

PC4 (G-20): sc-22895

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 coactivating complexes. RNAPII mediated basal and gene-specific transcriptional activation requires the association of various cofactors that include PC4 (human positive cofactor 4). PC4 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. PC4 induces both activation and repression of RNAPII basal transcription depending on the presence or absence of these transcription factors and holoenzyme components. Additionally, PC4 is phosphorylated by TFIIID and TFIIH, which releases PC4 from the DNA promoter region and, thereby, inhibits the assembly of PC4 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., Stelzel, G. and Meisterernst, M. 1995. The coactivator p15 (PC4) initiates transcriptional activation during TFIIA-TFIIID-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: Pcsk4 (mouse) mapping to 10 C1.

SOURCE

PC4 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PC4 of mouse origin.

STORAGE

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

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, sc-22895 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PC4 (G-20) is recommended for detection of PC4 of mouse and rat 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).

PC4 (G-20) is also recommended for detection of PC4 in additional species, including bovine and porcine.

Suitable for use as control antibody for PC4 siRNA (m): sc-152049, PC4 shRNA Plasmid (m): sc-152049-SH and PC4 shRNA (m) Lentiviral Particles: sc-152049-V.

Molecular Weight of PC4 precursor: 72 kDa.

Molecular Weight of mature PC4: 54 kDa.

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.

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.