SANTA CRUZ BIOTECHNOLOGY, INC.

SNAPC 43 (N-16): 20240

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

TATA-box binding protein (TBP) interactions with TBP-associated factors (TAFs) are required for the transcription of RNA polymerases. One particular TBP-TAF complex, snRNA-activating protein complex (SNAPC), is unusual in that it regulates basal transcription of both RNA polymerase II and III by binding specifically to a non-TATA-box proximal sequence element (PSE). SNAPC consists of five subunits with molecular masses of 19, 43, 45, 50 and 190 kDa. SNAPC binds to Oct-1 and TBP, which are activators of snRNA and RNA polymerases, respectively. The POU domain of Oct-1 binds to SNAPC 190 and effectively recruits SNAPC to the PSE. The cooperative binding of SNAPC and Oct-1 to their respective sequence elements is mediated by a nucleosome positioned between the two sequence elements. SNAPC 19 mediates the assembly of the subunits to form a functional SNAPC transcription regulator. SNAPC 50 (also designated PTFβ) contains two zinc finger motifs and binds to SNAPC 43 (also designated PTFγ) but not SNAPC 45 (PTFδ).

REFERENCES

1. Sadowski, C.L., Henry, R.W., Lobo, S.M., and Hernandez, N. 1993. Targeting TBP to a non-TATA box cis-regulatory element: a TBP-containing complex activates transcription from snRNA promoters through the PSE. Genes Dev. 7: 1535-1548.
2. Henry, R.W., Sadowski, C.L., Kobayashi, R., and Hernandez, N. 1995. A TBP-TAF complex required for transcription of human snRNA genes by RNA polymerase II and III. Nature 374: 653-666.
3. Sadowski, C.L., Henry, R.W., Kobayashi, R., and Hernandez, N. 1996. The SNAP45 subunit of the small nuclear RNA (snRNA) activating protein complex is required for RNA polymerase II and III snRNA gene transcription and interacts with the TATA box binding protein. Proc. Natl. Acad. Sci. USA 93: 4289-4293.
4. Henry, R.W., Ma, B., Sadowski, C.L., Kobayashi, R., and Hernandez, N. 1996. Cloning and characterization of SNAP50, a subunit of the snRNA-activating protein complex SNAPC. EMBO J. 15: 7129-7136.
5. Ford, E. and Hernandez, N. 1997. Characterization of a trimeric complex containing Oct-1, SNAPC, and DNA. J. Biol. Chem. 272: 16048-16055.
6. Mittal, V. and Hernandez, N. 1997. Role for the amino-terminal region of human TBP in U6 snRNA transcription. Science 275: 1136-1140.
7. Henry, R.W., Mittal, V., Ma, B., Kobayashi, R., and Hernandez, N. 1998. SNAP19 mediates the assembly of a functional core promoter complex (SNAPC) shared by RNA polymerases II and III. Genes Dev. 12: 2664-2672.
8. Ford, E., Strubin, M., and Hernandez, N. 1998. The Oct-1 POU domain activates snRNA gene transcription by contacting a region in the SNAPC largest subunit that bears sequence similarities to the Oct-1 coactivator OBF-1. Genes Dev. 12: 3528-3540.
9. Zhao, X., Pendergrast, P.S., and Hernandez, N. 2001. A positioned nucleosome on the human U6 promoter allows recruitment of SNAPC by the Oct-1 POU domain. Mol. Cell. Biol. 7: 539-549.

RESEARCH USE

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

SOURCE

SNAPC 43 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of SNAPC 43 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.

Blocking peptide available for competition studies, 20240 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SNAPC 43 (N-16) is recommended for detection of SNAPC 43 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.