Data Sheet (Cat.No.TMPY-04513)

TargetMol

IGFBP-6 Protein, Rat, Recombinant (His)

General Information

Synonyms: insulin-like growth factor binding protein 6

Protein Construction: A DNA sequence encoding the rat Igfbp6 (NP_037236.1) (Met1-Gly226) was expressed with a polyhistidine tag at the C-terminus. Predicted N terminal: Ala 26

Species: Rat

Expression Host: HEK293 Cells

Accession: A6KCS9

Molecular Weight: 22.9 kDa (predicted)

QC Testing

Biological Activity: Measured by its ability to inhibit the biological activity of IGFII on MCF7 human breast adenocarcinoma cells. The ED50 for this effect is typically 0.6-3 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:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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 6 (IGFBP6) 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. IGFBP6 is directly downregulated by the beta-catenin/TCF complex in desmoid tumors, and imply a role for the IGF axis in the proliferation of desmoid tumors. 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

Denys H, et al. (2004) Identification of IGFBP-6 as a significantly downregulated gene by beta-catenin in desmoid tumors. Oncogene. 23(3): 654-64.

Bach LA. Insulin-like growth factor binding protein-6: the "forgotten" binding protein? Horm Metab Res. 31(2-3): 226-34.

Bach LA. IGFBP-6 five years on; not so 'forgotten'? Growth Horm IGF Res. 15(3): 185-92.