SANTA CRUZ BIOTECHNOLOGY, INC.

4E-BP1 (P-1): sc-9977

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The translation of proteins from eukaryotic mRNA is initiated by the multisubunit 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.

CHROMOSOMAL LOCATION

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

SOURCE

4E-BP1 (P-1) is a mouse monoclonal antibody raised against full length 4E-BP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

4E-BP1 (P-1) is available conjugated to agarose (sc-9977 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-9977 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-9977 PE), fluorescein (sc-9977 FITC), Alexa Fluor® 488 (sc-9977 AF488), Alexa Fluor® 546 (sc-9977 AF546), Alexa Fluor® 594 (sc-9977 AF594) or Alexa Fluor® 647 (sc-9977 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-9977 AF680) or Alexa Fluor® 790 (sc-9977 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

4E-BP1 (P-1) is recommended for detection of 4E-BP1 of mouse, rat, human and porcine 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).

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, KNRK whole cell lysate: sc-2214 or NIH/3T3 whole cell lysate: sc-2210.

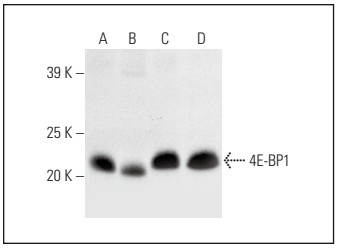
STORAGE

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

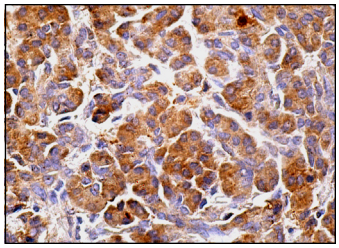
RESEARCH USE

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

DATA



4E-BP1 (P-1): sc-9977. Western blot analysis of 4E-BP1 expression in A-431 (**A**), K-562 (**B**), NIH/3T3 (**C**) and KNRK (**D**) whole cell lysates.



4E-BP1 (P-1): sc-9977. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Xu, G., et al. 2004. Pharmacogenomic profiling of the PI3K/PTEN-Akt-mTOR pathway in common human tumors. Int. J. Oncol. 24: 893-900.
2. Kao, C.L., et al. 2009. Rapamycin increases the p53/MDM2 protein ratio and p53-dependent apoptosis by translational inhibition of mdm2 in cancer cells. Cancer Lett. 286: 250-259.
3. Kodali, D., et al. 2011. Expression and phosphorylation of eukaryotic translation initiation factor 4E binding protein 1 in B-cell lymphomas and reactive lymphoid tissues. Arch. Pathol. Lab. Med. 135: 365-371.
4. Gallo, S., et al. 2014. Agonist antibodies activating the Met receptor protect cardiomyoblasts from cobalt chloride-induced apoptosis and autophagy. Cell Death Dis. 5: e1185.
5. Zheng, W., et al. 2016. Far upstream element-binding protein 1 binds the 3' untranslated region of PKD2 and suppresses its translation. J. Am. Soc. Nephrol. 27: 2645-2657.
6. Lu, J., et al. 2017. Tunneling nanotubes promote intercellular mitochondria transfer followed by increased invasiveness in bladder cancer cells. Oncotarget 8: 15539-15552.
7. Nie, X., et al. 2018. mTOR acts as a pivotal signaling hub for neural crest cells during craniofacial development. PLoS Genet. 14: e1007491.
8. Liu, P., et al. 2019. Wound healing potential of spirulina protein on CCD-986sk cells. Mar. Drugs 17: 130.
9. Kim, H.W., et al. 2020. Ascofuranone inhibits epidermal growth factor-induced cell migration by blocking epithelial-mesenchymal transition in lung cancer cells. Eur. J. Pharmacol. 880: 173199.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.