SANTA CRUZ BIOTECHNOLOGY, INC.

CBP20 (h): 293 Lysate: sc-110845

BACKGROUND

In eukaryotes, the majority of mRNAs have an mG cap, which is added co-transcriptionally 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), which eliminates mRNAs, which prematurely terminate translation. CBP80-bound mRNA undergoes a "pio-neer" round of translation before CBP80-CBP20 are replaced by eIF4E, and Upf2 and Upf3 proteins.

REFERENCES

1. Izaurralde, E., Lewis, J., McGuigan, C., Jankowska, M., Darzynkiewicz, E. and Mattaj, I.W. 1994. A nuclear cap binding protein complex involved in pre-mRNA splicing. Cell 78: 657-668.
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.
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. 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.
5. 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.
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.

PRODUCT

CBP20 (h): 293 Lysate represents a lysate of human CBP20 transfected 293 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 for detailed protocols and support products.

APPLICATIONS

CBP20 (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive CBP20 antibodies. Recommended use: 10-20 µl per lane.

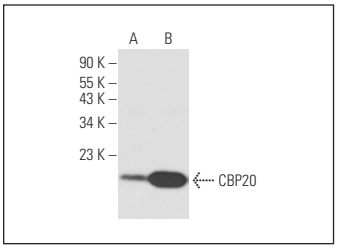
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-tranfected 293 cells.

CBP20 (B-1): sc-137123 is recommended as a positive control antibody for Western Blot analysis of enhanced human CBP20 expression in CBP20 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



CBP20 (B-1): sc-137123. Western blot analysis of CBP20 expression in non-transfected: sc-110760 (**A**) and human CBP20 transfected: sc-110845 (**B**) 293 whole cell lysates.

RESEARCH USE

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