

## SPT5 (D-3): sc-133217



The Power to Question

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: SUPT5H (human) mapping to 19q13.2; Supt5 (mouse) mapping to 7 A3.

## SOURCE

SPT5 (D-3) is a mouse monoclonal antibody raised against amino acids 61-360 mapping near the N-terminus of SPT5 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> 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-133217 X, 200  $\mu$ g/0.1 ml.

SPT5 (D-3) is available conjugated to agarose (sc-133217 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-133217 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133217 PE), fluorescein (sc-133217 FITC), Alexa Fluor<sup>®</sup> 488 (sc-133217 AF488), Alexa Fluor<sup>®</sup> 546 (sc-133217 AF546), Alexa Fluor<sup>®</sup> 594 (sc-133217 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-133217 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-133217 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-133217 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

SPT5 (D-3) is recommended for detection of SPT5 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), 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).

Suitable for use as control antibody for SPT5 siRNA (h): sc-38440, SPT5 siRNA (m): sc-38441, SPT5 shRNA Plasmid (h): sc-38440-SH, SPT5 shRNA Plasmid (m): sc-38441-SH, SPT5 shRNA (h) Lentiviral Particles: sc-38440-V and SPT5 shRNA (m) Lentiviral Particles: sc-38441-V.

SPT5 (D-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

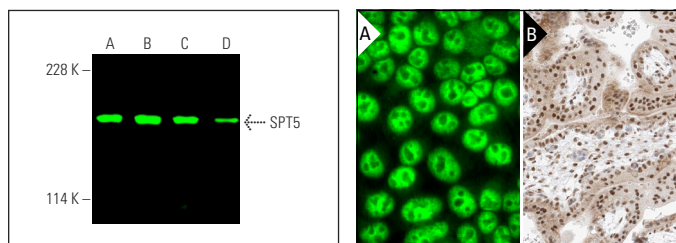
Molecular Weight of SPT5: 160 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or F9 cell lysate: sc-2245.

## STORAGE

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

## DATA



SPT5 (D-3): sc-133217. Near-infrared western blot analysis of SPT5 expression in CCRF-CEM (A), DU 145 (B) and HeLa (C) nuclear extracts and F9 whole cell lysate (D). Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgGx BP-CFL 680: sc-516180.

SPT5 (D-3): sc-133217. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human placenta tissue showing nuclear and cytoplasmic staining of trophoblastic cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

## SELECT PRODUCT CITATIONS

1. Londhe, P. and Davie, J.K. 2013. Interferon- $\gamma$  resets muscle cell fate by stimulating the sequential recruitment of JARID2 and PRC2 to promoters to repress myogenesis. *Sci. Signal.* 6: ra107.
2. Sansó, M., et al. 2016. P-TEFb regulation of transcription termination factor Xrn2 revealed by a chemical genetic screen for Cdk9 substrates. *Genes Dev.* 30: 117-131.
3. Winter, G.E., et al. 2017. BET bromodomain proteins function as master transcription elongation factors independent of Cdk9 recruitment. *Mol. Cell* 67: 5-18.e19.
4. Baluapuri, A., et al. 2019. Myc recruits SPT5 to RNA polymerase II to promote processive transcription elongation. *Mol. Cell* 74: 674-687.e11.
5. Nakazawa, Y., et al. 2020. Ubiquitination of DNA damage-stalled RNAPII promotes transcription-coupled repair. *Cell* 180: 1228-1244.e24.
6. Wang, J., et al. 2021. Persistence of RNA transcription during DNA replication delays duplication of transcription start sites until G<sub>2</sub>/M. *Cell Rep.* 34: 108759.
7. Park, K., et al. 2022. ZWC complex-mediated SPT5 phosphorylation suppresses divergent antisense RNA transcription at active gene promoters. *Nucleic Acids Res.* 50: 3835-3851.
8. Gorbovytska, V., et al. 2022. Enhancer RNAs stimulate Pol II pause release by harnessing multivalent interactions to NELF. *Nat. Commun.* 13: 2429.
9. Gaballa, A., et al. 2024. PAF1c links S-phase progression to immune evasion and MYC function in pancreatic carcinoma. *Nat. Commun.* 15: 1446.

## RESEARCH USE

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

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA