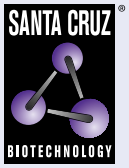
SANTA CRUZ BIOTECHNOLOGY, INC.

Sp3 (F-7): sc-28305



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. Multiple isoforms of Sp3 exist due to alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: SP3 (human) mapping to 2q31.1; Sp3 (mouse) mapping to 2 C3.

SOURCE

Sp3 (F-7) is a mouse monoclonal antibody raised against amino acids 126-350 of Sp3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} 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-28305 X, 200 µg/0.1 ml.

Sp3 (F-7) is available conjugated to agarose (sc-28305 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28305 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28305 PE), fluorescein (sc-28305 FITC), Alexa Fluor® 488 (sc-28305 AF488), Alexa Fluor® 546 (sc-28305 AF546), Alexa Fluor® 594 (sc-28305 AF594) or Alexa Fluor® 647 (sc-28305 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28305 AF680) or Alexa Fluor® 790 (sc-28305 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Sp3 (F-7) is recommended for detection of Sp3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), 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).

Suitable for use as control antibody for Sp3 siRNA (h): sc-29490, Sp3 siRNA (m): sc-36544, Sp3 shRNA Plasmid (h): sc-29490-SH, Sp3 shRNA Plasmid (m): sc-36544-SH, Sp3 shRNA (h) Lentiviral Particles: sc-29490-V and Sp3 shRNA (m) Lentiviral Particles: sc-36544-V.

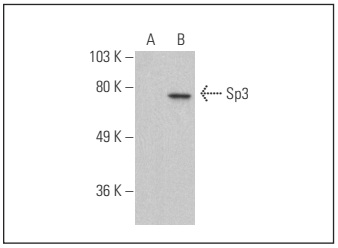
Sp3 (F-7) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Sp3 isoforms: 78/100/115 kDa.

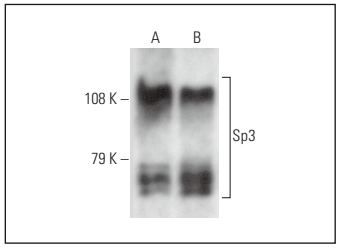
STORAGE

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

DATA



Sp3 (F-7): sc-28305. Western blot analysis of Sp3 expression in non-transfected: sc-117752 (**A**) and mouse Sp3 transfected: sc-127572 (**B**) whole cell lysates. Detection reagent used: m-IgG_{2a} BP-HRP: sc-542731.



Sp3 (F-7): sc-28305. Western blot analysis of Sp3 isoform expression in Jurkat (**A**) and K-562 (**B**) nuclear extracts.

SELECT PRODUCT CITATIONS

1. Ji, J., et al. 2007. Purα and Purβ collaborate with Sp3 to negatively regulate β-myosin heavy chain gene expression during skeletal muscle inactivity. Mol. Cell. Biol. 27: 1531-1543.
2. Takagi, A., et al. 2008. Role of Sp1 in transcription of human ATP2A2 gene in keratinocytes. J. Invest. Dermatol. 128: 96-103.
3. Mancarelli, M.M., et al. 2010. The tumor suppressor gene KCTD11REN is regulated by Sp1 and methylation and its expression is reduced in tumors. Mol. Cancer 9: 172.
4. Magan, N., et al. 2012. Treatment with the PARP-inhibitor PJ34 causes enhanced doxorubicin-mediated cell death in HeLa cells. Anticancer Drugs 23: 627-637.
5. Yun, H., et al. 2015. Activation of AKR1C1/ERβ induces apoptosis by down-regulation of c-FLIP in prostate cancer cells: a prospective therapeutic opportunity. Oncotarget 6: 11600-11613.
6. Suske, G. 2017. NF-Y and SP transcription factors—new insights in a long-standing liaison. Biochim. Biophys. Acta Gene Regul. Mech. 1860: 590-597.
7. Kong, X., et al. 2018. ZBP-89 and Sp1 contribute to Bak expression in hepatocellular carcinoma cells. BMC Cancer 18: 419.
8. Kawakita, E., et al. 2021. Metformin mitigates DPP-4 inhibitor-induced breast cancer metastasis via suppression of mTOR signaling. Mol. Cancer Res. 19: 61-73.
9. Ruan, G., et al. 2022. *Roseburia intestinalis* and its metabolite butyrate inhibit colitis and upregulate TLR5 through the Sp3 signaling pathway. Nutrients 14: 3041.

RESEARCH USE

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

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