

Sp4 (B-1): sc-390124

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 β 4 subunit of neuronal nicotinic acetylcholine receptors. Sp3 is the only Sp member to inhibit Sp1 and Sp4 mediated transcription.

REFERENCES

1. Kadonaga, J.T., et al. 1988. Promoter-selective activation of transcription by Spl. In the control of human retrovirus gene expression. Franza, B.R. Jr., et al, eds. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY: 239-250.
2. Hagen, G., et al. 1992. Cloning by recognition site screening of two novel GT box binding proteins: a family of Sp1 related genes. *Nucleic Acids Res.* 20: 5519-5525.
3. Kingsley, C., et al. 1992. Cloning of GT box-binding proteins: a novel Sp1 multigene family regulating T-cell receptor gene expression. *Mol. Cell Biol.* 12: 4251-4261.

CHROMOSOMAL LOCATION

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

SOURCE

Sp4 (B-1) is a mouse monoclonal antibody raised against amino acids 171-440 of Sp4 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-390124 X, 200 μ g/0.1 ml.

Sp4 (B-1) is available conjugated to agarose (sc-390124 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390124 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390124 PE), fluorescein (sc-390124 FITC), Alexa Fluor[®] 488 (sc-390124 AF488), Alexa Fluor[®] 546 (sc-390124 AF546), Alexa Fluor[®] 594 (sc-390124 AF594) or Alexa Fluor[®] 647 (sc-390124 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390124 AF680) or Alexa Fluor[®] 790 (sc-390124 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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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

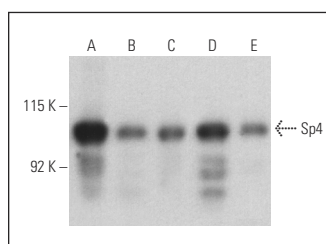
Sp4 (B-1) is recommended for detection of Sp4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

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.

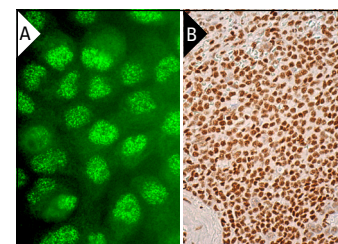
Molecular Weight of Sp4: 80-110 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, SH-SY5Y nuclear extract: sc-364820 or Jurkat whole cell lysate: sc-2204.

DATA



Sp4 (B-1): sc-390124. Western blot analysis of Sp4 expression in SH-SY5Y nuclear extract (A) and U-251-MG (B), HeLa (C), Jurkat (D) and Hep G2 (E) whole cell lysates. Detection reagent used: m-IgG₁ BP-HRP: sc-525408.



Sp4 (B-1): sc-390124. Immunofluorescence staining of formalin-fixed A-431 cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing nuclear staining of cells in white pulp and cells in red pulp (B).

SELECT PRODUCT CITATIONS

1. Takeuchi, H., et al. 2016. CDODA-Me decreases specificity protein transcription factors and induces apoptosis in bladder cancer cells through induction of reactive oxygen species. *Urol. Oncol.* 34: 337.e11-8.
2. Zhang, H., et al. 2020. Sp4 controls constitutive expression of neuronal serine racemase and NF-E2-related factor-2 mediates its induction by valproic acid. *Biochim. Biophys. Acta Gene Regul. Mech.* 1863: 194597.
3. 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.
4. Gu, Y., et al. 2022. Multi-omics profiling visualizes dynamics of cardiac development and functions. *Cell Rep.* 41: 111891.
5. Zhang, L., et al. 2024. SRSF3 suppresses RCC tumorigenesis and progression via regulating SP4 alternative splicing. *Biochim. Biophys. Acta Mol. Cell Res.* 1871: 119841.

RESEARCH USE

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