic mice through a smooth muscle alpha-actin-IGFBP-4 fusion gene induces smooth muscle hypoplasia. Endocrinology. 139(5): 2605-14.

Chernausek SD,et al.(1995) Proteolytic cleavage of insulin-like growth factor binding protein 4 (IGFBP-4). Localization of cleavage site to non-homologous region of native IGFBP-4. J Biol Chem. 1995 May 12;270(19): 11377-82.

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