

# CBP20 (T-15): sc-23627

## BACKGROUND

In eukaryotes, the majority of mRNAs have an m(7)G cap, which is added cotranscriptionally and plays a critical role in many aspects of mRNA metabolism. The effect of the cap on translation is mediated by the initiation factor eIF-4F, whereas the effect on pre-mRNA splicing involves a nuclear complex (CBC). CBC consists of two cap binding proteins, CBP20 and CBP80, which mediate the stimulatory functions of the cap in pre-mRNA splicing, 3' end formation and U snRNA export. The genes CBC1 and CBC2 encode CBP80 and CBP20, respectively. CBP80 comprises three domains, each containing a MIF4G domain. CBP20 has an RNAP fold and associates with the second and third domains of CBP80. CBP also plays a role in nonsense-mediated decay (NMD), a process which eliminates mRNAs, and prematurely terminates translation. CBP80-bound mRNA undergoes a "pioneer" round of translation before CBP80-CBP20 are replaced by eIF4E, and Upf2 and Upf3 proteins.

## REFERENCES

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3. Das, B., Guo, Z., Russo, P., Chartrand, P. and Sherman, F. 2000. The role of nuclear cap binding protein Cbc1p of yeast in mRNA termination and degradation. *Mol. Cell. Biol.* 20: 2827-2838.
4. McKendrick, L., Thompson, E., Ferreira, J., Morley, S.J. and Lewis, J.D. 2001. Interaction of eukaryotic translation initiation factor 4G with the nuclear cap-binding complex provides a link between nuclear and cytoplasmic functions of the m(7) guanosine cap. *Mol. Cell. Biol.* 21: 3632-3641.
5. Mazza, C., Ohno, M., Segref, A., Mattaj, I.W. and Cusack, S. 2001. Crystal structure of the human nuclear cap binding complex. *Mol. Cell* 8: 383-396.
6. Ishigaki, Y., Li, X., Serin, G. and Maquat, L.E. 2001. Evidence for a pioneer round of mRNA translation: mRNAs subject to nonsense-mediated decay in mammalian cells are bound by CBP80 and CBP20. *Cell* 106: 607-617.

## CHROMOSOMAL LOCATION

Genetic locus: NCBP2 (human) mapping to 3q29; Ncbp2 (mouse) mapping to 16 B2.

## SOURCE

CBP20 (T-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of CBP20 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23627 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CBP20 (T-15) is recommended for detection of CBP20 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

CBP20 (T-15) is also recommended for detection of CBP20 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CBP20 siRNA (h): sc-38249, CBP20 siRNA (m): sc-38250, CBP20 shRNA Plasmid (h): sc-38249-SH, CBP20 shRNA Plasmid (m): sc-38250-SH, CBP20 shRNA (h) Lentiviral Particles: sc-38249-V and CBP20 shRNA (m) Lentiviral Particles: sc-38250-V.

Molecular Weight of CBP20: 20 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa nuclear extract: sc-2120 or SK-BR-3 nuclear extract: sc-2134.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

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

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **CBP20 (B-1): sc-137123**, our highly recommended monoclonal alternative to CBP20 (T-15).