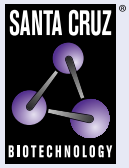
SANTA CRUZ BIOTECHNOLOGY, INC.

CBP20 (B-1): sc-137123



The Power to Question

BACKGROUND

In eukaryotes, the majority of mRNAs have an m^7G 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), which eliminates mRNAs, which prematurely terminate translation. CBP80-bound mRNA undergoes a "pioneer" round of translation before CBP80-CBP20 are replaced by eIF4E, and Upf2 and Upf3 proteins.

REFERENCES

1. Izaurralde, E., et al. 1994. A nuclear cap binding protein complex involved in pre-mRNA splicing. Cell 78: 657-668.
2. Izaurralde, E., et al. 1995. A cap-binding protein complex mediating U snRNA export. Nature 376: 709-712.
3. Das, B., et al. 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., et al. 2001. Crystal structure of the human nuclear cap binding complex. Mol. Cell 8: 383-396.
5. Ishigaki, Y., et al. 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 (B-1) is a mouse monoclonal antibody raised against amino acids 1-156 representing full length CBP20 of human origin.

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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-137123 X, 200 µg/0.1 ml.

CBP20 (B-1) is available conjugated to agarose (sc-137123 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137123 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137123 PE), fluorescein (sc-137123 FITC), Alexa Fluor® 488 (sc-137123 AF488), Alexa Fluor® 546 (sc-137123 AF546), Alexa Fluor® 594 (sc-137123 AF594) or Alexa Fluor® 647 (sc-137123 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137123 AF680) or Alexa Fluor® 790 (sc-137123 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

CBP20 (B-1) is recommended for detection of CBP20 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CBP20 (B-1) is also recommended for detection of CBP20 in additional species, including equine, canine and bovine.

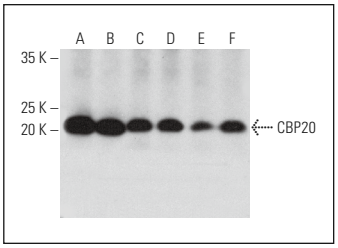
Suitable for use as control antibody for CBP20 siRNA (h): sc-38249, CBP20 siRNA (m): sc-38250, CBP20 shRNA Plasmid (h): sc-38249-SH, CBP20 shRNA Plasmid (m): sc-38250-SH, CBP20 shRNA (h) Lentiviral Particles: sc-38249-V and CBP20 shRNA (m) Lentiviral Particles: sc-38250-V.

CBP20 (B-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

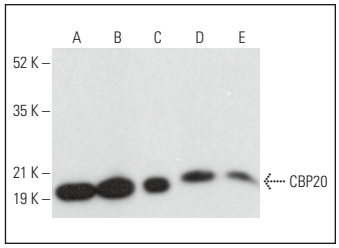
Molecular Weight of CBP20: 20 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, NIH/3T3 whole cell lysate: sc-2210 or HeLa whole cell lysate: sc-2200.

DATA



CBP20 (B-1): sc-137123. Western blot analysis of CBP20 expression in HeLa (**A**), CCRF-CEM (**B**), NIH/3T3 (**C**), Neuro-2A (**D**), NRK (**E**) and C6 (**F**) whole cell lysates.



CBP20 (B-1): sc-137123. Western blot analysis of CBP20 expression in HeLa (**A**), Jurkat (**B**) and NIH/3T3 (**C**) nuclear extracts and C6 (**D**) and 3611-RF (**E**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chen, H.H., et al. 2018. DDX3 activates CBC-eIF3-mediated translation of uORF-containing oncogenic mRNAs to promote metastasis in HNSCC. Cancer Res. 78: 4512-4523.

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 for detailed protocols and support products.