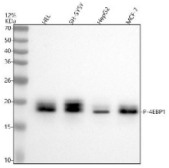
Phospho-eIF4EBP1 (pThr46) Antibody / Eukaryotic translation initiation factor 4E binding protein 1 [clone 32E52] (FY12420)

Catalog No.	Formulation	Size
FY12420	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, Mouse
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	32E52
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, Q13542, O60516
Applications	Western Blot : 1:500-1:2000 Immunohistochemistry : 1:50-1:200
Limitations	This Phospho-eIF4EBP1 (pThr46) antibody is available for research use only.



Western blot analysis of 4EBP1/EIF4EBP1/2/3(Phospho-T46/T46/T32) using anti-Phospho-eIF4EBP1 (pThr46) antibody. Electrophoresis was performed on a 12% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human HEL whole cell lysates, Lane 2: human SH-SY5Y whole cell lysates, Lane 3: human HepG2 whole cell lysates, Lane 4: human MCF-7 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-4EBP1/EIF4EBP1/2/3(Phospho-T46/T46/T32) 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. A specific band was detected for 4EBP1/EIF4EBP1/2/3(Phospho-T46/T46/T32) at approximately 18 kDa. The expected molecular weight of 4EBP1/EIF4EBP1/2/3(Phospho-T46/T46/T32) is at 18 kDa.

Description

Phospho-eIF4EBP1 (pThr46) antibody detects eukaryotic translation initiation factor 4E binding protein 1 when phosphorylated at threonine 46. EIF4EBP1 is encoded by the EIF4EBP1 gene and is part of a small family of translational repressors that also includes EIF4EBP2 and EIF4EBP3. These proteins function as regulators of cap dependent translation by binding to eIF4E and preventing assembly of the translation initiation complex. Phosphorylation of EIF4EBP1 at Thr46 and other regulatory sites causes its release from eIF4E, thereby promoting translation initiation.

Phospho-eIF4EBP1 (pThr46) antibody is widely applied in studies of mTOR signaling, translation control, and cancer biology. The mTOR pathway is a central regulator of cell growth, proliferation, and metabolism, and EIF4EBP1 phosphorylation is one of its key downstream events. By specifically detecting EIF4EBP1 phosphorylated at Thr46, this antibody provides a reliable marker of pathway activation and translational regulation.

The antibody is suitable for western blotting, immunohistochemistry, and immunofluorescence. In western blot assays, Phospho-eIF4EBP1 (Thr46) antibody identifies phosphorylated protein bands distinct from non phosphorylated forms, allowing quantification of activation states. Immunohistochemistry provides tissue level mapping of phosphorylation patterns, while immunofluorescence reveals subcellular localization of activated EIF4EBP1. These applications make the antibody valuable for monitoring mTOR activity across experimental models.

EIF4EBP1 phosphorylation at Thr46 is conserved among family members, and antibodies raised against this site may also detect EIF4EBP2 at Thr46 and EIF4EBP3 at Thr32. This cross reactivity can be useful in capturing broader regulation of translation initiation but should be considered in experimental design. By applying Phospho-eIF4EBP1 (pThr46) antibody, researchers can evaluate translational control across multiple EIF4EBP proteins.

Dysregulation of EIF4EBP1 phosphorylation is common in cancers, where hyperactivation of mTOR signaling drives uncontrolled growth and survival. Detection of phospho EIF4EBP1 is frequently used as a biomarker of therapeutic response to mTOR inhibitors. Beyond oncology, mTOR EIF4EBP1 signaling regulates metabolism, neuronal plasticity, and immune responses, expanding the relevance of this antibody to diverse research fields.

Phospho-eIF4EBP1 (pThr46) antibody provided by NSJ Bioreagents delivers reliable specificity for phosphorylated EIF4EBP1, enabling accurate monitoring of mTOR activity and translational regulation in health and disease.

Application Notes

Optimal dilution of the Phospho-eIF4EBP1 (pThr46) antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Phospho-eIF4EBP1/2/3 (T46+T46+T32) was used as the immunogen for the

Phospho-eIF4EBP1 (pThr46) antibody.

Storage

Store the Phospho-eIF4EBP1 (pThr46) antibody at -20oC.