SANTA CRUZ BIOTECHNOLOGY, INC.

4E-BP1 (C-19): sc-6024

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of 4E-BP1 of mouse 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-6024 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

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

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.

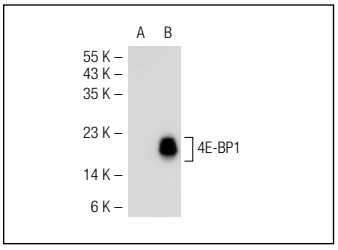
Molecular Weight of 4E-BP1: 21 kDa.

Positive Controls: 4E-BP1 (m): 293T Lysate: sc-118030, K-562 whole cell lysate: sc-2203 or HeLa nuclear extract: sc-2120.

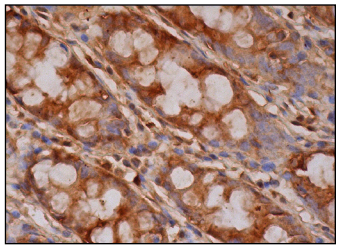
STORAGE

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

DATA



4E-BP1 (C-19): sc-6024. Western blot analysis of 4E-BP1 expression in non-transfected: sc-117752 (**A**) and mouse 4E-BP1 transfected: sc-118030 (**B**) 293T whole cell lysates.



4E-BP1 Antibody (C-19): sc-6024. Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Qiao, L., et al. 2001. Hepatitis B virus X protein increases expression of p21(Cip-1/WAF1/MDA6) and p27(Kip-1) in primary mouse hepatocytes, leading to reduced cell cycle progression. Hepatology 34: 906-917.
2. Razeghi, P., et al. 2003. Atrophic remodeling of the heart *in vivo* simultaneously activates pathways of protein synthesis and degradation. Circulation 108: 2536-2541.
3. Ijichi, C., et al. 2003. Branched-chain amino acids promote albumin synthesis in rat primary hepatocytes through the mTOR signal transduction system. Biochem. Biophys. Res. Commun. 303: 59-64.
4. Oshiro, N., et al. 2007. The proline-rich Akt substrate of 40 kDa (PRAS40) is a physiological substrate of mammalian target of Rapamycin complex 1. J. Biol. Chem. 282: 20329-20339.
5. Tomiya, T., et al. 2007. Leucine stimulates HGF production by hepatic stellate cells through mTOR pathway. Biochem. Biophys. Res. Commun. 358: 176-180.
6. Nishikawa, T., et al. 2007. Stimulation by glutamine and proline of HGF production in hepatic stellate cells. Biochem. Biophys. Res. Commun. 363: 978-982.
7. Gong, J., et al. 2009. Serine/threonine kinase Pim-2 promotes liver tumorigenesis induction through mediating survival and preventing apoptosis of liver cell. J. Surg. Res. 153: 17-22.

RESEARCH USE

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