

# SPT4 (A-12): sc-515238

## 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- $\beta$ -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-TEF $\beta$  alleviates the negative effect of DSIF on RNA polymerase II-dependent transcription *in vitro*. *EMBO J.* 17: 7395-7403.

## CHROMOSOMAL LOCATION

Genetic locus: SUPT4H1 (human) mapping to 17q22; Supt4b (mouse) mapping to 10 C1.

## SOURCE

SPT4 (A-12) is a mouse monoclonal antibody raised against amino acids 1-117 representing full length SPT4 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $\kappa$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-515238 X, 200  $\mu$ g/0.1 ml.

SPT4 (A-12) is available conjugated to agarose (sc-515238 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515238 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515238 PE), fluorescein (sc-515238 FITC), Alexa Fluor<sup>®</sup> 488 (sc-515238 AF488), Alexa Fluor<sup>®</sup> 546 (sc-515238 AF546), Alexa Fluor<sup>®</sup> 594 (sc-515238 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-515238 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-515238 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-515238 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

SPT4 (A-12) is recommended for detection of SPT4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

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 (A-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

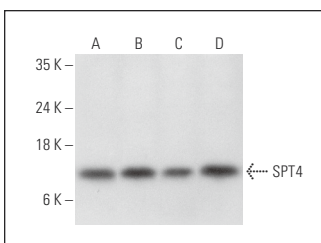
Molecular Weight of SPT4: 14 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, JAR cell lysate: sc-2276 or MCF7 whole cell lysate: sc-2206.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



SPT4 (A-12): sc-515238. Western blot analysis of SPT4 expression in NTERA-2 cl.D1 (A), JAR (B), MCF7 (C) and A549 (D) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Baluapuri, A., et al. 2019. MYC recruits SPT5 to RNA polymerase II to promote processive transcription elongation. *Mol. Cell* 74: 674-687.e11.

## STORAGE

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