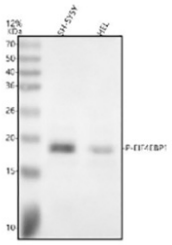
Phospho-eIF4EBP1 (pThr70) Antibody / EIF4EBP1 [clone 32E48] (FY13152)

Catalog No.	Formulation	Size
FY13152	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	32E48
Purity	Affinity chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	Q13541
Applications	Western Blot : 1:500-1:2000
Limitations	This Phospho-eIF4EBP1 (pThr70) antibody is available for research use only.



Western blot analysis of Phospho-eIF4EBP1 using anti-Phospho-eIF4EBP1 (pThr70) antibody. Electrophoresis was performed on a 12% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human SH-SY5Y whole cell lysates, Lane 2: human HEL whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Phospho-eIF4EBP1 (Thr70) antibody at 1:500 overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. The expected molecular weight of Phospho-eIF4EBP1 is ~17 kDa.

Description

Phospho-eIF4EBP1 (pThr70) antibody detects Eukaryotic translation initiation factor 4E binding protein 1 phosphorylated at threonine 70, encoded by the EIF4EBP1 gene. This protein is a central regulator of cap-dependent translation initiation, acting as a repressor by binding eIF4E and preventing assembly of the eIF4F complex. Phosphorylation of eIF4EBP1 at Thr70 reduces its affinity for eIF4E, releasing the inhibition and promoting translation. Phospho-eIF4EBP1 (pThr70) antibody provides researchers with a selective reagent for monitoring mTOR pathway activity and protein synthesis regulation.

Eukaryotic translation initiation factor 4E binding protein 1 is one of several eIF4E binding proteins that control translation initiation in response to nutrient, growth factor, and stress signals. Research using Phospho-eIF4EBP1 (Thr70) antibody has demonstrated that Thr70 phosphorylation is a key regulatory step mediated by mTOR complex 1. This modification, along with phosphorylation at Thr37, Thr46, and Ser65, sequentially decreases binding to eIF4E. The cumulative effect is activation of translation initiation and enhanced protein synthesis, particularly for transcripts encoding growth-promoting and survival proteins.

Dysregulation of EIF4EBP1 phosphorylation has been linked to cancer, metabolic disease, and neurodegeneration. Studies with Phospho-eIF4EBP1 (pThr70) antibody have shown that hyperactivation of mTOR signaling leads to persistent phosphorylation of eIF4EBP1, contributing to uncontrolled translation and oncogenesis. In contrast, reduced phosphorylation in stress conditions suppresses translation, conserving resources. Because translation initiation is a central control point in gene expression, phospho-eIF4EBP1 serves as a valuable biomarker of cellular signaling status.

In oncology, high levels of phosphorylated eIF4EBP1 correlate with tumor progression, therapeutic resistance, and poor prognosis. Research using Phospho-eIF4EBP1 (pThr70) antibody has confirmed that cancer cells exploit mTOR-driven phosphorylation to promote protein synthesis needed for growth and survival. Inhibitors of mTOR restore eIF4EBP1 binding to eIF4E, suppressing translation and reducing tumor growth. These findings make detection of phosphorylation at Thr70 essential in both basic research and therapeutic monitoring.

Phospho-eIF4EBP1 (pThr70) antibody is widely applied in western blotting, immunohistochemistry, and immunofluorescence. Western blotting identifies phosphorylation state-specific bands, immunohistochemistry reveals phosphorylation in tumor tissues, and immunofluorescence demonstrates dynamic responses to nutrient and drug treatments. These methods make Phospho-eIF4EBP1 (pThr70) antibody a critical reagent for investigating translational control.

By supplying validated Phospho-eIF4EBP1 (pThr70) antibody reagents, NSJ Bioreagents supports studies of translation regulation, mTOR signaling, and cancer biology. Detection of phosphorylation at Thr70 provides a precise measure of how translation initiation is modulated in health and disease.

Application Notes

Optimal dilution of the Phospho-eIF4EBP1 (pThr70) antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Phospho-eIF4EBP1 (pT70) was used as the immunogen for the Phospho-eIF4EBP1 (pThr70) antibody.

Storage

Store the Phospho-eIF4EBP1 (pThr70) antibody at -20oC.