SANTA CRUZ BIOTECHNOLOGY, INC.

SNAPC 50 siRNA (h): sc-38403

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 of varying size. 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., et al. 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., et al. 1995. A TBP-TAF complex required for transcription of human snRNA genes by RNA polymerase II and III. Nature 374: 653-666.
3. Henry, R.W., et al. 1996. Cloning and characterization of SNAP50, a subunit of the snRNA-activating protein complex SNAPC. EMBO J. 15: 7129-7136.
4. Sadowski, C.L., et al. 1996. The SNAP 45 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.
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., et al. 1998. SNAP 19 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., et al. 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., et al. 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.

CHROMOSOMAL LOCATION

Genetic locus: SNAPC3 (human) mapping to 9p22.3.

PROTOCOLS

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

PRODUCT

SNAPC 50 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SNAPC 50 shRNA Plasmid (h): sc-38403-SH and SNAPC 50 shRNA (h) Lentiviral Particles: sc-38403-V as alternate gene silencing products.

For independent verification of SNAPC 50 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-38403A, sc-38403B and sc-38403C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SNAPC 50 siRNA (h) is recommended for the inhibition of SNAPC 50 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SNAPC 50 gene expression knockdown using RT-PCR Primer: SNAPC 50 (h)-PR: sc-38403-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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