

Sp3 (m): 293T Lysate: sc-127572

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 $\beta 4$ 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.
3. Kadonaga, J.T., et al. 1988. Promoter-selective activation of transcription by Sp1. In Franza, B.R., Jr., et al, eds., *The Control of Human Retrovirus Gene Expression*. Cold Spring Harbor, New York: Cold Spring Harbor Laboratory, 239-250.
4. Jackson, S.P., et al. 1990. GC box binding induces phosphorylation of Sp1 by a DNA-dependent protein kinase. *Cell* 63: 155-165.
5. 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.
6. Hagen, G., et al. 1994. Sp1-mediated transcriptional activation is repressed by Sp3. *EMBO J.* 13: 3843-3851.
7. Bigger, C.B., et al. 1997. Sp1 and Sp3 regulate expression of the neuronal nicotinic acetylcholine receptor $\beta 4$ subunit gene. *J. Biol. Chem.* 272: 25976-25982.
8. Ishimaru, N., et al. 2007. Regulation of neurotrophin-3 gene transcription by Sp3 and Sp4 in neurons. *J. Neurochem.* 100: 520-531.

CHROMOSOMAL LOCATION

Genetic locus: Sp3 (mouse) mapping to 2 C3.

PRODUCT

Sp3 (m): 293T Lysate represents a lysate of mouse Sp3 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

Sp3 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Sp3 antibodies. Recommended use: 10-20 μ l per lane.

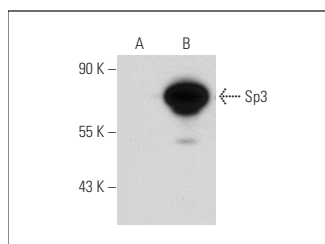
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Sp3 (F-11): sc-55479 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse Sp3 expression in Sp3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

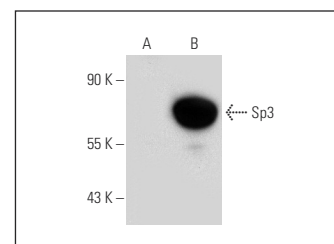
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



Sp3 (F-11): sc-55479. Western blot analysis of Sp3 expression in non-transfected: sc-117752 (A) and mouse Sp3 transfected: sc-127572 (B) 293T whole cell lysates.



Sp3 (F-7): sc-28305. Western blot analysis of Sp3 expression in non-transfected: sc-117752 (A) and mouse Sp3 transfected: sc-127572 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.