# SANTA CRUZ BIOTECHNOLOGY, INC.

# elF4AIII (B-2): sc-365549



#### BACKGROUND

The eukaryotic translation factor 4A (eIF4A) is a member of DEA(D/H)-box RNA helicase family that couples ATP hydrolysis to RNA binding and duplex separation. eIF4A participates in the initiation of translation by unwinding secondary structure in the 5'-untranslated region of mRNAs and facilitating scanning by the 40 S ribosomal subunit for the initiation codon. eIF4AIII is a component of the exon junction complex (EJC) that assembles near exonexon junctions of mRNAs as a result of splicing. eIF4AIII, but not eIF4AI or eIF4AII, preferentially associates with spliced mRNA. eIF4AIII is found in the nucleus whereas eIF4AI and eIF4AII are found in the cytoplasm.

#### **CHROMOSOMAL LOCATION**

Genetic locus: EIF4A3 (human) mapping to 17q25.3; Eif4a3 (mouse) mapping to 11 E2.

#### SOURCE

elF4AIII (B-2) is a mouse monoclonal antibody raised against amino acids 1-50 mapping at the N-terminus of elF4AIII of human origin.

# PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

eIF4AIII (B-2) is available conjugated to agarose (sc-365549 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365549 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365549 PE), fluorescein (sc-365549 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365549 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365549 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365549 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365549 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365549 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365549 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

#### **APPLICATIONS**

elF4AIII (B-2) is recommended for detection of elF4AIII of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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 eIF4AIII siRNA (h): sc-44528, eIF4AIII siRNA (m): sc-77395, eIF4AIII shRNA Plasmid (h): sc-44528-SH, eIF4AIII shRNA Plasmid (m): sc-77395-SH, eIF4AIII shRNA (h) Lentiviral Particles: sc-44528-V and eIF4AIII shRNA (m) Lentiviral Particles: sc-77395-V.

Molecular Weight of elF4AIII: 47 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Raji whole cell lysate: sc-364236 or Hep G2 cell lysate: sc-2227.

## **STORAGE**

Store at 4° C, \*\*D0 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





elF4AIII (B-2): sc-365549. Western blot analysis of elF4AIII expression in K-562 (A), PC-12 (B), Raji (C) and Hep G2 (D) whole cell lysates. Detection reagent used: m-IgG  $\kappa$  BP-HRP: sc-516102.

elF4AIII (B-2): sc-365549. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

# SELECT PRODUCT CITATIONS

- Eifler, T.T., et al. 2015. Cyclin-dependent kinase 12 increases 3' end processing of growth factor-induced c-Fos transcripts. Mol. Cell. Biol. 35: 468-478.
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- Ryu, I., et al. 2019. eIF4A3 phosphorylation by CDKs affects NMD during the cell cycle. Cell Rep. 26: 2126-2139.e9.
- Jeong, K., et al. 2019. Staufen1 and UPF1 exert opposite actions on the replacement of the nuclear cap-binding complex by eIF4E at the 5' end of mRNAs. Nucleic Acids Res. 47: 9313-9328.
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- Kanellis, D.C., et al. 2021. The exon-junction complex helicase elF4A3 controls cell fate via coordinated regulation of ribosome biogenesis and translational output. Sci. Adv. 7: eabf7561.
- Wang, J., et al. 2023. The interaction of hsa\_circ\_0002594 and elF4A3 promotes T-helper 2 cell differentiation by the regulation of PTEN. Clin. Exp. Med. 23: 887-895.
- Bera, S., et al. 2023. Regulation of SELENOF translation by elF4a3: possible role in prostate cancer progression. Mol. Carcinog. 62: 1803-1816.
- Chang, J., et al. 2023. An interaction between elF4A3 and elF3g drives the internal initiation of translation. Nucleic Acids Res. 51: 10950-10969.

#### **PROTOCOLS**

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

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