

FCP1b (F-20): sc-26627

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. Upon activation, the α -helical carboxy-terminus of FCP1 binds to RAP74 to form a complex. FCP1 also represses HIV-1 Tat-mediated transactivation, and may therefore 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.

SOURCE

FCP1b (F-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of FCP1b of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26627 P, (100 μ g 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

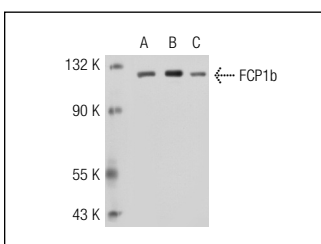
FCP1b (F-20) is recommended for detection of FCP1b of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Positive Controls: Jurkat whole cell lysate: sc-2204 or FCP1 (h): 293T Lysate: sc-116794.

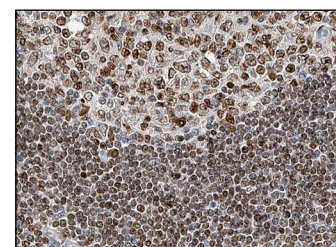
RECOMMENDED SECONDARY REAGENTS

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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



FCP1b (F-20): sc-26627. Western blot analysis of FCP1 expression in non-transfected 293T: sc-117752 (A), human FCP1 transfected 293T: sc-116794 (B) and Jurkat (C) whole cell lysates.



FCP1b (F-20): sc-26627. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing nuclear and cytoplasmic staining of germinal and non-germinal center cells at high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

RESEARCH USE

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

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Try **FCP1 (3G4): sc-293358**, our highly recommended monoclonal alternative to FCP1b (F-20).