SANTA CRUZ BIOTECHNOLOGY, INC.

eIF3η (A-20): sc-16378

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.

CHROMOSOMAL LOCATION

Genetic locus: EIF3B (human) mapping to 7p22.3; Eif3b (mouse) mapping to 5 G2.

SOURCE

eIF3η (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of eIF3η of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16378 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

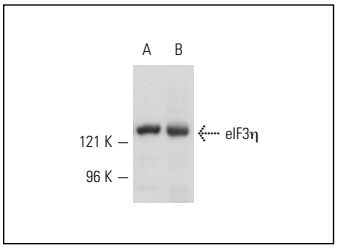
eIF3η (A-20) is recommended for detection of eIF3η of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 eIF3η siRNA (h): sc-35280, eIF3η siRNA (m): sc-35281, eIF3η shRNA Plasmid (h): sc-35280-SH, eIF3η shRNA Plasmid (m): sc-35281-SH, eIF3η shRNA (h) Lentiviral Particles: sc-35280-V and eIF3η shRNA (m) Lentiviral Particles: sc-35281-V.

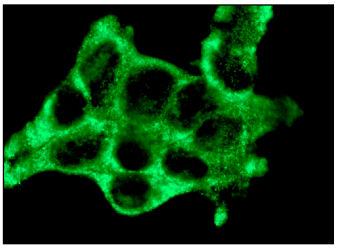
Molecular Weight of eIF3η: 116 kDa.

Positive Controls: A-431 nuclear extract: sc-2122, Jurkat nuclear extract: sc-2132 or RAW 264.7 nuclear extract: sc-24961.

DATA



eIF3η (A-20): sc-16378. Western blot analysis of eIF3η expression in A-431 (**A**) and Jurkat (**B**) nuclear extracts.



eIF3η: (A-20): sc-16378. Immunofluorescence staining of methanol-fixed A-431 cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Fontaine-Rodriguez, E.C., et al. 2004. Proteomics of herpes simplex virus infected cell protein 27: association with translation initiation factors. Virology 330: 487-492.
2. Morris, C., et al. 2007. Human INT6/eIF3ε is required for nonsense-mediated mRNA decay. EMBO Rep. 8: 596-602.
3. Unterstab, G., et al. 2010. The polyomavirus BK agnoprotein co-localizes with lipid droplets. Virology 399: 322-331.
4. Morris, C., et al. 2012. INT6/EIF3E interacts with ATM and is required for proper execution of the DNA damage response in human cells. Cancer Res. 72: 2006-2016.
5. Neusiedler, J., et al. 2012. INT6 interacts with MIF4GD/SLIP1 and is necessary for efficient histone mRNA translation. RNA 18: 1163-1177.