SANTA CRUZ BIOTECHNOLOGY, INC.

FCP1a (C-16): sc-26626

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The Power to Question

BACKGROUND

RNA polymerase II (RNAP II) comprises a 12 subunit protein complex that mediates transcription. RNAP II contains a unique carboxy terminal domain (CTD), which consists of 52 repeats of the consensus heptapeptide Tyr-Ser-Pro-Thr-Ser-Pro-Ser. The RNAP II isoform with an unphosphorylated CTD associates with transcription initiation complexes, whereas the isoform with a phosphorylated CTD is involved in transcription elongation. FCP1, also designated TFIIF-associated CTD phosphatase, is a protein phosphatase dedicated to the CTD of RNAP II that mediates the recycling of RNAP II during the transcription cycle. FCP1 specifically targets phosphorylated CTD serine 2 and 5 with similar affinities. Phosphorylation of FCP1 itself is necessary for sufficient activity of the protein and its interaction with TFIIF (1,3,5). Upon activation, the a-helical carboxy terminus of FCP1 binds to RAP74 to form a complex. FCP1 also represses HIV-1 Tat-mediated transactivation, and, therefore, may represent a specific target for modulation of Tat activity in infected cells.

REFERENCES

1. Licciardo, P., Ruggiero, L., Lania, L. and Majello, B. 2001. Transcription activation by targeted recruitment of the RNA polymerase II CTD phosphatase FCP1. Nucleic Acids Res. 29: 3539-3545.
2. Licciardo, P., Napolitano, G., Majello, B. and Lania, L. 2001. Inhibition of Tat transactivation by the RNA polymerase II CTD-phosphatase FCP1. AIDS. 15: 301-307.
3. Mandal, S.S., Cho, H., Kim, S., Cabane, K. and Reinberg, D. 2002. FCP1, a phosphatase specific for the heptapeptide repeat of the largest subunit of RNA polymerase II, stimulates transcription elongation. Mol. Cell. Biol. 22: 7543-7552.
4. Lin, P.S., Dubois, M.F. and Dahmus, M.E. 2002. TFIIF-associating carboxyl-terminal domain phosphatase dephosphorylates phosphoserines 2 and 5 of RNA polymerase II. J. Biol. Chem. 277: 45949-45956.

CHROMOSOMAL LOCATION

Genetic locus: CTDP1 (human) mapping to 18q23; Ctdp1 (mouse) mapping to 18 E3.

SOURCE

FCP1a (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of FCP1a 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, sc-26626 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

FCP1a (C-16) is recommended for detection of FCP1a 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

FCP1a (C-16) is also recommended for detection of FCP1a in additional species, including equine, canine and porcine.

Suitable for use as control antibody for FCP1a siRNA (h): sc-39017, FCP1a shRNA Plasmid (h): sc-39017-SH and FCP1a shRNA (h) Lentiviral Particles: sc-39017-V.

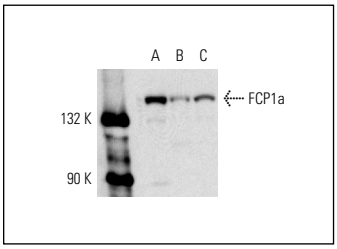
Molecular Weight of FCP1a: 150 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, NIH/3T3 nuclear extract: sc-2138 or K-562 nuclear extract: sc-2130.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



FCP1a (C-16): sc-26626. Western blot analysis of FCP1a expression in Jurkat (**A**), NIH/3T3 (**B**) and K-562 (**C**) nuclear extracts.

RESEARCH USE

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