

# eIF4AII (H-5): sc-137148

## 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 eIF4AI (eIF4A, DDX2A) is a 406 amino acid protein that is 92.7% homologous to mouse eIF4AI. The promoter region of human eIF4A1 contains TATA and CAAT motifs and consensus binding sites to Sp1 and AP2.

## REFERENCES

1. Rozen, F., et al. 1990. Bidirectional RNA helicase activity of eucaryotic translation initiation factors 4A and 4F. *Mol. Cell. Biol.* 10: 1134-1144.
2. Pain, V.M. 1996. Initiation of protein synthesis in eukaryotic cells. *Eur. J. Biochem.* 236: 747-771.

## CHROMOSOMAL LOCATION

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

## SOURCE

eIF4AII (H-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<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

eIF4AII (H-5) is available conjugated to agarose (sc-137148 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137148 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137148 PE), fluorescein (sc-137148 FITC), Alexa Fluor® 488 (sc-137148 AF488), Alexa Fluor® 546 (sc-137148 AF546), Alexa Fluor® 594 (sc-137148 AF594) or Alexa Fluor® 647 (sc-137148 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137148 AF680) or Alexa Fluor® 790 (sc-137148 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-137148 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## STORAGE

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

## APPLICATIONS

eIF4AII (H-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).

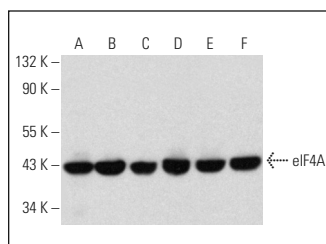
eIF4AII (H-5) is also recommended for detection of eIF4AII in additional species, including equine, canine, bovine and porcine.

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.

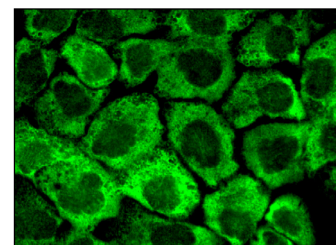
Molecular Weight of eIF4AII: 46 kDa.

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

## DATA



eIF4AII (H-5): sc-137148. 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 (H-5): sc-137148. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Dinh, P.X., et al. 2013. Induction of stress granule-like structures in vesicular stomatitis virus-infected cells. *J. Virol.* 87: 372-383.
2. Oblinger, J.L., et al. 2018. Overexpression of eIF4F components in meningiomas and suppression of meningioma cell growth by inhibiting translation initiation. *Exp. Neurol.* 299: 299-307.
3. Wilczynska, A., et al. 2019. eIF4A2 drives repression of translation at initiation by Ccr4-not through purine-rich motifs in the 5'UTR. *Genome Biol.* 20: 262.
4. Ho, J.J.D., et al. 2021. Proteomics reveal cap-dependent translation inhibitors remodel the translation machinery and translato. *Cell Rep.* 37: 109806.
5. Cao, Y., et al. 2023. Enhanced bypass of PD-L1 translation reduces the therapeutic response to mTOR kinase inhibitors. *Cell Rep.* 42: 112764.

## RESEARCH USE

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