

eIF4E (D-3): sc-514875



The Power to Question

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 eIF4E, eIF4A and eIF4G. 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 (D-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 185-214 at the C-terminus of eIF4E of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514875 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

eIF4E (D-3) is recommended for detection of eIF4E 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

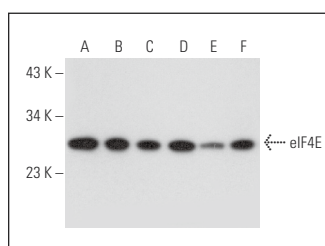
Molecular Weight of eIF4E: 28 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, MEG-01 cell lysate: sc-2283 or K-562 whole cell lysate: sc-2203.

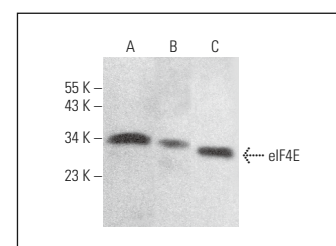
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



eIF4E (D-3): sc-514875. Western blot analysis of eIF4E expression in SRC-3T3 (A), MEG-01 (B), K-562 (C), KNRK (D), HEK293 (E) and HeLa (F) whole cell lysates.



eIF4E (D-3): sc-514875. Western blot analysis of eIF4E expression in MEG-01 (A) and NCI-H460 (B) whole cell lysates and rat testis tissue extract (C).

SELECT PRODUCT CITATIONS

1. Lee, M.K., et al. 2018. *Pyropia yezoensis* protein supplementation prevents dexamethasone-induced muscle atrophy in C57BL/6 mice. Mar. Drugs 16: 328.
2. Liu, P., et al. 2019. Wound healing potential of spirulina protein on CCD-986sk cells. Mar. Drugs 17: 130.
3. Lee, M.K., et al. 2019. Protective effect of *Pyropia yezoensis* peptide on dexamethasone-induced myotube atrophy in C2C12 myotubes. Mar. Drugs 17: 284.
4. Kim, I.H., et al. 2020. PYP1-4 peptide from *Pyropia yezoensis* protects against acetaminophen-induced hepatotoxicity in Hep G2 cells. Exp. Ther. Med. 19: 849-860.

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.



See **eIF4E (P-2): sc-9976** for eIF4E antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.