

# 4E-T (Y-2D28): sc-134233

## BACKGROUND

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. eIF4E-transporter (4E-T) is a nucleocytoplasmic protein that facilitates the nuclear import of eIF4E by regulating the formation of a complex between the eIF4E and the importin  $\alpha\beta$  pathway. This interaction between 4E-T and eIF4E occurs through a conserved binding site. In addition to this binding site for eIF4E, 4E-T contains a bipartite nuclear localization signal and two leucine-rich nuclear export signals. The gene encoding for 4E-T maps to human chromosome 22q12.2.

## REFERENCES

1. Rychlik, W., Domier, L.L., Gardner, P.R., Hellmann, G.M. and Rhoads, R.E. 1987. Amino acid sequence of the mRNA cap-binding protein from human tissues. *Proc. Natl. Acad. Sci. USA* 84: 945-949.
2. Jaramillo, M., Dever, T.E., Merrick, W.C. and Sonenberg, N. 1991. RNA unwinding in translation: assembly of helicase complex intermediates comprising eukaryotic initiation factors eIF4F and eIF4B. *Mol. Cell. Biol.* 11: 5992-5997.
3. Scheper, G.C., Voorma, H.O. and Thomas, A.A. 1992. Eukaryotic initiation factors-4E and -4F stimulate 5' cap-dependent as well as internal initiation of protein synthesis. *J. Biol. Chem.* 267: 7269-7274.
4. Merrick, W.C. 1994. Eukaryotic protein synthesis: an *in vitro* analysis. *Biochimie* 76: 822-830.
5. Dostie, J., Ferraiuolo, M., Pause, A., Adam, S.A. and Sonenberg, N. 2000. A novel shuttling protein, 4E-T, mediates the nuclear import of the mRNA 5' cap-binding protein, eIF4E. *EMBO J.* 19: 3142-3156.
6. LocusLink Report (LocusID: 56478). <http://www.ncbi.nlm.nih.gov/LocusLink/>

## CHROMOSOMAL LOCATION

Genetic locus: EIF4ENIF1 (human) mapping to 22q12.2.

## SOURCE

4E-T (Y-2D28) is a mouse monoclonal antibody raised against recombinant 4E-T protein of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

4E-T (Y-2D28) is recommended for detection of 4E-T of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for 4E-T siRNA (h): sc-40523, 4E-T shRNA Plasmid (h): sc-40523-SH and 4E-T shRNA (h) Lentiviral Particles: sc-40523-V.

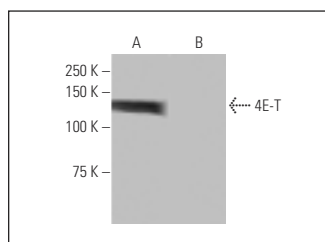
Molecular Weight of 4E-T: 140 kDa.

Positive Controls: human 4E-T transfected 293T whole cell lysate.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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).

## DATA



4E-T (Y-2D28): sc-134233. Western blot analysis of 4E-T expression in human 4E-T transfected (A) and non-transfected (B) 293T whole cell lysates.

## RESEARCH USE

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