SANTA CRUZ BIOTECHNOLOGY, INC.

eIF3α (C-20): sc-16355

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, eIF3δ, eIF3γ, eIF3η, eIF3ε, eIF3θ and eIF3ζ, 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., et al. 2005. eIF3: a connecTOR of S6K1 to the translation preinitiation complex. Mol. Cell 20: 655-657.
3. Dong, Z., et al. 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 eIF3e 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.
7. Zhang, L., et al. 2007. Individual overexpression of five subunits of human translation initiation factor eIF3 promotes malignant transformation of immortal fibroblast cells. J. Biol. Chem. 282: 5790-5800.
8. Sato, H., et al. 2007. Measles virus N protein inhibits host translation by binding to eIF3-p40. J. Virol. 81: 11569-11576.

CHROMOSOMAL LOCATION

Genetic locus: EIF3J (human) mapping to 15q21.1; Eif3j (mouse) mapping to 2 E5.

SOURCE

eIF3α (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of eIF3α 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-16355 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

eIF3α (C-20) is recommended for detection of eIF3α 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).

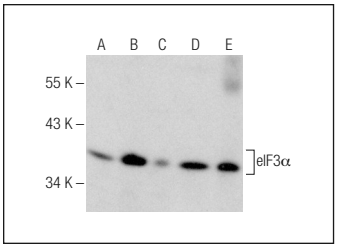
eIF3α (C-20) is also recommended for detection of eIF3α in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for eIF3α siRNA (h): sc-40547, eIF3α siRNA (m): sc-40548, eIF3α shRNA Plasmid (h): sc-40547-SH, eIF3α shRNA Plasmid (m): sc-40548-SH, eIF3α shRNA (h) Lentiviral Particles: sc-40547-V and eIF3α shRNA (m) Lentiviral Particles: sc-40548-V.

Molecular Weight of eIF3α: 36 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, K-562 whole cell lysate: sc-2203 or MES-SA/Dx5 cell lysate: sc-2284.

DATA



eIF3α (C-20): sc-16355. Western blot analysis of eIF3α expression in Jurkat (**A**), K-562 (**B**), MES-SA/Dx5 (**C**), Ramos (**D**) and HL-60 (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Harris, T.E., et al. 2006. mTOR-dependent stimulation of the association of eIF4G and eIF3 by insulin. EMBO J. 25: 1659-1668.

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.