SANTA CRUZ BIOTECHNOLOGY, INC.

Sp4 (V-20): sc-645

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Sp transcription factor family includes Sp1, Sp2, Sp3 (SPR-2) and Sp4 (SPR-1). Sp transcription factors share similar structures but do not share similar functions. All four proteins contain a highly conserved DNA-binding domain composed of three zinc fingers at the C-terminus. Sp family members bind the consensus sequence GGGGCGGGGC and other closely related sequences which are known as GC boxes. Sp1, Sp3 and Sp4 share a high affinity for GC boxes while Sp2 does not. Sp2 only weakly binds to GT boxes. Sp1, Sp2 and Sp3 are ubiquitously expressed, while Sp4 is abundantly expressed in brain with limited expression in other tissues. Sp1 and Sp3, but not Sp2 or Sp4, interact with E2, a regulatory element for the β4 subunit of neuronal nicotinic acetylcholine receptors. Sp3 is the only Sp member to inhibit Sp1 and Sp4 mediated transcription.

CHROMOSOMAL LOCATION

Genetic locus: SP4 (human) mapping to 7p15.3; Sp4 (mouse) mapping to 12 F2.

SOURCE

Sp4 (V-20) is available as either rabbit (sc-645) or goat (sc-645-G) polyclonal affinity purified antibody raised against a peptide mapping at the C-terminus of Sp4 of human origin.

PRODUCT

Each vial contains 200 µg IgG 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-645 X, 200 µg/0.1 ml.

Sp4 (V-20) is available conjugated to agarose (sc-645 AC), 500 µg/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-645 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Sp4 (V-20) is recommended for detection of Sp4 of mouse, rat and human 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).

Sp4 (V-20) is also recommended for detection of Sp4 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Sp4 siRNA (h): sc-36545, Sp4 siRNA (m): sc-36546, Sp4 shRNA Plasmid (h): sc-36545-SH, Sp4 shRNA Plasmid (m): sc-36546-SH, Sp4 shRNA (h) Lentiviral Particles: sc-36545-V and Sp4 shRNA (m) Lentiviral Particles: sc-36546-V.

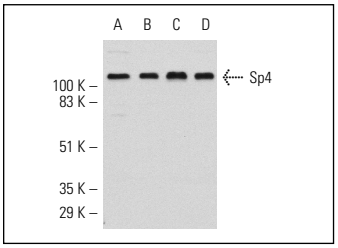
Sp4 (V-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Sp4: 80-110 kDa.

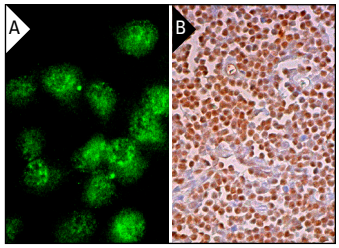
STORAGE

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

DATA



Sp4 (V-20): sc-645. Western blot analysis of Sp4 expression in NIH/3T3 (**A,B**) and KNRK (**C,D**) nuclear extracts.



Sp4 (V-20): sc-645. Immunofluorescence staining of methanol-fixed KNRK cells showing nuclear staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of cells in germinal center and cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Kumar, A.P., et al. 1997. Transcription factor Sp3 antagonizes activation of the ornithine decarboxylase promotor by Sp1. Nucleic Acids Res. 25: 2012-2019.
2. Bigger, C.B., et al. 1997. Sp1 and Sp3 regulate expression of the neuronal nicotinic acetylcholine receptor β4 subunit gene. J. Biol. Chem. 272: 25976-25982.
3. Jutooru, I., et al. 2010. Inhibition of NFκB and pancreatic cancer cell and tumor growth by curcumin is dependent on specificity protein down-regulation. J. Biol. Chem. 285: 25332-25344.
4. Jutooru, I., et al. 2010. Methyl 2-cyano-3,12-dioxooleana-1,9-dien-28-oate decreases specificity protein transcription factors and inhibits pancreatic tumor growth: role of microRNA-27a. Mol. Pharmacol. 78: 226-236.
5. Pathi, S.S., et al. 2011. GT-094, a NO-NSAID, inhibits colon cancer cell growth by activation of a reactive oxygen species-microRNA-27a: ZBTB10-specificity protein pathway. Mol. Cancer Res. 9: 195-202.
6. Milagre, I., et al. 2012. Neuronal differentiation alters the ratio of Sp transcription factors recruited to the CYP46A1 promoter. J. Neurochem. 120: 220-229.

RESEARCH USE

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