

Sp3 (G-7): sc-365220



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 GGGCGGGC 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 $\beta 4$ 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.

REFERENCES

1. Dynan, W.S., et al. 1983. Isolation of transcription factors that discriminate between different promoters recognized by RNA polymerase II. Cell 32: 669-680.
2. Kadonaga, J.T., et al. 1987. Isolation of cDNA encoding transcription factor Sp1 and functional analysis of the DNA binding domain. Cell 51: 1079-1090.

CHROMOSOMAL LOCATION

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

SOURCE

Sp3 (G-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 627-651 at the C-terminus of Sp3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ 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-365220 X, 200 μ g/0.1 ml.

Sp3 (G-7) is available conjugated to agarose (sc-365220 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365220 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365220 PE), fluorescein (sc-365220 FITC), Alexa Fluor® 488 (sc-365220 AF488), Alexa Fluor® 546 (sc-365220 AF546), Alexa Fluor® 594 (sc-365220 AF594) or Alexa Fluor® 647 (sc-365220 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365220 AF680) or Alexa Fluor® 790 (sc-365220 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365220 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

Sp3 (G-7) is recommended for detection of Sp3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

Sp3 (G-7) is also recommended for detection of Sp3 in additional species, including canine, bovine, porcine and avian.

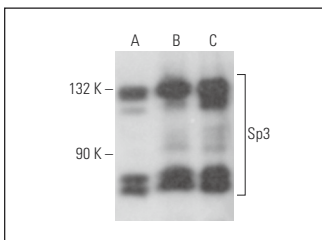
Suitable for use as control antibody for Sp3 siRNA (h): sc-29490, Sp3 siRNA (m): sc-36544, Sp3 shRNA Plasmid (h): sc-29490-SH, Sp3 shRNA Plasmid (m): sc-36544-SH, Sp3 shRNA (h) Lentiviral Particles: sc-29490-V and Sp3 shRNA (m) Lentiviral Particles: sc-36544-V.

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

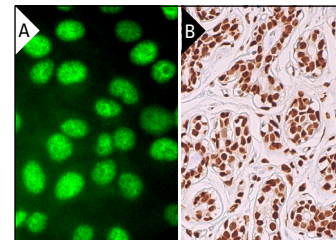
Molecular Weight of Sp3 isoforms: 78/100/115 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, PC-3 cell lysate: sc-2220 or KNRK nuclear extract: sc-2141.

DATA



Sp3 (G-7): sc-365220. Western blot analysis of Sp3 expression in MCF7 (A) and PC-3 (B) whole cell lysates and KNRK nuclear extract (C).



Sp3 (G-7): sc-365220. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing nuclear staining of glandular cells and myoepithelial cells (B).

SELECT PRODUCT CITATIONS

1. Kirschberg, M., et al. 2019. HPV8 activates cellular gene expression mainly through Sp1/3 binding sites. Virology 535: 136-143.
2. Chen, L.Y., et al. 2020. Sp3 transcription factor cooperates with the Kaposi's sarcoma-associated herpesvirus ORF50 protein to synergistically activate specific viral and cellular gene promoters. J. Virol. 94: e01143-20.
3. Rioux, G., et al. 2022. Gene profiling of a 3D psoriatic skin model enriched in T cells: downregulation of PTPRM promotes keratinocyte proliferation through excessive ERK1/2 signaling. Cells 11: 2904.
4. Shibuya, Y., et al. 2023. SMAC mimetics synergistically cooperate with HDAC inhibitors enhancing TNF- α autocrine signaling. Cancers 15: 1315.

RESEARCH USE

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