SANTA CRUZ BIOTECHNOLOGY, INC.

4E-BP3 (4-RY9): sc-134232

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The initiation of protein synthesis in eukaryotic cells is regulated by interactions between protein initiation factors and RNA molecules. These interactions are facilitated, in part, by the eukaryotic initiation factor 4 family (eIF4) of proteins that are involved in the early initiation of protein synthesis. 4E-BP3, also known as EIF4EBP3 (eukaryotic translation initiation factor 4E binding protein 3), is a 100 amino acid protein that belongs to the eIF4E-binding protein family. Highly expressed in heart, kidney, pancreas and skeletal muscle and present at lower levels in thymus and brain, 4E-BP3 interacts with eIF4E and, via this interaction, regulates eIF4E activity, specifically by preventing the incorporation of eIF4E into the eIF4 complex. 4E-BP3 is subject to post-translational phosphorylation and is encoded by a gene which maps to human chromosome 5.

REFERENCES

1. Poulin, F., et al. 1998. 4E-BP3, a new member of the eukaryotic initiation factor 4E-binding protein family. J. Biol. Chem. 273: 14002-14007.
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5. Poulin, F., et al. 2003. Gene fusion and overlapping reading frames in the mammalian genes for 4E-BP3 and MASK. J. Biol. Chem. 278: 52290-52297.
6. Joshi, B., et al. 2004. Characterization of mammalian eIF4E-family members. Eur. J. Biochem. 271: 2189-2203.
7. Tomoo, K., et al. 2005. Structural basis for mRNA CAP-binding regulation of eukaryotic initiation factor 4E by 4E-binding protein, studied by spectroscopic, X-ray crystal structural, and molecular dynamics simulation methods. Biochim. Biophys. Acta 1753: 191-208.
8. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 603483. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
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CHROMOSOMAL LOCATION

Genetic locus: EIF4EBP3 (human) mapping to 5q31.3.

SOURCE

4E-BP3 (4-RY9) is a mouse monoclonal antibody raised against recombinant 4E-BP3 protein of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

4E-BP3 (4-RY9) is recommended for detection of 4E-BP3 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for 4E-BP3 siRNA (h): sc-91863, 4E-BP3 shRNA Plasmid (h): sc-91863-SH and 4E-BP3 shRNA (h) Lentiviral Particles: sc-91863-V.

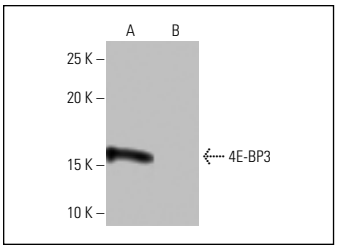
Molecular Weight of 4E-BP3: 15 kDa.

Positive Controls: human 4E-BP3 transfected 293T whole cell lysate.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



4E-BP3 (4-RY9): sc-134232. Western blot analysis of 4E-BP3 expression in human 4E-BP3 transfected (**A**) and non-transfected (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chen, Y., et al. 2019. Circular RNA circAGO2 drives cancer progression through facilitating HuR-repressed functions of AGO2-miRNA complexes. Cell Death Differ. 26: 1346-1364.
2. Yin, X., et al. 2019. TFE3 fusions escape from controlling of mTOR signaling pathway and accumulate in the nucleus promoting genes expression in Xp11.2 translocation renal cell carcinomas. J. Exp. Clin. Cancer Res. 38: 119.

STORAGE

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