SANTA CRUZ BIOTECHNOLOGY, INC.

Positive cofactor 4 (h2): 293 Lysate: sc-112271

BACKGROUND

In eukaryotic cells, transcription is regulated in part by high molecular weight coactivating complexes that mediate signals between transcriptional activators and RNA polymerase. RNA polymerase II (RNAPII) holoenzyme contains numerous proteins that largely consist of RNA processing factors, RNA helicase, general transcription factors and SRB co-activating complexes. RNAPII mediated basal- and gene-specific transcriptional activation requires the association of various cofactors that includes PC4 (human Positive cofactor 4). Positive cofactor 4 interacts with the activation domain of transcription factor IIA (TFIIA) and TATA-binding protein (TBP)-associated factors (TAFs) to directly bind to double stranded DNA. Positive cofactor 4 induces both activation and repression of RNAPII basal transcription, depending on the presence or absence of these transcription factors and holoenzyme components. Additionally, Positive cofactor 4 is phosphorylated by TFIID and TFIIH, which releases Positive cofactor 4 from the DNA promoter region and thereby inhibits the assembly of Positive cofactor 4 into the transcriptional promoting complex and blocks transcription.

REFERENCES

1. Ge, H. and Roeder, R.G. 1994. Purification, cloning, and characterization of a human coactivator, PC4, that mediates transcriptional activation of class II genes. Cell 78: 513-523.
2. Kaiser, K., Stelzer, G. and Meisterernst, M. 1995. The coactivator p15 (PC4) initiates transcriptional activation during TFIIA-TFIID-promoter complex formation. EMBO J. 14: 3520-3527.
3. Chao, D.M., Gadbois, E.L., Murray, P.J., Anderson, S.F., Sonu, M.S., Parvin, J.D. and Young, R.A. 1996. A mammalian SRB protein associated with an RNA polymerase II holoenzyme. Nature 380: 82-85.
4. Malik, S., Guermah, M. and Roeder, R.G. 1998. A dynamic model for PC4 coactivator function in RNA polymerase II transcription. Proc. Natl. Acad. Sci. USA 95: 2192-2197.
5. Jiang, Y.W., Veschambre, P., Erdjument-Bromage, H., Tempst, P., Conaway, J.W., Conaway, R.C. and Kornberg, R.D. 1998. Mammalian mediator of transcriptional regulation and its possible role as an end-point of signal transduction pathways. Proc. Natl. Acad. Sci. USA 95: 8538-8543.
6. Wu, S.Y. and Chiang, C.M. 1998. Properties of PC4 and an RNA polymerase II complex in directing activated and basal transcription *in vitro.* J. Biol. Chem. 273: 12492-12498.

CHROMOSOMAL LOCATION

Genetic locus: SUB1 (human) mapping to 5p13.3.

PRODUCT

Positive cofactor 4 (h2): 293 Lysate represents a lysate of human Positive cofactor 4 transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

Positive cofactor 4 (h2): 293 Lysate is suitable as a Western Blotting positive control for human reactive Positive cofactor 4 antibodies. Recommended use: 10-20 µl per lane.

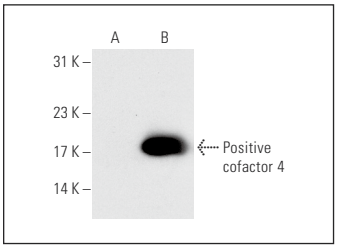
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-tranfected 293 cells.

Positive cofactor 4 (H-8): sc-166279 is recommended as a positive control antibody for Western Blot analysis of enhanced human Positive cofactor 4 expression in Positive cofactor 4 transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

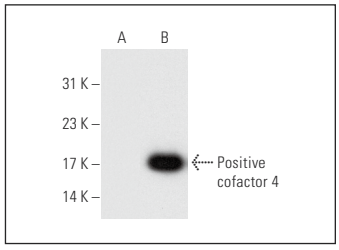
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



Positive cofactor 4 (H-8): sc-166279. Western blot analysis of Positive cofactor 4 expression in non-transfected: sc-110760 (**A**) and human Positive cofactor 4 transfected: sc-112271 (**B**) 293 whole cell lysates.



Positive cofactor 4 (H-12): sc-166280. Western blot analysis of Positive cofactor 4 expression in non-transfected: sc-110760 (**A**) and human Positive cofactor 4 transfected: sc-112271 (**B**) 293 whole cell lysates.

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.