

Human 4E-BP1 / EIF4EBP1 Protein (His Tag)



Sino Biological
Biological Solution Specialist

Catalog Number: 10022-H07E

General Information

Gene Name Synonym:

4E-BP1; 4EBP1; BP-1; PHAS-I

Protein Construction:

A DNA sequence encoding the human 4EBP1 (NP_004086.1) (Ser 2-Ile 118) with a N-terminal polyhistidine tag was expressed.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 90 % as determined by SDS-PAGE

Endotoxin:

Please contact us for more information.

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met

Molecular Mass:

The secreted recombinant human 4EBP1 comprises 124 amino acids with a predicted molecular mass of 13.4 kDa. It migrates as an approximately 19 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 20mM Tris, 500mM NaCl, 10% glycerol

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

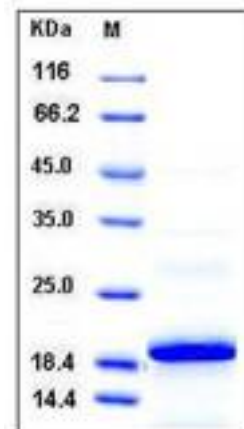
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

The translational suppressor eIF4E binding protein-1, 4E-BP1 functions as a key regulator in cellular growth, differentiation, apoptosis and survival. The Eif4ebp1 gene, encoding 4E-BP1, is a direct target of a transcription factor activating transcription factor-4 (ATF4), a master regulator of gene expression in stress responses. 4E-BP1 is characterized by its capacity to bind specifically to eIF4E and inhibit its interaction with eIF4G. Phosphorylation of 4E-BP1 regulates eIF4E availability, and therefore, cap-dependent translation, in cell stress. Binding of eIF4E to eIF4G is inhibited in a competitive manner by 4E-BP1. Phosphorylation of 4E-BP1 decreases the affinity of this protein for eIF4E, thus favouring the binding of eIF4G and enhancing translation. 4E-BP1 is important for beta-cell survival under endoplasmic reticulum (ER) stress. 4E-BP1 mediates the regulation of protein translation by hormones, growth factors and other stimuli that signal through the MAP kinase and mTORC1 pathways. Recently, 4E-BP1 was found to be a key factor, which converges several oncogenic signals, phosphorylates the molecules, and drives the downstream proliferative signals. Recent studies showed that high expression of phosphorylated 4E-BP1 (p-4E-BP1) is associated with poor prognosis, tumor progression, or nodal metastasis in different human cancers.

References

1. Azar R, *et al.* (2008) Phosphatidylinositol 3-kinase-dependent transcriptional silencing of the translational repressor 4E-BP1. *Cell Mol Life Sci.* 65(19): 3110-7.
2. Tominaga R, *et al.* (2010) The JNK pathway modulates expression and phosphorylation of 4E-BP1 in MIN6 pancreatic beta-cells under oxidative stress conditions. *Cell Biochem Funct.* 28(5): 387-93.
3. Ayuso MI, *et al.* (2010) New hierarchical phosphorylation pathway of the translational repressor eIF4E-binding protein 1 (4E-BP1) in ischemia-reperfusion stress. *J Biol Chem.* 285(45): 34355-63.

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