SANTA CRUZ BIOTECHNOLOGY, INC.

4E-BP1 (11G12C11): sc-81149

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 (11G12C11) is a mouse monoclonal antibody raised against a recombinant protein corresponding to the N-terminal 118 amino acids of 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 (11G12C11) is available conjugated to agarose (sc-81149 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-81149 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81149 PE), fluorescein (sc-81149 FITC), Alexa Fluor® 488 (sc-81149 AF488), Alexa Fluor® 546 (sc-81149 AF546), Alexa Fluor® 594 (sc-81149 AF594) or Alexa Fluor® 647 (sc-81149 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-81149 AF680) or Alexa Fluor® 790 (sc-81149 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

4E-BP1 (11G12C11) 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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: K-562 whole cell lysate: sc-2203, A-431 whole cell lysate: sc-2201 or HL-60 whole cell lysate: sc-2209.

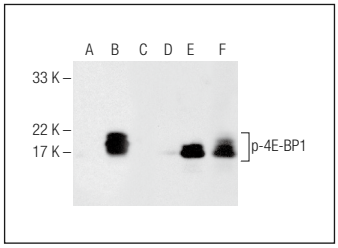
RESEARCH USE

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

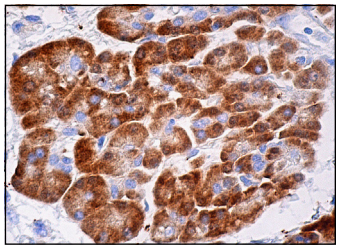
STORAGE

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

DATA



Western blot analysis of 4E-BP1 phosphorylation in non-transfected: sc-117752 (**A**,**D**), untreated human 4E-BP1 transfected: sc-116590 (**B**,**E**) and lambda protein phosphatase (sc-200312A) treated human 4E-BP1 transfected: sc-116590 (**C**,**F**) 293T whole cell lysates. Antibodies tested include p-4E-BP1 (62.Ser 65): sc-293124 (**A**,**B**,**C**) and 4E-BP1 (11G12C11): sc-81149 (**D**,**E**,**F**).



4E-BP1 (11G12C11): sc-81149. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplamsic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Laudanski, P., et al. 2009. Expression of selected tumor suppressor and oncogenes in endometrium of women with endometriosis. Hum. Reprod. 24: 1880-1890.
2. Carnevale, J., et al. 2013. SYK regulates mTOR signaling in AML. Leukemia 27: 2118-2128.
3. Nayananjalie, W.A., et al. 2015. Effect of early grain feeding of beef steers on postabsorptive metabolism. J. Anim. Sci. 93: 2439-2450.
4. Agergaard, J., et al. 2016. Light-load resistance exercise increases muscle protein synthesis and hypertrophy signaling in elderly men. Am. J. Physiol. Endocrinol. Metab. 312: E326-E338.
5. Demark-Wahnefried, W., et al. 2017. Presurgical weight loss affects tumour traits and circulating biomarkers in men with prostate cancer. Br. J. Cancer 117: 1303-1313.
6. Khan, M.W., et al. 2018. Inhibition of mTOR complexes protects cancer cells from glutamine starvation induced cell death by restoring Akt stability. Biochim. Biophys. Acta 1864: 2040-2052.
7 Yoder, P.S., et al. 2019. Effects of varying extracellular amino acid profile on intracellular free amino acid concentrations and cell signaling in primary mammary epithelial cells. J. Dairy Sci. 102: 8977-8985.
8. Das, H.K. and Hontiveros, S.S. 2020. Inhibition of p-mTOR represses transcription of PS1 and Notch 1-signaling. Front. Biosci. 25: 1172-1183.

PROTOCOLS

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