SANTA CRUZ BIOTECHNOLOGY, INC.

CPEB (G-6): sc-514688

BACKGROUND

The regulated translation of messenger RNA is essential for cell-cycle progression, establishment of the body plan during early development and modulation of key activities in the central nervous system. Cytoplasmic polyadenylation, one mechanism of controlling translation, is driven by cytoplasmic polyadenylation element binding protein, CPEB. CPEB is a highly conserved, sequence-specific RNA-binding protein that binds to the cytoplasmic polyadenylation element, thereby modulating translational repression and mRNA localization. Blocking cytoplasmic polyadenylation by interfering with the CPE or CPEB prevents the translational activation and translational repression of mRNAs crucial for oocyte maturation. CPEB is synthesized during oogenesis and stockpiled in the oocyte. CPEB degradation occurs via the proteasome pathway, most likely through ubiquitin-conjugated intermediates.

REFERENCES

1. Stebbins-Boaz, B., et al. 1999. Maskin is a CPEB-associated factor that transiently interacts with eIF-4E. Mol. Cell 4: 1017-1027.
2. Luitjens, C., et al. 2000. CPEB proteins control two key steps in spermatogenesis in *C. elegans*. Genes Dev. 14: 2596-2609.
3. Groisman, I., et al. 2000. CPEB, maskin, and cyclin B1 mRNA at the mitotic apparatus: implications for local translational control of cell division. Cell 103: 435-447.
4. Mendez, R., et al. 2001. Translational control by CPEB: a means to the end. Nat. Rev. Mol. Cell Biol. 2: 521-529.
5. Reverte, C.G., et al. 2001. CPEB degradation during *Xenopus* oocyte maturation requires a PEST domain and the 26S proteasome. Dev. Biol. 231: 447-458.
6. Welk, J.F., et al. 2001. Identification and characterization of the gene encoding human cytoplasmic polyadenylation element binding protein. Gene 263: 113-120.

CHROMOSOMAL LOCATION

Genetic locus: CPEB1 (human) mapping to 15q25.2; Cpeb1 (mouse) mapping to 7 D3.

SOURCE

CPEB (G-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 162-187 near the N-terminus of CPEB of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-514688 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-514688 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

CPEB (G-6) is recommended for detection of CPEB long and short isoforms 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 CPEB siRNA (h): sc-37755, CPEB siRNA (m): sc-37756, CPEB shRNA Plasmid (h): sc-37755-SH, CPEB shRNA Plasmid (m): sc-37756-SH, CPEB shRNA (h) Lentiviral Particles: sc-37755-V and CPEB shRNA (m) Lentiviral Particles: sc-37756-V.

CPEB (G-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

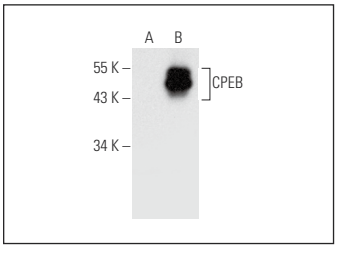
Molecular Weight of CPEB: 63 kDa.

Positive Controls: CPEB (h): 293T Lysate: sc-114376, A2058 whole cell lysate: sc-364178 or HeLa nuclear extract: sc-2120.

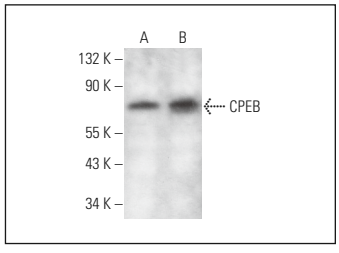
RECOMMENDED SUPPORT REAGENTS

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



CPEB (G-6): sc-514688. Western blot analysis of CPEB expression in non-transfected: sc-117752 (**A**) and human CPEB transfected: sc-114376 (**B**) 293T whole cell lysates.



CPEB (G-6): sc-514688. Western blot analysis of CPEB expression in A2058 whole cell lysate (**A**) and HeLa nuclear extract (**B**).

SELECT PRODUCT CITATIONS

1. Wang, Y., et al. 2022. DDX1 vesicles control calcium-dependent mitochondrial activity in mouse embryos. Nat. Commun. 13: 3794.

STORAGE

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