

# eIF3ε (G-7): sc-390413

## 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-tRNA<sup>Met</sup> 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: EIF3F (human) mapping to 11p15.4; Eif3f (mouse) mapping to 7 E3.

## SOURCE

eIF3ε (G-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 167-205 within an internal region of eIF3ε of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

eIF3ε (G-7) is available conjugated to agarose (sc-390413 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390413 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390413 PE), fluorescein (sc-390413 FITC), Alexa Fluor® 488 (sc-390413 AF488), Alexa Fluor® 546 (sc-390413 AF546), Alexa Fluor® 594 (sc-390413 AF594) or Alexa Fluor® 647 (sc-390413 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390413 AF680) or Alexa Fluor® 790 (sc-390413 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390413 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

eIF3ε (G-7) 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

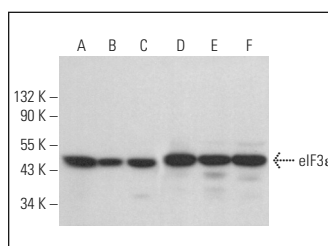
eIF3ε (G-7) is also recommended for detection of eIF3ε in additional species, including equine and bovine.

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

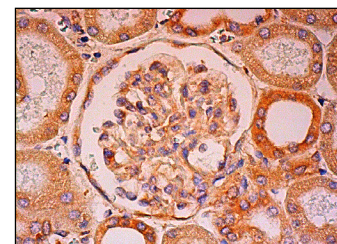
Molecular Weight of eIF3ε: 52 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, Neuro-2A whole cell lysate: sc-364185 or MM-142 cell lysate: sc-2246.

## DATA



eIF3ε (G-7): sc-390413. Western blot analysis of eIF3ε expression in HeLa (A), A-431 (B), K-562 (C), MM-142 (D), PC-12 (E) and Neuro-2A (F) whole cell lysates.



eIF3ε (G-7): sc-390413. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in glomeruli and cells in tubules.

## SELECT PRODUCT CITATIONS

1. Agüero, T., et al. 2017. Maternal Dead-end 1 promotes translation of nanos1 by binding the eIF3 complex. *Development* 144: 3755-3765.
2. El-Kadi, S.W., et al. 2018. Decreased abundance of eIF4F subunits predisposes low-birth-weight neonatal pigs to reduced muscle hypertrophy. *J. Appl. Physiol.* E-published.
3. Andoh, T., et al. 2021. Berberine induces anti-atopic dermatitis effects through the downregulation of cutaneous EIF3F and MALT1 in NC/Nga mice with atopy-like dermatitis. *Biochem. Pharmacol.* 185: 114439.

## 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.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA