

SPT4 (N-14): sc-13834

BACKGROUND

SPT4 (also designated suppressor of Ty4 and p14) and SPT5 (also designated DSIF p160) are highly conserved proteins from yeast to humans. Nuclear SPT4 and SPT5 are involved in both DRB (5,6-dichloro-1- β -D-ribofuranosylbenzimidazole)-mediated transcriptional inhibition as well as the activation of transcriptional elongation by the HIV-1 protein Tat. SPT4 binds SPT5 to form the DSIF (DRB-sensitivity-inducing factor) complex, which binds RNA polymerase II and directly regulates elongation. However, SPT5 protein in mitotic HeLa cells migrates more slowly on SDS-PAGE than does SPT5 isolated from interphase cells, as a result of enhanced SPT5 phosphorylation. The C-terminal CTR1 domain of SPT5 is the substrate for P-TEFb phosphorylation, which is critical for SPT5 function as a regulator of transcriptional elongation. Murine proteins Supt4h1, homolog of human SPT4, and Supt4h2 also play a role in mRNA processing and transcription elongation.

REFERENCES

- Chiang, P.W., et al. 1996. Isolation and characterization of the human and mouse homologues (SUPT4H and Supt4h) of the yeast SPT4 gene. *Genomics* 34: 368-375.
- Hartzog, G.A., et al. 1996. Identification and analysis of a functional human homolog of the SPT4 gene of *Saccharomyces cerevisiae*. *Mol. Cell. Biol.* 16: 2848-2856.
- Wada, T., et al. 1998. Evidence that P-TEFb alleviates the negative effect of DSIF on RNA polymerase II-dependent transcription *in vitro*. *EMBO J.* 17: 7395-7403.
- Wada, T., et al. 1998. DSIF, a novel transcription elongation factor that regulates RNA polymerase II processivity, is composed of human SPT4 and SPT5 homologs. *Genes Dev.* 12: 343-356.
- Yamaguchi, Y., et al. 1999. Structure and function of the human transcription elongation factor DSIF. *J. Biol. Chem.* 274: 8085-8092.

CHROMOSOMAL LOCATION

Genetic locus: SUPT4H1 (human) mapping to 17q22; Supt4h1 (mouse) mapping to 11 C, Gm3258 (mouse) mapping to 10 C1.

SOURCE

SPT4 (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of SPT4 of mouse 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-13834 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13834 X, 200 μ g/0.1 ml.

RESEARCH USE

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

APPLICATIONS

SPT4 (N-14) is recommended for detection of SPT4 of human origin, Supt4h1 and Supt4h2 of mouse origin and the corresponding rat homolog 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).

SPT4 (N-14) is also recommended for detection of SPT4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SPT4 siRNA (h): sc-38438, SPT4 shRNA Plasmid (h): sc-38438-SH and SPT4 shRNA (h) Lentiviral Particles: sc-38438-V.

SPT4 (N-14) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of SPT4: 14 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.

STORAGE

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

PROTOCOLS

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