SANTA CRUZ BIOTECHNOLOGY, INC.

eIF3ε (C-10): sc-390831

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.
5. Hinnebusch, A.G. 2006. eIF3: a versatile scaffold for translation initiation complexes. Trends Biochem. Sci. 31: 553-562.
6. Masutani, M., et al. 2007. Reconstitution reveals the functional core of mammalian eIF3. EMBO J. 26: 3373-3383.

CHROMOSOMAL LOCATION

Genetic locus: EIF3F (human) mapping to 11p15.4; Eif3f (mouse) mapping to 7 E3.

SOURCE

eIF3ε (C-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 179-206 within an internal region of eIF3ε 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.

Blocking peptide available for competition studies, sc-390831 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

eIF3ε (C-10) is recommended for detection of eIF3ε 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).

eIF3ε (C-10) is also recommended for detection of eIF3ε in additional species, including equine and bovine.

Suitable for use as control antibody for eIF3ε siRNA (h): sc-105324, eIF3e siRNA (m): sc-144615, eIF3ε shRNA Plasmid (h): sc-105324-SH, eIF3e shRNA Plasmid (m): sc-144615-SH, eIF3ε shRNA (h) Lentiviral Particles: sc-105324-V and eIF3e shRNA (m) Lentiviral Particles: sc-144615-V.

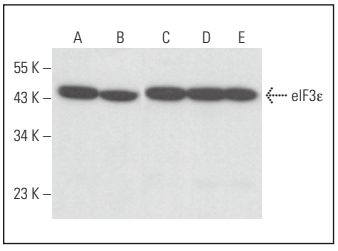
Molecular Weight of eIF3ε: 52 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, MM-142 cell lysate: sc-2246 or PC-12 cell lysate: sc-2250.

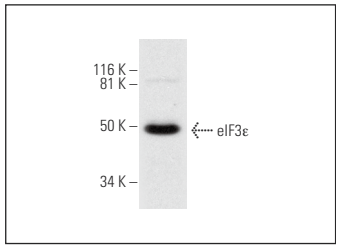
RECOMMENDED SUPPORT REAGENTS

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



eIF3ε (C-10): sc-390831. Western blot analysis of eIF3ε expression in HeLa (**A**), K-562 (**B**), MM-142 (**C**), PC-12 (**D**) and Neuro-2A (**E**) whole cell lysates.



eIF3ε (C-10): sc-390831. Western blot analysis of eIF3ε expression in A-431 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Klein, G., et al. 2016. RNA-binding proteins are a major target of silica nanoparticles in cell extracts. Nanotoxicology 10: 1555-1564.

STORAGE

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