SANTA CRUZ BIOTECHNOLOGY, INC.

CBP20 (FL-156): sc-48793

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

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. McKendrick, L., et al. 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.

CHROMOSOMAL LOCATION

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

SOURCE

CBP20 (FL-156) is a rabbit polyclonal antibody raised against amino acids 1-156 representing full length 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-48793 X, 200 µg/0.1 ml.

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 or our catalog for detailed protocols and support products.

APPLICATIONS

CBP20 (FL-156) 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), 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), immunohistochemistry (including paraffin-embedded sections) (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 (FL-156) is also recommended for detection of CBP20 in additional species, including equine, canine, bovine, porcine and avian.

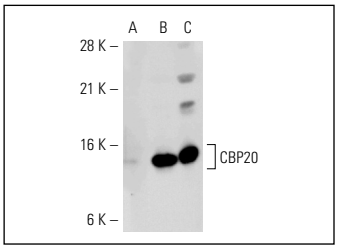
Suitable for use as control antibody for CBP20 siRNA (h): sc-38249, CBP20 siRNA (m): sc-38250, CBP20 shRNA Plasmid (h): sc-38249-SH, CBP20 shRNA Plasmid (m): sc-38250-SH, CBP20 shRNA (h) Lentiviral Particles: sc-38249-V and CBP20 shRNA (m) Lentiviral Particles: sc-38250-V.

CBP20 (FL-156) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

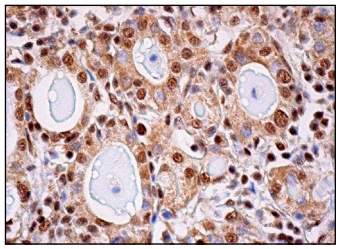
Molecular Weight of CBP20: 20 kDa.

Positive Controls: CBP20 (h): 293 Lysate: sc-110845, HeLa whole cell lysate: sc-2200 or SK-BR-3 nuclear extract: sc-2134.

DATA



CBP20 (FL-156): sc-48793. Western blot analysis of CBP20 expression in non-transfected 293: sc-110760 (**A**), human CBP20 transfected 293: sc-110845 (**B**) and HeLa (**C**) whole cell lysates.



CBP20 (FL-156): sc-48793. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing nuclear and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Lenasi, T., et al. 2011. Cap-binding protein complex links pre-mRNA capping to transcription elongation and alternative splicing through positive transcription elongation factor b (P-TEFβ). J. Biol. Chem. 286: 22758-22768.
2. Stoll, G,. et al. 2013. Deletion of TOP3β, a component of FMRP-containing mRNPs, contributes to neurodevelopmental disorders. Nat. Neurosci. 16: 1228-1237.