

4E-BP1 (N-19): sc-6025

BACKGROUND

The translation of proteins from eukaryotic mRNA is initiated by the multi-subunit complex eIF-4F, which associates with the mRNA 5' cap structure. eIF-4E, a component of eIF-4F, is responsible for binding to the 5' cap structure and for the assembly of the eIF-4F complex. The regulatory protein 4E-BP1, also referred to as PHAS-I, inhibits eIF-4E function. Phosphorylation of 4E-BP1 by S6 kinase p70, MAP kinases or PKCs causes the disassociation of 4E-BP1 from eIF-4E, promoting translation. A protein that is functionally related to 4E-BP1, designated 4E-BP2, also associates with eIF-4E.

REFERENCES

1. Lin, T.A., et al. 1994. PHAS-I as a link between mitogen-activated protein kinase and translation initiation. *Science* 266: 653-656.
2. Rau, M., et al. 1996. A reevaluation of the cap-binding protein, eIF4E, as a rate-limiting factor for initiation of translation in reticulocyte lysate. *J. Biol. Chem.* 271: 8983-8990.

CHROMOSOMAL LOCATION

Genetic locus: EIF4EBP1 (human) mapping to 8p11.23; Eif4ebp1 (mouse) mapping to 8 A2.

SOURCE

4E-BP1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of 4E-BP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6025 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

4E-BP1 (N-19) is recommended for detection of 4E-BP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

4E-BP1 (N-19) is also recommended for detection of 4E-BP1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for 4E-BP1 siRNA (h): sc-29594, 4E-BP1 siRNA (m): sc-29595, 4E-BP1 shRNA Plasmid (h): sc-29594-SH, 4E-BP1 shRNA Plasmid (m): sc-29595-SH, 4E-BP1 shRNA (h) Lentiviral Particles: sc-29594-V and 4E-BP1 shRNA (m) Lentiviral Particles: sc-29595-V.

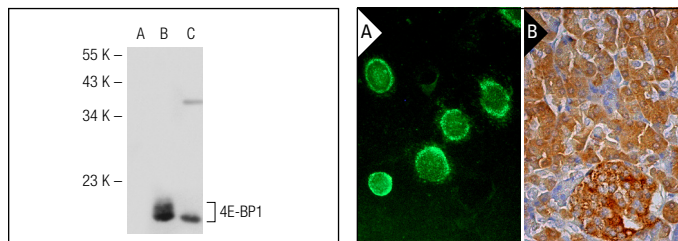
Molecular Weight of 4E-BP1: 21 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, HeLa nuclear extract: sc-2120 or 4E-BP1 (h): 293T Lysate: sc-116590.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



4E-BP1 (N-19): sc-6025. Western blot analysis of 4E-BP1 expression in non-transfected 293T: sc-117752 (A) and human 4E-BP1 transfected 293T: sc-116590 (B) whole cell lysates and HeLa nuclear extract (C).

4E-BP1 (N-19): sc-6025. Immunofluorescence staining of methanol-fixed HL-60 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells and Islets of Langerhans cells (B).

SELECT PRODUCT CITATIONS

1. Braun-Dullaeus, R.C., et al. 2001. Cell cycle protein expression in vascular smooth muscle cells *in vitro* and *in vivo* is regulated through phosphatidylinositol 3-kinase and mammalian target of rapamycin. *Arterioscler. Thromb. Vasc. Biol.* 21: 1152-1158.
2. Lindemann, S.W., et al. 2004. Neutrophils alter the inflammatory milieu by signal-dependent translation of constitutive messenger RNAs. *Proc. Natl. Acad. Sci. USA* 101: 7076-7081.
3. Rosner, D., et al. 2005. Rapamycin inhibits human in stent restenosis vascular smooth muscle cells independently of pRB phosphorylation and p53. *Cardiovasc. Res.* 66: 601-610.
4. Boukhettala, N., et al. 2010. Effects of essential amino acids or glutamine deprivation on intestinal permeability and protein synthesis in HCT-8 cells: involvement of GCN2 and mTOR pathways. *Amino Acids* 42: 375-383.
5. Coeffier, M., et al. 2011. Influence of leucine on protein metabolism, phosphokinase expression, and cell proliferation in human duodenum1, 3. *Am. J. Clin. Nutr.* 93: 1255-1262.
6. Wang, K., et al. 2011. Quercetin induces protective autophagy in gastric cancer cells: involvement of Akt-mTOR- and hypoxia-induced factor 1α-mediated signaling. *Autophagy* 7: 966-978.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

MONOS
Satisfaction
Guaranteed

Try **4E-BP1 (P-1): sc-9977** or **4E-BP1 (D-10): sc-514073**, our highly recommended monoclonal alternatives to 4E-BP1 (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **4E-BP1 (P-1): sc-9977**.