

p300 (SPM307): sc-56455

BACKGROUND

Cyclic AMP-regulated gene expression frequently involves a DNA element designated the cAMP-regulated enhancer (CRE). Many transcription factors bind to this element, including the protein CREB which is activated as a result of phosphorylation by protein kinase A. It has been shown that protein kinase A-mediated CREB phosphorylation results in its binding to a nuclear protein designated CBP (for CREB-binding protein). These findings suggest that CBP has many of the properties expected of a CREB co-activator. Another high molecular weight transcriptional adaptor protein, designated p300, is characterized by three cysteine- and histidine-rich regions, of which the most carboxy-terminal region specifically binds the Adenovirus E1A protein. p300 molecules lacking an intact E1A binding site bypass E1A repression even in the presence of high concentrations of E1A. Sequence analysis of CBP and p300 has revealed substantial homology, arguing that these proteins are members of a conserved family of co-activators.

REFERENCES

- Chivra, J.C., et al. 1993. Phosphorylated CREB binds specifically to the nuclear protein CBP. *Nature* 365: 855-859.
- Kwok, R.P.S., et al. 1993. Nuclear protein CBP is a co-activator for the transcription factor CREB. *Nature* 370: 223-229.
- Eckner, R., et al. 1994. Molecular cloning and functional analysis of the Adenovirus E1A-associated 330 kD protein (p300) reveals a protein with properties of a transcriptional adaptor. *Genes Dev.* 8: 869-884.
- Arany, Z., et al. 1994. E1A-associated p300 and CREB-associated CBP belong to a conserved family of co-activators. *Cell* 77: 799-800.
- Arany, Z., et al. 1995. A family of transcriptional adaptor proteins targeted by the E1A oncoprotein. *Nature* 374: 81-84.
- Lundblad, J.R., et al. 1995. Adenoviral E1A-associated protein p300 as a functional homologue of the transcriptional co-activator CBP. *Nature* 374: 85-88.

CHROMOSOMAL LOCATION

Genetic locus: EP300 (human) mapping to 22q13.2, CREBBP (human) mapping to 16p13.3; Ep300 (mouse) mapping to 15 E1, Crebbp (mouse) mapping to 16 A1.

SOURCE

p300 (SPM307) is a mouse monoclonal antibody raised against affinity purified p300 of human origin with the epitope mapping between amino acids 2071-2091 of CBP.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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.

APPLICATIONS

p300 (SPM307) is recommended for detection of p300 and CBP (CREB-binding protein) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

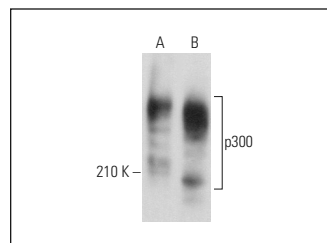
Molecular Weight of p300: 300 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, A-431 whole cell lysate: sc-2201 or MCF7 nuclear extract: sc-2149.

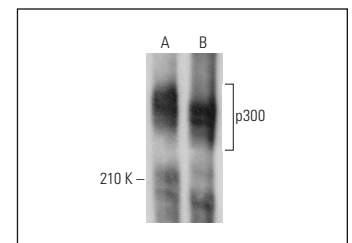
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



p300 (SPM307): sc-56455. Western blot analysis of p300 expression in HeLa (A) and MCF7 (B) nuclear extracts.




p300 (SPM307): sc-56455. Western blot analysis of p300 expression in A-431 whole cell lysate (A) and NIH/3T3 nuclear extract (B).

SELECT PRODUCT CITATIONS

- Miyazaki, T., et al. 2019. Mechanical regulation of bone homeostasis through p130Cas-mediated alleviation of NFκB activity. *Sci. Adv.* 5: eaau7802.

RESEARCH USE

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



See **p300 (F-4): sc-48343** for p300 antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.