

eIF3 γ (N-20): sc-16359

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 eIF3 α , eIF3 β , eIF3 γ , eIF3 δ , eIF3 ϵ , eIF3 ζ , eIF3 η and eIF3 θ , 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-tRNA^{iMet} 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., Nielsen, K.H., Zhang, F., Fekete, C.A. and Hinnebusch, A.G. 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., Korneeva, N.L., Trutschl, M., Cvek, U., Duzan, R.D., Bradley, C.A., Hershey, J.W. and Rhoads, R.E. 2006. Translation initiation factor eIF4G-1 binds to eIF3 through the eIF3 ϵ 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., Sonenberg, N., Yokoyama, S. and Imataka, H. 2007. Reconstitution reveals the functional core of mammalian eIF3. *EMBO J.* 26: 3373-3383.
7. Zhang, L., Pan, X. and Hershey, J.W. 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., Masuda, M., Kanai, M., Tsukiyama-Kohara, K., Yoneda, M. and Kai, C. 2007. Measles virus N protein inhibits host translation by binding to eIF3-p40. *J. Virol.* 81: 11569-11576.

CHROMOSOMAL LOCATION

Genetic locus: EIF3H (human) mapping to 8q23.3.

SOURCE

eIF3 γ (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of eIF3 γ of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-16359 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

eIF3 γ (N-20) is recommended for detection of eIF3 γ of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

eIF3 γ (N-20) is also recommended for detection of eIF3 γ in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for eIF3 γ siRNA (h): sc-40549, eIF3 γ shRNA Plasmid (h): sc-40549-SH and eIF3 γ shRNA (h) Lentiviral Particles: sc-40549-V.

Molecular Weight of eIF3 γ : 40 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Gilks, N., Kedersha, N., Ayodele, M., Shen, L., Stoecklin, G., Dember, L.M. and Anderson, P. 2004. Stress granule assembly is mediated by prion-like aggregation of TIA-1. *Mol. Biol. Cell* 15: 5383-5398.

RESEARCH USE

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

PROTOCOLS

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