

Sp1 (SP15H09): sc-81382

BACKGROUND

Sp1 is a sequence-specific transcription factor that recognizes GGGCGGGGC and closely related sequences, which are often referred to as GC boxes. Sp1 was initially identified as a HeLa cell-derived factor that selectively activates *in vitro* transcription from the SV40 promoter and binds to the multiple GC boxes in the 21 bp repeated elements in SV40. The sequence specificity of DNA binding is conferred by Zn(II) fingers, whereas a different region of Sp1 appears to regulate the affinity of DNA binding. Sp1 belongs to a subgroup of transcription factors that are phosphorylated upon binding to promoter sequences. Evidence suggests that the early growth response gene, Erg-1 (also known as Zif268 or NGF1-A), may downregulate certain mammalian gene promoters by competing with Sp1 for binding to an overlapping binding motif. The gene encoding human Sp1 maps to chromosome 12q13.1.

REFERENCES

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2. Dynan, W.S., et al. 1983. The promoter-specific transcription factor Sp1 binds to upstream sequences in the SV40 early promoter. *Cell* 35: 79-87.
3. 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.
4. Kadonaga, J.T., et al. 1988. Promoter-selective activation of transcription by Sp1. In Franza, B.R., Jr., Cullen, B.R. and Wong-Staal, F., eds., *The Control of Human Retrovirus Gene Expression*. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory, 239-250.
5. Kadonaga, J.T., et al. 1988. Distinct regions of Sp1 modulate DNA binding and transcriptional activation. *Science* 242: 1566.
6. Jackson, S.P., et al. 1990. GC box binding induces phosphorylation of Sp1 by a DNA-dependent protein kinase. *Cell* 63: 155-165.
7. Ackerman, S.L., et al. 1991. Functional significance of an overlapping consensus binding motif for SP1 and Zif268 in the murine adenosine deaminase gene promoter. *Proc. Natl. Acad. Sci. USA* 88: 7523-7527.
8. Pavletich, N.P., et al. 1991. Zinc finger-DNA recognition: crystal structure of a Zif268-DNA complex at 2.1 Å. *Science* 252: 809-817.
9. Matera, A.G. et al. 1993. Localization of the human Sp1 transcription factor gene to 12q13 by fluorescence *in situ* hybridization. *Genomics* 17: 793-794.

CHROMOSOMAL LOCATION

Genetic locus: SP1 (human) mapping to 12q13.1.

SOURCE

Sp1 (SP15H09) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of Sp1 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% BSA.

APPLICATIONS

Sp1 (SP15H09) is recommended for detection of Sp1 of 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) and flow cytometry (1 µg per 1 x 10⁶ cells).

Suitable for use as control antibody for Sp1 siRNA (h): sc-29487.

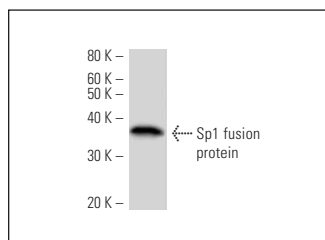
Molecular Weight of Sp1: 106 kDa.

Positive Controls: human colon carcinoma, human tonsil or HeLa whole cell lysate: sc-2200.

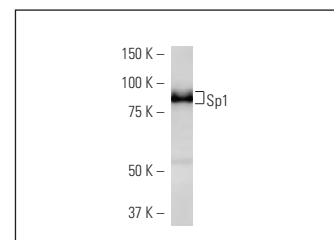
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Sp1 (SP15H09): sc-81382 Western Blot analysis of human recombinant Sp1 fusion protein.



Sp1 (SP15H09): sc-81382 Western Blot analysis of Sp1 expression in HEK293 whole cell lysate.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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