

Product datasheet

Anti-CPEB1 antibody ab73287

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Overview

Product name	Anti-CPEB1 antibody
Description	Rabbit polyclonal to CPEB1
Host species	Rabbit
Tested applications	Suitable for: WB, ICC/IF
Species reactivity	Reacts with: Rat
Immunogen	A 14 amino acid peptide from near the amino terminus of human CPEB1.
General notes	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C.
Storage buffer	pH: 7.2 Preservative: 0.02% Sodium azide Constituent: PBS
Purity	Immunogen affinity purified
Clonality	Polyclonal
Isotype	IgG

Applications

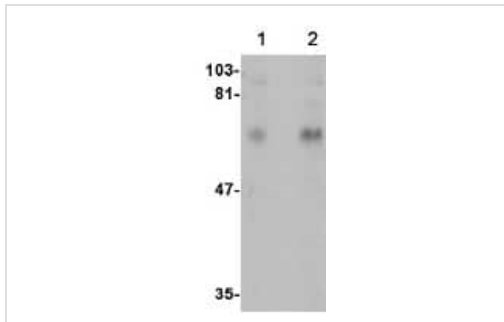
The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab73287 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		Use a concentration of 1 - 2 µg/ml. Detects a band of approximately 63 kDa (predicted molecular weight: 63 kDa).
ICC/IF		Use a concentration of 5 µg/ml.

Target

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'-UUUUUUAU-3') within the mRNA 3'-UTR. 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.
Tissue specificity	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.
Sequence similarities	Belongs to the RRM CPEB family. Contains 2 RRM (RNA recognition motif) domains.
Domain	The 2 RRM domains and the C-terminal region mediate interaction with CPE-containing RNA.
Post-translational modifications	Phosphorylated on serine/threonine residues by AURKA/STK6 within positions 166 and 197. Phosphorylation and dephosphorylation on Thr-172 regulates cytoplasmic polyadenylation and translation of CPE-containing mRNAs. Phosphorylation on Thr-172 by AURKA/STK6 and CAMK2A activates CPEB1. Phosphorylation on Thr-172 may be promoted by APLP1. Phosphorylation increases binding to RNA.
Cellular localization	Cytoplasm > P-body. Cytoplasmic granule. Cell junction > synapse. Membrane. Cell junction > synapse > postsynaptic cell membrane > postsynaptic density. Cell projection > dendrite. 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/STK6, SYP, etc.) including CPE-containing RNAs.

Images



Western blot - Anti-CPEB1 antibody (ab73287)

Lane 1 : Anti-CPEB1 antibody (ab73287) at 1 µg/ml

Lane 2 : Anti-CPEB1 antibody (ab73287) at 2 µg/ml

All lanes : rat brain tissue lysate

Lysates/proteins at 15 µg per lane.

Predicted band size: 63 kDa

Observed band size: 63 kDa

Immunocytochemistry/ Immunofluorescence - Anti-CPEB1 antibody (ab73287)

ICC/IF image of ab73287 stained PC12 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab73287, 5µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

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