

# eIF4E (FL-217): sc-13963

## BACKGROUND

The initiation of protein synthesis in eukaryotic cells is regulated by interactions between protein initiation factors and RNA molecules. The eukaryotic initiation complex eIF4F exists *in vitro* as a trimeric complex of eIF4G, eIF4E, and eIF4A. Together, the complex allows ribosome binding to mRNA by inducing the unwinding of mRNA secondary structures. eIF4E binds to the mRNA "cap" during an early step in the initiation of protein synthesis. eIF4A acts as an ATP-dependent RNA helicase. eIF4G acts as a bridge between eIF4E, eIF4A and the eIF3 complex.

## REFERENCES

1. Rychlik, W., et al. 1987. Amino acid sequence of the mRNA cap-binding protein from human tissues. *Proc. Natl. Acad. Sci. USA* 84: 945-949.
2. Reddy, N.S., et al. 1988. Isolation and mapping of a gene for protein synthesis initiation factor 4A and its expression during differentiation of murine erythroleukemia cells. *Gene* 70: 231-243.
3. Rozen, F., et al. 1990. Bidirectional RNA helicase activity of eucaryotic translation initiation factors 4A and 4F. *Mol. Cell. Biol.* 10: 1134-1144.

## CHROMOSOMAL LOCATION

Genetic locus: EIF4E (human) mapping to 4q23; Eif4e (mouse) mapping to 3 G3.

## SOURCE

eIF4E (FL-217) is a rabbit polyclonal antibody raised against amino acids 1-217 representing full length eIF4E 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.

## APPLICATIONS

eIF4E (FL-217) is recommended for detection of eIF4E 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), 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).

eIF4E (FL-217) is also recommended for detection of eIF4E in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for eIF4E siRNA (h): sc-35284, eIF4E siRNA (m): sc-35285, eIF4E shRNA Plasmid (h): sc-35284-SH, eIF4E shRNA Plasmid (m): sc-35285-SH, eIF4E shRNA (h) Lentiviral Particles: sc-35284-V and eIF4E shRNA (m) Lentiviral Particles: sc-35285-V.

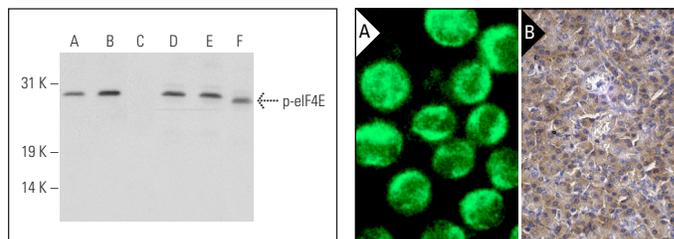
Molecular Weight of eIF4E: 28 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, KNRK whole cell lysate: sc-2214 or K-562 whole cell lysate: sc-2203.

## STORAGE

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

## DATA



Western blot analysis of phosphorylated eIF4E expression in untreated (A, D), insulin-treated (B, E) and serum starved then, serum treated (C, F) NIH/3T3 whole cell lysates. Blots were probed with p-eIF4E (Ser 209)-R: sc-12885-R (A, B, C) and eIF4E (FL-217): sc-13963 preincubated with its cognate phosphorylated peptide (D, E, F).

eIF4E (FL-217): sc-13963. Immunofluorescence staining of methanol-fixed K-562 cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

1. Iresjö, B., et al. 2008. Initiation factors for translation of proteins in the rectus abdominis muscle from patients on overnight standard parenteral nutrition before surgery. *Clin. Sci.* 114: 603-610.
2. Schweitzer, C.J., et al. 2012. Knockdown of the cellular protein LRPPRC attenuates HIV-1 infection. *PLoS ONE* 7: e40537.
3. Baird, N.L., et al. 2012. Arenavirus infection induces discrete cytosolic structures for RNA replication. *J. Virol.* 86: 11301-11310.
4. Hodges, E.N., et al. 2013. Translational control by negative-strand RNA viruses: methods for the study of a crucial virus/host interaction. *Methods* 59: 180-187.
5. Chung, L., et al. 2014. Norovirus translation requires an interaction between the C terminus of the genome-linked viral protein VPg and eukaryotic translation initiation factor 4G. *J. Biol. Chem.* 289: 21738-21750.
6. Rozelle, D.K., et al. 2014. Activation of stress response pathways promotes formation of antiviral granules and restricts virus replication. *Mol. Cell. Biol.* 34: 2003-2016.
7. Jiang, N., et al. 2015. 60S ribosomal protein L35 regulates  $\beta$ -casein translational elongation and secretion in bovine mammary epithelial cells. *Arch. Biochem. Biophys.* 583: 130-139.

## RESEARCH USE

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



Try **eIF4E (P-2): sc-9976** or **eIF4E (A-10): sc-271480**, our highly recommended monoclonal alternatives to eIF4E (FL-217). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **eIF4E (P-2): sc-9976**.