

## Rabbit Anti-CREB-1 antibody

SL0035R

**Product Name** CREB-1

**Chinese Name** 环腺苷酸应答元件 Binding protein 抗体

**Alias** Active transcription factor CREB; cAMP response element binding protein; cAMP responsive element binding protein 1; CREB1; CREB 1; CREB1; MGC9284; Transactivator protein; CREB; CREB1\_HUMAN.

**Research Area** immunology Chromatin and nuclear signals Signal transduction transcriptional regulatory factor

**Immunogen Species** Rabbit

**Clonality** Polyclonal

**React Species** Human, Mouse, (predicted: Rat, Chicken, Dog, Pig, Cow, Sheep, )  
WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500 (Paraffin sections need antigen repair)

**Applications** not yet tested in other applications.  
optimal dilutions/concentrations should be determined by the end user.

**Theoretical molecular weight** 37kDa

**Cellular localization** The nucleus

**Form** Liquid

**Concentration** 1mg/ml

**immunogen** KLH conjugated synthetic peptide derived from human CREB-1: 101-150/341

**Lsotype** IgG

**Purification** affinity purified by Protein A

**Buffer Solution** 1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.

**Storage** Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

**Attention** This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

**PubMed** [PubMed](#)

Cyclic AMP Response Element Binding protein (CREB) is a basic / leucine zipper transcription factor that binds the cyclic AMP response element (CRE) and activates transcription in response to a variety of extracellular signals including neurotransmitters, hormones, membrane depolarization, and growth and neurotrophic factors. Activation of CREB is dependent upon the phosphorylation of serine 133. Phosphorylation occurs via p44 / 42 MAP kinase and p90RSK and also via p38 MAP kinase and MSK 1. Although CREB will bind DNA independent of its phosphorylation state, only the phosphorylated form is competent as a transcription factor. CREB binding protein (CBP), a transcriptional coactivator that directly interacts with CREB, binds to CREB in the region of serine 133. CREB appears to play an important role in learning and memory. CREB knock out mice show diminished learning ability.

**Function:**

Phosphorylation-dependent transcription factor that stimulates transcription upon binding to the DNA cAMP response element (CRE), a sequence present in many viral and cellular promoters. Transcription activation is enhanced by the TORC coactivators which act independently of Ser-133 phosphorylation. Involved in different cellular processes including the synchronization of circadian rhythmicity and the differentiation of adipose cells.

**Product  
Detail**

**Subunit:**

Interacts with PPRC1. Binds DNA as a dimer. This dimer is stabilized by magnesium ions. Interacts, through the bZIP domain, with the coactivators TORC1/CRTC1, TORC2/CRTC2 and TORC3/CRTC3. When phosphorylated on Ser-133, binds CREBBP (By similarity). Interacts with CREBL2; regulates CREB1 phosphorylation, stability and transcriptional activity (By similarity). Interacts (phosphorylated form) with TOX3. Interacts with ARRB1. Binds to HIPK2. Interacts with SGK1.

**Subcellular Location:**

Nucleus.

**Post-translational modifications:**

Stimulated by phosphorylation. Phosphorylation of both Ser-133 and Ser-142 in the SCN regulates the activity of CREB and participates in circadian rhythm generation. Phosphorylation of Ser-133 allows CREBBP binding (By similarity). CREBL2 positively regulates phosphorylation at Ser-133 thereby stimulating CREB1 transcriptional activity (By similarity). Phosphorylated upon DNA damage, probably by ATM or ATR. Phosphorylated upon calcium influx by CaMK4 and CaMK2 on Ser-133. CaMK4 is much more potent than CaMK2 in activating CREB. Phosphorylated by CaMK2 on Ser-142. Phosphorylation of Ser-142 blocks CREB-mediated transcription even when Ser-133 is phosphorylated. Phosphorylated by CaMK1 (By similarity). Phosphorylation of Ser-271 by HIPK2 in response to

genotoxic stress promotes CREB1 activity, facilitating the recruitment of the coactivator CBP. Phosphorylated at Ser-133 by RPS6KA3, RPS6KA4 and RPS6KA5 in response to mitogenic or stress stimuli.

Sumoylated with SUMO1. Sumoylation on Lys-304, but not on Lys-285, is required for nuclear localization of this protein. Sumoylation is enhanced under hypoxia, promoting nuclear localization and stabilization.

**DISEASE:**

Defects in CREB1 may be a cause of angiomatoid fibrous histiocytoma (AFH) [MIM:612160]. A distinct variant of malignant fibrous histiocytoma that typically occurs in children and adolescents and is manifest by nodular subcutaneous growth. Characteristic microscopic features include lobulated sheets of histiocyte-like cells intimately associated with areas of hemorrhage and cystic pseudovascular spaces, as well as a striking cuffing of inflammatory cells, mimicking a lymph node metastasis. Note=A chromosomal aberration involving CREB1 is found in a patient with angiomatoid fibrous histiocytoma. Translocation t(2;22)(q33;q12) with CREB1 generates a EWSR1/CREB1 fusion gene that is most common genetic abnormality in this tumor type.

Note=A CREB1 mutation has been found in a patient with multiple congenital anomalies consisting of agenesis of the corpus callosum, cerebellar hypoplasia, severe neonatal respiratory distress refractory to surfactant, thymus hypoplasia, and thyroid follicular hypoplasia (PubMed:22267179).

**Similarity:**

Belongs to the bZIP family.

Contains 1 bZIP domain.

Contains 1 KID (kinase-inducible) domain.

**SWISS:**

P16220

**Gene ID:**

1385

**Database links:**

[Entrez Gene: 281713](#) Cow

[Entrez Gene: 1385](#) Human

[Entrez Gene: 12912](#) Mouse

[Entrez Gene: 81646](#) Rat

[Omim: 123810](#) Human

[SwissProt: P27925](#) Cow

[SwissProt: P16220](#) Human

[SwissProt: Q01147](#) Mouse

[SwissProt: P15337](#) Rat

[Unigene: 516646](#) Human

[Unigene: 453295](#) Mouse

[Unigene: 90061](#) Rat

环腺苷酸应答元件 **Binding protein(cAMP responsive element binding protein, CREB)**是真核细胞转录因子, 属于 ATF/CREB 家族。参与由 cAMP 或某些病毒蛋白质所诱导基因转录的调节。

ATF/CREB 家族相关蛋白

SL0517R ATF-1 活化复制因子 1

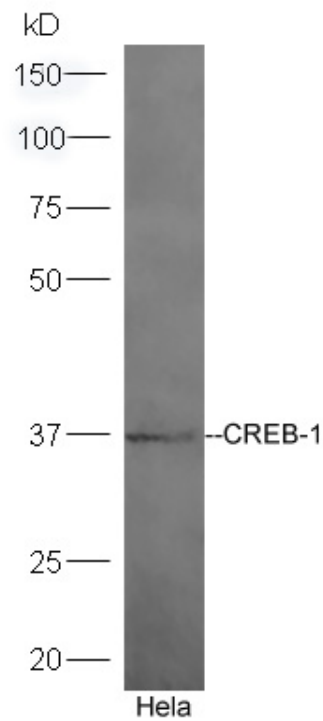
SL0518R ATF-2 活化复制因子 2

SL0519R ATF-3 活化复制因子 3

SL0035M CREB 非磷酸化环腺苷酸应答元件 **Binding protein** (抗体)

SL0036R P-CREB 磷酸化环腺苷酸应答元件 **Binding protein** (抗体)

**Product  
Picture**

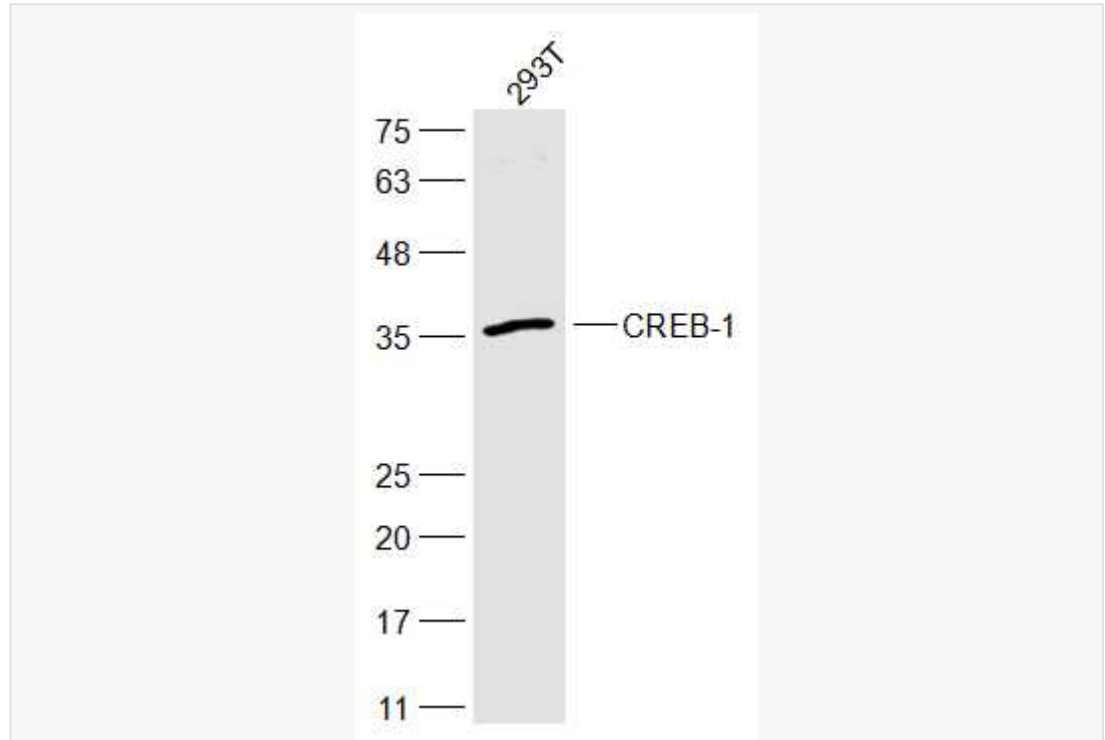


Sample:HeLa Cell Lysate at 40 ug

Primary:Anti-CREB-1 (SL0035R) at 1:300 dilution;

Secondary: HRP conjugated Goat-Anti-rabbit IgG(SL0295G-HRP) at 1: 5000  
dilution;

Predicted band size:37 kD Observed band size:37 kD



Sample:

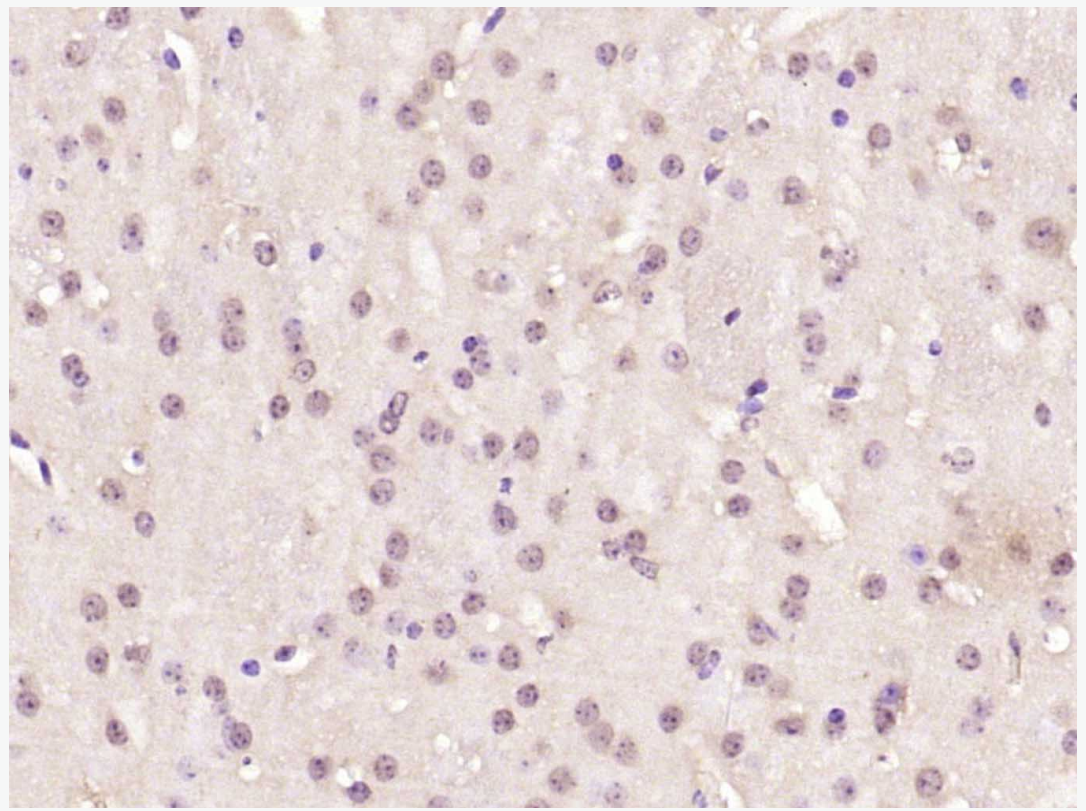
293T(Human) Cell Lysate at 30 ug

Primary: Anti-CREB-1 (SL0035R) at 1/300 dilution

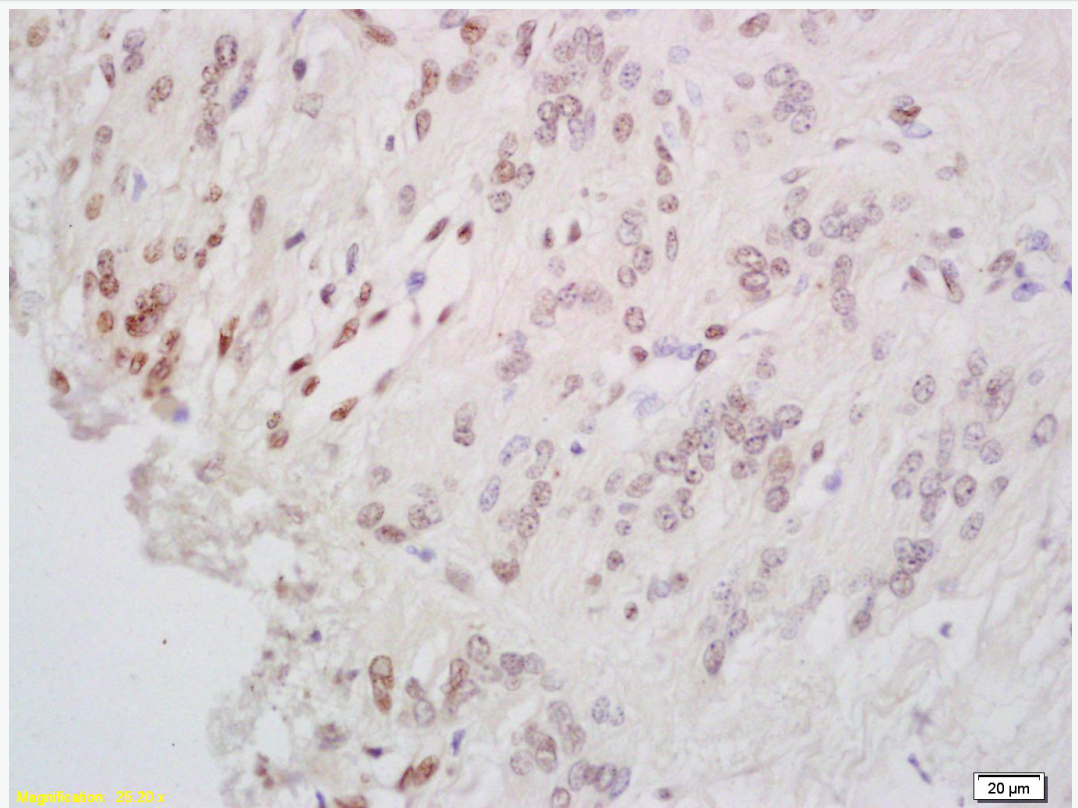
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 37 kD

Observed band size: 37 kD



Paraformaldehyde-fixed, paraffin embedded (mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (CREB-1) Polyclonal Antibody, Unconjugated (SL0035R) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining.



Tissue/cell: human cervical carcinoma; 4% Paraformaldehyde-fixed and paraffin-embedded;

Antigen retrieval: citrate buffer ( 1M, pH 6.0 ), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C for 20 min;

Incubation: Anti-CREB-1 Polyclonal Antibody, Unconjugated(SL0035R) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining