

# CBP80 (h): 293T Lysate: sc-175330

## BACKGROUND

In eukaryotes, the majority of mRNAs have an m7G 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 eIF4F, 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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2. Izaurralde, E., Lewis, J., Gamberi, C., Jarmolowski, A., McGuigan, C. and Mattaj, I.W. 1995. A cap binding protein complex mediating U snRNA export. *Nature* 376: 709-712.
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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 m7 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: NCBP1 (human) mapping to 9q22.33.

## PRODUCT

CBP80 (h): 293T Lysate represents a lysate of human CBP80 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## PROTOCOLS

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

## APPLICATIONS

CBP80 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CBP80 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

## RESEARCH USE

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