

eIF3 ζ (H-7): sc-271515

The Power to Question

BACKGROUND

The initiation of protein synthesis in eukaryotic cells is regulated by interactions between protein initiation factors and RNA molecules. Eukaryotic initiation factors (eIFs) are utilized in a sequence of reactions that lead to 80S ribosomal assembly and, ultimately, translation. The eukaryotic initiation factor-3 (eIF3) scaffolding structure is the largest of the eIF complexes and includes eIF3 α , eIF3 β , eIF3 γ , eIF3 δ , eIF3 ϵ , eIF3 ζ , eIF3 η and eIF3 θ , all of which function to control the assembly of the 40S ribosomal subunit. Association of eIF3 proteins with the 40S ribosomal subunit stabilizes eIF2-GTP-Met-tRNAⁱMet complex association and mRNA binding, and promotes dissociation of 80S ribosomes into 40S and 60S subunits, thereby promoting the assembly of the pre-initiation complex. Overexpression of eIF3 proteins is common in several cancers, suggesting a role for eIF3 proteins in tumorigenesis.

REFERENCES

1. Valasek, L., et al. 2004. Interactions of eukaryotic translation initiation factor 3 (eIF3) subunit NIP1/c with eIF1 and eIF5 promote preinitiation complex assembly and regulate start codon selection. *Mol. Cell. Biol.* 24: 9437-9455.
2. Peterson, T.R. and Sabatini, D.M. 2005. eIF3: a connectOR of S6K1 to the translation preinitiation complex. *Mol. Cell* 20: 655-657.
3. Dong, Z. and Zhang, J.T. 2006. Initiation factor eIF3 and regulation of mRNA translation, cell growth, and cancer. *Crit. Rev. Oncol. Hematol.* 59: 169-180.
4. Hinnebusch, A.G. 2006. eIF3: a versatile scaffold for translation initiation complexes. *Trends Biochem. Sci.* 31: 553-562.
5. LeFebvre, A.K., et al. 2006. Translation initiation factor eIF4G-1 binds to eIF3 through the eIF3 ϵ subunit. *J. Biol. Chem.* 281: 22917-22932.

CHROMOSOMAL LOCATION

Genetic locus: EIF3D (human) mapping to 22q12.3; Eif3d (mouse) mapping to 15 E1.

SOURCE

eIF3 ζ (H-7) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of eIF3 ζ of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

eIF3 ζ (H-7) is available conjugated to agarose (sc-271515 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271515 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271515 PE), fluorescein (sc-271515 FITC), Alexa Fluor[®] 488 (sc-271515 AF488), Alexa Fluor[®] 546 (sc-271515 AF546), Alexa Fluor[®] 594 (sc-271515 AF594) or Alexa Fluor[®] 647 (sc-271515 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271515 AF680) or Alexa Fluor[®] 790 (sc-271515 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

eIF3 ζ (H-7) is recommended for detection of eIF3 ζ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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 eIF3 ζ siRNA (h): sc-40552, eIF3 ζ siRNA (m): sc-40553, eIF3 ζ shRNA Plasmid (h): sc-40552-SH, eIF3 ζ shRNA Plasmid (m): sc-40553-SH, eIF3 ζ shRNA (h) Lentiviral Particles: sc-40552-V and eIF3 ζ shRNA (m) Lentiviral Particles: sc-40553-V.

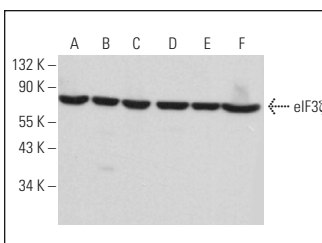
Molecular Weight of eIF3 ζ : 66 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, Hep G2 cell lysate: sc-2227 or Jurkat whole cell lysate: sc-2204.

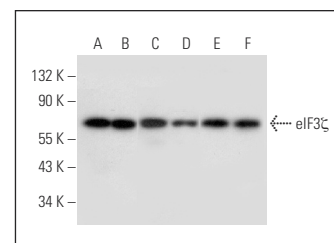
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



eIF3 ζ (H-7): sc-271515. Western blot analysis of eIF3 ζ expression in Neuro-2A (A), C6 (B), MM-142 (C), HL-60 (D), MCF7 (E) and c4 (F) whole cell lysates.



eIF3 ζ (H-7): sc-271515. Western blot analysis of eIF3 ζ expression in Ca Ski (A), Jurkat (B), Hep G2 (C), RAW 264.7 (D), PC-12 (E) and KNRK (F) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Villa, N., et al. 2013. Human eukaryotic initiation factor 4G (eIF4G) protein binds to eIF3c, -d, and -e to promote mRNA recruitment to the ribosome. *J. Biol. Chem.* 288: 32932-32940.

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.