

# eIF4AIII (3F1): sc-33632



The Power to Question

## 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.

## REFERENCES

1. Lomakin, I.B., et al. 2000. Physical association of eukaryotic initiation factor 4G (eIF4G) with eIF4A strongly enhances binding of eIF4G to the internal ribosomal entry site of encephalomyocarditis virus and is required for internal initiation of translation. *Mol. Cell. Biol.* 20: 6019-6029.
2. Dominguez, D., et al. 2001. Structural and functional similarities between the central eukaryotic initiation factor (eIF)4A-binding domain of mammalian eIF4G and the eIF4A-binding domain of yeast eIF4G. *Biochem. J.* 355: 223-230.
3. Rogers, G.W., Jr., et al. 2001. Further characterization of the helicase activity of eIF4A. Substrate specificity. *J. Biol. Chem.* 276: 12598-12608.

## CHROMOSOMAL LOCATION

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

## SOURCE

eIF4AIII (3F1) is a mouse monoclonal antibody raised against recombinant GST-tagged eIF4A3 protein of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

eIF4AIII (3F1) is recommended for detection of eIF4AIII 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

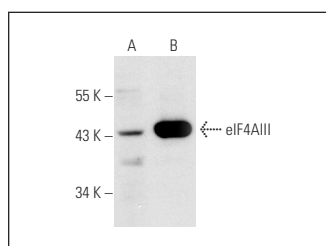
Molecular Weight of eIF4AIII: 47 kDa.

Positive Controls: eIF4AIII (h): 293T Lysate: sc-112312, HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

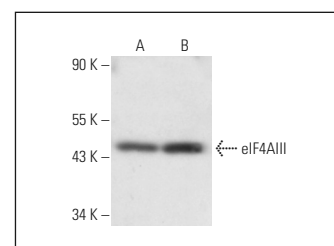
## RECOMMENDED SUPPORT REAGENTS

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 (3F1): sc-33632. Western blot analysis of eIF4AIII expression in non-transfected: sc-117752 (A) and human eIF4AIII transfected: sc-112312 (B) 293T whole cell lysates.



eIF4AIII (3F1): sc-33632. Western blot analysis of eIF4AIII expression in HeLa whole cell lysate (A) and HeLa nuclear extract (B).

## SELECT PRODUCT CITATIONS

1. Budiman, M.E., et al. 2009. Eukaryotic initiation factor 4a3 is a selenium-regulated RNA-binding protein that selectively inhibits selenocysteine incorporation. *Mol. Cell* 35: 479-489.
2. Saulière, J., et al. 2012. CLIP-seq of eIF4AIII reveals transcriptome-wide mapping of the human exon junction complex. *Nat. Struct. Mol. Biol.* 19: 1124-1131.
3. Miller, E.E., et al. 2017. EIF4A3 deficient human iPSCs and mouse models demonstrate neural crest defects that underlie Richieri-Costa-Pereira syndrome. *Hum. Mol. Genet.* 26: 2177-2191.
4. Rambout, X., et al. 2023. PGC-1α senses the CBC of pre-mRNA to dictate the fate of promoter-proximally paused RNAPII. *Mol. Cell* 83: 186-202.

## STORAGE

Store at 4° C, \*\*DO 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.