SANTA CRUZ BIOTECHNOLOGY, INC.

CBP80 (E-7): sc-271304

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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), 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.

CHROMOSOMAL LOCATION

Genetic locus: NCBP1 (human) mapping to 9q22.33; Ncbp1 (mouse) mapping to 4 B1.

SOURCE

CBP80 (E-7) is a mouse monoclonal antibody raised against amino acids 21-320 mapping at the N-terminus of CBP80 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} 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-271304 X, 200 µg/0.1 ml.

CBP80 (E-7) is available conjugated to agarose (sc-271304 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271304 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271304 PE), fluorescein (sc-271304 FITC), Alexa Fluor® 488 (sc-271304 AF488), Alexa Fluor® 546 (sc-271304 AF546), Alexa Fluor® 594 (sc-271304 AF594) or Alexa Fluor® 647 (sc-271304 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271304 AF680) or Alexa Fluor® 790 (sc-271304 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

CBP80 (E-7) is recommended for detection of CBP80 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).

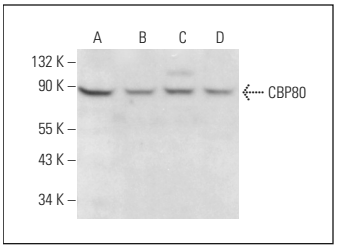
Suitable for use as control antibody for CBP80 siRNA (h): sc-43669, CBP80 siRNA (m): sc-60012, CBP80 shRNA Plasmid (h): sc-43669-SH, CBP80 shRNA Plasmid (m): sc-60012-SH, CBP80 shRNA (h) Lentiviral Particles: sc-43669-V and CBP80 shRNA (m) Lentiviral Particles: sc-60012-V.

CBP80 (E-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

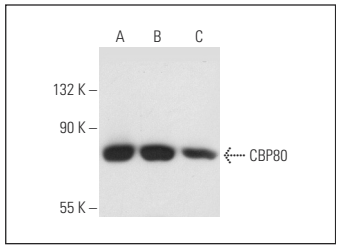
Molecular Weight of CBP80: 80 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, HeLa nuclear extract: sc-2120 or A-431 whole cell lysate: sc-2201.

DATA



CBP80 (E-7): sc-271304. Western blot analysis of CBP80 expression in HeLa (**A**), A549 (**B**), KNRK (**C**) and PC-12 (**D**) whole cell lysates.



CBP80 (E-7): sc-271304. Western blot analysis of CBP80 expression in Jurkat (**A**) and HeLa (**B**) nuclear extracts and A-431 whole cell lysate (**C**).

SELECT PRODUCT CITATIONS

1. Stoll, G., et al. 2013. Deletion of TOP3β, a component of FMRP-containing mRNPs, contributes to neurodevelopmental disorders. Nat. Neurosci. 16: 1228-1237.
2. Geibler, V., et al. 2013. The RNA helicase Ddx5/p68 binds to hUpf3 and enhances NMD of Ddx17/p72 and Smg5 mRNA. Nucleic Acids Res. 41: 7875-7888.
3. Lai, F., et al. 2015. Integrator mediates the biogenesis of enhancer RNAs. Nature 525: 399-403.
4. Martinez-Nunez, R.T., et al. 2017. Modulation of nonsense mediated decay by rapamycin. Nucleic Acids Res. 45: 3448-3459.
5. Mateu-Regué, À., et al. 2020. Cytoplasmic mRNPs revisited: singletons and condensates. Bioessays 42: e2000097.

RESEARCH USE

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