SANTA CRUZ BIOTECHNOLOGY, INC.

eIF3ζ (H-7): sc-271515

SANTA CRUZ BIOTECHNOLOGY

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 eIF3α, eIF3β, eIF3γ, eIF3δ, eIF3ε, eIF3ζ, eIF3η and eIF3θ, 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. Hinnebusch, A.G. 2006. eIF3: a versatile scaffold for translation initiation complexes. Trends Biochem. Sci. 31: 553-562.
4. LeFebvre, A.K., et al. 2006. Translation initiation factor eIF4G-1 binds to eIF3 through the eIF3ε subunit. J. Biol. Chem. 281: 22917-22932.

CHROMOSOMAL LOCATION

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

SOURCE

eIF3ζ (H-7) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of eIF3ζ of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

eIF3ζ (H-7) is available conjugated to agarose (sc-271515 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271515 HRP), 200 µg/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 µg/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 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

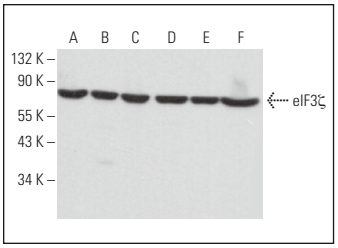
eIF3ζ (H-7) is recommended for detection of eIF3ζ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for eIF3ζ siRNA (h): sc-40552, eIF3ζ siRNA (m): sc-40553, eIF3ζ shRNA Plasmid (h): sc-40552-SH, eIF3ζ shRNA Plasmid (m): sc-40553-SH, eIF3ζ shRNA (h) Lentiviral Particles: sc-40552-V and eIF3ζ shRNA (m) Lentiviral Particles: sc-40553-V.

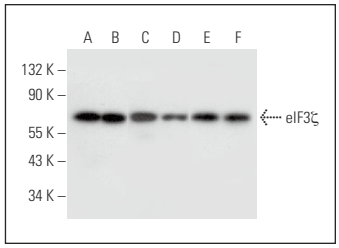
Molecular Weight of eIF3ζ: 66 kDa.

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

DATA



eIF3ζ (H-7): sc-271515. Western blot analysis of eIF3ζ expression in Neuro-2A (**A**), C6 (**B**), MM-142 (**C**), HL-60 (**D**), MCF7 (**E**) and c4 (**F**) whole cell lysates.



eIF3ζ (H-7): sc-271515. Western blot analysis of eIF3ζ 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.
2. Shin, S., et al. 2023. mTOR inhibition reprograms cellular proteostasis by regulating eIF3D-mediated selective mRNA translation and promotes cell phenotype switching. Cell Rep. 42: 112868.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.