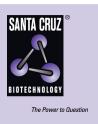
# SANTA CRUZ BIOTECHNOLOGY, INC.

# 4E-BP1 (FL): sc-4251



# BACKGROUND

The translation of proteins from eukaryotic mRNA is initiated by the multisubunit complex eIF4F, 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 12.4 kDa 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 fo 4E-BP1, designated 4E-BP2, also associates with eIF-4E.

#### REFERENCES

- Lin, T.A., Kong, X., Haystead, T.A., Pause, A., Belsham, G., Sonenberg, N. and Lawrence, J.C., Jr. 1994. PHAS-I as a link between mitogen-activated protein kinase and translation initiation. Science 266: 653-656.
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- Von Manteuffel, S.R., Gingras, A.C., Ming, X.F., Sonenberg, N. and Thomas, G. 1996. 4E-BP1 phosphorylation is mediated by the FRAP-p70s6k pathway and is independent of mitogen-activated protein kinase. Proc. Natl. Acad. Sci. USA 93: 4076-4080.

#### SOURCE

4E-BP1 (FL) is expressed in *E. coli* as a 21 kDa polyhistidine fusion protein corresponding to amino acids 1-117 representing full length 4E-BP1 of rat origin.

#### PRODUCT

4E-BP1 (FL) is purified from bacterial lysates by NI<sup>++</sup> affinity chromatography; supplied as 50 μg protein in PBS containing 5 mM DTT and 50% glycerol.

#### APPLICATIONS

4E-BP1 (FL) functions as a substrate for FRAP and MAP kinases; suitable as a Western blotting control for sc-6024, sc-6025 and sc-6936.

## SELECT PRODUCT CITATIONS

- Tabatabaian, F., Dougherty, K., Di Fulvio, M. and Gomez-Cambronero, J. 2010. Mammalian target of rapamycin (mTOR) and S6 kinase down-regulate phospholipase D2 basal expression and function. J. Biol. Chem. 285: 18991-19001.
- Jackman, S.R., Witard, O.C., Philp, A., Wallis, G.A., Baar, K. and Tipton, K.D. 2017. Branched-chain amino acid ingestion stimulates muscle myofibrillar protein synthesis following resistance exercise in humans. Front. Physiol. 8: 390.

#### **STORAGE**

Store at -20° C; stable for one year from the date of shipment.

## **RESEARCH USE**

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

# PROTOCOLS

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