10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

CPEB1 Antibody
Catalog # ASC10725

Specification

CPEB1 Antibody - Product Information

Application	**WB**
Primary Accession	Q9BZB8
Other Accession	Q9BZB8, 74762720
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Application Notes	**CPEB1 antibody can be used for detection of CPEB1 by Western blot at 1 - 2 µg/mL.**

CPEB1 Antibody - Additional Information

Gene ID **64506**

Target/Specificity
CPEB1;

Reconstitution & Storage
CPEB1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions
CPEB1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

CPEB1 Antibody - Protein Information

Name CPEB1

Synonyms CPEB

Function
Sequence-specific RNA-binding protein that regulates mRNA cytoplasmic polyadenylation and translation initiation during oocyte maturation, early development and at postsynapse sites of neurons. Binds to the cytoplasmic polyadenylation element (CPE), an uridine-rich sequence element (consensus sequence 5'-UUUUUAU-3') within the mRNA 3'- UTR. RNA binding results in a clear conformational change analogous to the Venus fly trap mechanism (PubMed:24990967). In absence of phosphorylation and in association with TACC3 is also involved as a repressor of translation of CPE-containing mRNA; a repression that is relieved by phosphorylation or degradation (By similarity). Involved in the transport of CPE-containing mRNA to dendrites; those mRNAs may be transported to dendrites in a translationally dormant form and translationally activated at synapses (By similarity). Its interaction with APLP1 promotes local CPE-containing mRNA polyadenylation and translation activation (By similarity). Induces the assembly of stress granules

in the absence of stress. Required for cell cycle progression, specifically for prophase entry (PubMed:26398195).

Cellular Location
Cytoplasm. Nucleus Cytoplasm, P-body. Cytoplasmic granule. Synapse. Membrane. Postsynaptic density. Cell projection, dendrite Note=Continuously shuttling between nucleus and cytoplasm (PubMed:18923137). Also found in stress granules. Recruited to stress granules (SGs) upon arsenite treatment. In dendrites (By similarity) Localizes in synaptosomes at dendritic synapses of neurons (By similarity). Strongly enriched in postsynaptic density (PSD) fractions (By similarity). Transported into dendrites in a microtubule-dependent fashion and colocalizes in mRNA-containing particles with TACC3, dynein and kinesin (By similarity). Membrane-associated (By similarity) Colocalizes at excitatory synapses with members of the polyadenylation and translation complex factors (CPSF, APLP1, TACC3, AURKA, SYP, etc.) including CPE-containing RNAs (By similarity). {ECO:0000250, ECO:0000269|PubMed:18923137}

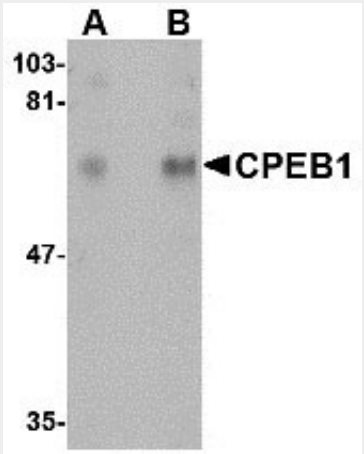
Tissue Location
Isoform 1 is expressed in immature oocytes, ovary, brain and heart. Isoform 2 is expressed in brain and heart. Isoform 3 and isoform 4 are expressed in brain. Expressed in breast tumors and several tumor cell lines.

CPEB1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

CPEB1 Antibody - Images



Western blot analysis of CPEB1 in rat brain tissue lysate with CPEB1 antibody at (A) 1 and (B) 2 µg/mL.

CPEB1 Antibody - Background

CPEB1 Antibody: CPEB1 is an RNA binding protein that contains an RNA-recognition motif and a zinc finger-containing region found in a wide range of vertebrates and invertebrates. CPEB1 forms the nucleus of a complex of factors that regulate poly(A) elongation and promotes polyadenylation-induced translation. CPEB1 mediates many diverse biological processes such as germ cell development, cell division and senescence, and synaptic plasticity. Recently, it was discovered that CPEB1 is involved in beta-catenin mRNA translation and cell migration in astrocytes as well as regulating hypoxia-inducible factor (HIF)-1 expression, demonstrating the wide range of processes in which CPEB1 plays a role. At least four isoforms of CPEB1 are known to exist.

CPEB1 Antibody - References

Richter JD. CPEB: a life in translation. Trends in Biochem. Sci.2007; 32:179-85.
Jones KJ, Korb E, Kundel MA, et al. CPEB1 regulates beta-catenin mRNA translation and cell migration in astrocytes. Glia2008; 56:1401-13.
Hagele S, Kuhn U, Boning M, et al. Cytoplasmic polyadenylation element binding protein (CPEB)1 and 2 bind to the HIF-1alpha mRNA 3'UTR and modulate HIF-1 alpha protein expression. Biochem. J.2008; epub.