

eIF4AII (G-5): sc-137147

BACKGROUND

Translation initiation in eukaryotes necessitates the assembly of an 80S ribosomal complex. Eukaryotic initiation factors (eIFs) are utilized in a sequence of reactions that leads to 80S ribosomal assembly and initiation of translation. Mammalian eukaryotic translation initiation factor 4F (eIF4F) is a protein complex that contains eIF4A, eIF4E and eIF4G, binds mRNA at a 5'-cap motif and recruits the 43S ribosomal preinitiation complex to the eligible transcript. Along with eIF4B, the eIF4F complex mediates the unwinding of mRNA secondary structure to facilitate ribosome association. eIF4E specifically interacts with the 5'-cap, eIF4A(I,II) are bidirectional RNA helicases, and eIF4G(I,II) are scaffolding proteins which coordinate eIF4E, eIF4A, eIF3 and the 40S ribosome. Human eIF4A1 (eIF4A, DDX2A) is a 406 amino acid protein that is 92.7% homologous to mouse eIF4A1. The promoter region of human eIF4A1 contains TATA and CAAT motifs and consensus binding sites to Sp1 and AP2.

CHROMOSOMAL LOCATION

Genetic locus: EIF4A2 (human) mapping to 3q27.3; Eif4a2 (mouse) mapping to 16 B1.

SOURCE

eIF4AII (G-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-43 at the N-terminus of eIF4AII 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.

Blocking peptide available for competition studies, sc-137147 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

eIF4AII (G-5) is recommended for detection of eIF4AII 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).

eIF4AII (G-5) is also recommended for detection of eIF4AII in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for eIF4AII siRNA (h): sc-40556, eIF4AII siRNA (m): sc-40557, eIF4AII shRNA Plasmid (h): sc-40556-SH, eIF4AII shRNA Plasmid (m): sc-40557-SH, eIF4AII shRNA (h) Lentiviral Particles: sc-40556-V and eIF4AII shRNA (m) Lentiviral Particles: sc-40557-V.

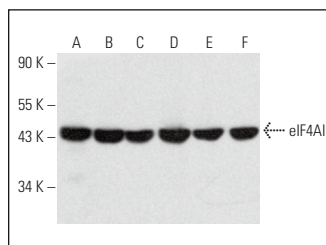
Molecular Weight of eIF4AII: 46 kDa.

Positive Controls: NCI-H292 whole cell lysate: sc-364179, SK-N-MC cell lysate: sc-2237 or F9 cell lysate: sc-2245.

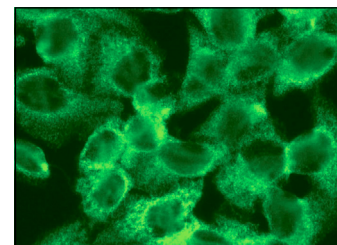
RECOMMENDED SUPPORT REAGENTS

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



eIF4AII (G-5): sc-137147. Western blot analysis of eIF4AII expression in NCI-H292 (A), SK-N-MC (B), F9 (C), C3H/10T1/2 (D), NRK (E) and L8 (F) whole cell lysates.



eIF4AII (G-5): sc-137147. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Amengual-Cladera, E., et al. 2011. Phytotherapy in a rat model of hyperoxaluria: the antioxidant effects of quercetin involve serum paraoxonase 1 activation. *Exp. Biol. Med.* 236: 1133-1138.
- Baird, N.L., et al. 2012. Arenavirus infection induces discrete cytosolic structures for RNA replication. *J. Virol.* 86: 11301-11310.
- Garcia Moreno, M., et al. 2013. Requirements for eIF4A and eIF2 during translation of Sindbis virus subgenomic mRNA in vertebrate and invertebrate host cells. *Cell. Microbiol.* 15: 823-840.
- Jongjitwimol, J., et al. 2016. Sumoylation of eIF4A2 affects stress granule formation. *J. Cell Sci.* 129: 2407-2415.
- Salamon, I., et al. 2023. Celf4 controls mRNA translation underlying synaptic development in the prenatal mammalian neocortex. *Nat. Commun.* 14: 6025.

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 for detailed protocols and support products.