

eIF4AIII (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 exon-exon 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

eIF4AIII (B-2) is a mouse monoclonal antibody raised against amino acids 1-50 mapping at the N-terminus of eIF4AIII of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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® 488 (sc-365549 AF488), Alexa Fluor® 546 (sc-365549 AF546), Alexa Fluor® 594 (sc-365549 AF594) or Alexa Fluor® 647 (sc-365549 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365549 AF680) or Alexa Fluor® 790 (sc-365549 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

eIF4AIII (B-2) is recommended for detection of eIF4AIII of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 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.

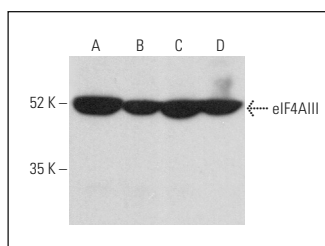
Molecular Weight of eIF4AIII: 47 kDa.

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

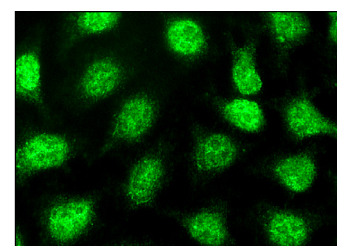
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



eIF4AIII (B-2): sc-365549. Western blot analysis of eIF4AIII expression in K-562 (A), PC-12 (B), Raji (C) and Hep G2 (D) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



eIF4AIII (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.
- Aviner, R., et al. 2017. Proteomic analysis of polyribosomes identifies splicing factors as potential regulators of translation during mitosis. *Nucleic Acids Res.* 45: 5945-5957.
- 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. Stauf1 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.
- Herdlevar, I., et al. 2020. Localization of CDR2L and CDR2 in paraneoplastic cerebellar degeneration. *Ann. Clin. Transl. Neurol.* 7: 2231-2242.
- Kanellis, D.C., et al. 2021. The exon-junction complex helicase eIF4A3 controls cell fate via coordinated regulation of ribosome biogenesis and translational output. *Sci. Adv.* 7: eabf7561.
- Wang, J., et al. 2022. The interaction of hsa_circ_0002594 and eIF4A3 promotes T-helper 2 cell differentiation by the regulation of PTEN. *Clin. Exp. Med.* E-published.

RESEARCH USE

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

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