SANTA CRUZ BIOTECHNOLOGY, INC.

eIF3γ (E-10): sc-271283

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. Valásek, 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. 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: EIF3H (human) mapping to 8q23.3; Eif3h (mouse) mapping to 15 C.

SOURCE

eIF3γ (E-10) is a mouse monoclonal antibody raised against amino acids 51-352 mapping at the C-terminus of eIF3γ 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.

eIF3γ (E-10) is available conjugated to agarose (sc-271283 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271283 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271283 PE), fluorescein (sc-271283 FITC), Alexa Fluor® 488 (sc-271283 AF488), Alexa Fluor® 546 (sc-271283 AF546), Alexa Fluor® 594 (sc-271283 AF594) or Alexa Fluor® 647 (sc-271283 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271283 AF680) or Alexa Fluor® 790 (sc-271283 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

eIF3γ (E-10) is recommended for detection of eIF3γ 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 eIF3γ siRNA (h): sc-40549, eIF3γ siRNA (m): sc-60048, eIF3γ shRNA Plasmid (h): sc-40549-SH, eIF3γ shRNA Plasmid (m): sc-60048-SH, eIF3γ shRNA (h) Lentiviral Particles: sc-40549-V and eIF3γ shRNA (m) Lentiviral Particles: sc-60048-V.

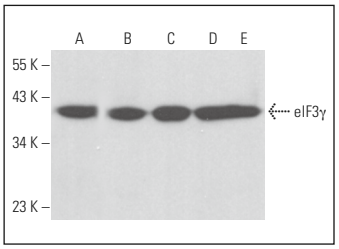
Molecular Weight of eIF3γ: 40 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Neuro-2A whole cell lysate: sc-364185 or C3H/10T1/2 cell lysate: sc-3801.

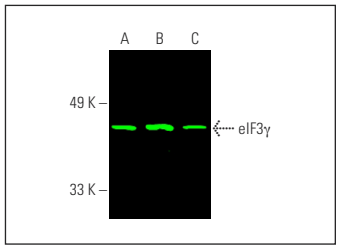
RECOMMENDED SUPPORT REAGENTS

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



eIF3γ (E-10): sc-271283. Western blot analysis of eIF3γ expression in SK-BR-3 (**A**), Neuro-2A (**B**), C3H/10T1/2 (**C**), A-10 (**D**) and PC-12 (**E**) whole cell lysates.



eIF3γ (E-10): sc-271283. Near-infrared western blot analysis of eIF3γ expression in Neuro-2A (**A**), Jurkat (**B**) and U-251-MG (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Wu, C., et al. 2024. Unveiling dysregulated lncRNAs and networks in non-syndromic cleft lip with or without cleft palate pathogenesis. Sci. Rep. 14: 1047.

STORAGE

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