SANTA CRUZ BIOTECHNOLOGY, INC.

SR (1H4): sc-13509

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Pre-mRNA splicing enhancer elements are short RNA sequences capable of activating weak splice sites in nearby introns that are required for accurate splice site recognition and the control of alternative splicing. Splicing enhancer elements contain specific binding sites for serine/arginine (SR)-rich splicing factors, which include SC35, 9G8, SRp20, and SF2/ASF. The family of SR factors all contain one or more RNA recognition motifs (RRM) and an arginine/serine (RS)-rich domain. They are not only essential for constitutive splicing but also regulate splicing in a concentration-dependent manner by influencing the selection of alternative splice sites. The majority of SR proteins, including SC35 and SRp40, are confined to the nucleus, while SF2/ASF, SRp20, and 9G8 are continuously shuttled between the nucleus and the cytoplasm and contribute to mRNA transport. The activity of SR proteins in regulated splicing is antagonized by members of the hnRNP A/B family of proteins, which induce drastic shifts in the selection of splicing sites. An additional SR-associated protein, p32, tightly associates with SR factors and preferentially inhibits ASF/SF2 functioning as both a splicing enhancer and splicing repressor protein by preventing the stable interaction of ASF/SF2 and RNA.

SOURCE

SR (1H4) is a mouse monoclonal antibody raised against full length SR of *Xenopus* origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SR (1H4) is available conjugated to agarose (sc-13509 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13509 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13509 PE), fluorescein (sc-13509 FITC), Alexa Fluor® 488 (sc-13509 AF488), Alexa Fluor® 546 (sc-13509 AF546), Alexa Fluor® 594 (sc-13509 AF594) or Alexa Fluor® 647 (sc-13509 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13509 AF680) or Alexa Fluor® 790 (sc-13509 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SR (1H4) is recommended for detection of SR RNA processing factors, including SRp75, SRp55, SRp40, SRp30a/b and SRp20 of human and *Xenopus laevis* 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), 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).

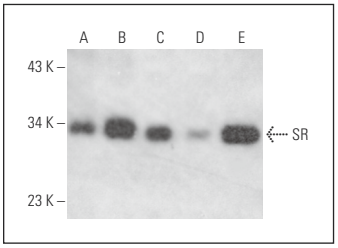
SR (1H4) is also recommended for detection of SR RNA processing factors, including SRp75, SRp55, SRp40, SRp30a/b and SRp20 in additional species, including bovine and avian.

Positive Controls: K-562 nuclear extract: sc-2130, HeLa nuclear extract: sc-2120 or MOLT-4 nuclear extract: sc-2151.

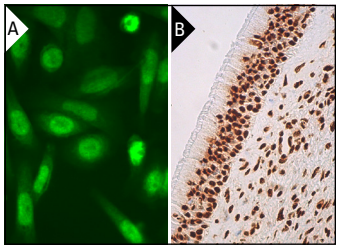
STORAGE

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

DATA



SR (1H4): sc-13509. Western blot analysis of SR expression in HL-60 (**A**), K-562 (**B**), HeLa (**C**), PC-3 (**D**) and MOLT-4 (**E**) nuclear extracts.



SR (1H4) Alexa Fluor® 488: sc-13509 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**A**). SR (1H4): sc-13509. Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing nuclear staining of respiratory epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Zhou, C. and Knipe, D.M. 2002. Association of herpes simplex virus type 1 ICP8 and ICP27 proteins with cellular RNA polymerase II holoenzyme. J. Virol. 76: 5893-5904.
2. Mangs, A.H., et al. 2006. XE7: a novel splicing factor that interacts with ASF/SF2 and ZNF265. Nucleic Acids Res. 34: 4976-4986.
3. Fay, J., et al. 2009. Increased expression of cellular RNA-binding proteins in HPV-induced neoplasia and cervical cancer. J. Med. Virol. 81: 897-907.
4. Amin, E.M., et al. 2011. WT1 mutants reveal SRPK1 to be a downstream angiogenesis target by altering VEGF splicing. Cancer Cell 20: 768-780.
5. Cote, G.J., et al. 2012. Hydrogen peroxide alters splicing of soluble guanylyl cyclase and selectively modulates expression of splicing regulators in human cancer cells. PLoS ONE 7: e41099.
6. Rahman, M.A., et al. 2013. HnRNP L and hnRNP LL antagonistically modulate PTB-mediated splicing suppression of CHRNA1 pre-mRNA. Sci. Rep. 3: 2931.
7. Vautrot, V., et al. 2016. Enhanced SRSF5 protein expression reinforces Lamin A mRNA production in HeLa cells and fibroblasts of progeria patients. Hum. Mutat. 37: 280-291.
8. Preubner, M., et al. 2017. Body temperature cycles control rhythmic alternative splicing in mammals. Mol. Cell 67: 433-446.
9. Bowler, E., et al. 2018. Hypoxia leads to significant changes in alternative splicing and elevated expression of CLK splice factor kinases in PC3 prostate cancer cells. BMC Cancer 18: 355.

RESEARCH USE

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