

Sp5 (N-15): sc-169393

BACKGROUND

The Sp transcription factor family includes Sp1, Sp2, Sp3 (SPR-2), Sp4 (SPR-1) and Sp5. Sp transcription factors share similar structures but do not share similar functions. All five 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. Sp5 is a 398 amino acid transcription factor that localizes to the nucleus and contains three C₂H₂-type zinc fingers. Sp5 is suggested to have a role in the coordination of changes in transcription required to generate patterns in the developing embryo. Sp5 is considered a novel direct down-stream target in the Wnt signaling pathway, which regulates many processes during vertebrate development.

REFERENCES

- Harrison, S.M., Houzelstein, D., Dunwoodie, S.L. and Beddington, R.S. 2000. Sp5, a new member of the Sp1 family, is dynamically expressed during development and genetically interacts with brachyury. *Dev. Biol.* 227: 358-372.
- Treichel, D., Becker, M.B. and Gruss, P. 2001. The novel transcription factor gene Sp5 exhibits a dynamic and highly restricted expression pattern during mouse embryogenesis. *Mech. Dev.* 101: 175-179.
- Weidinger, G., Thorpe, C.J., Wuennenberg-Stapleton, K., Ngai, J. and Moon, R.T. 2005. The Sp1-related transcription factors sp5 and sp5-like act downstream of Wnt/ β -catenin signaling in mesoderm and neuroectoderm patterning. *Curr. Biol.* 15: 489-500.
- Thorpe, C.J., Weidinger, G. and Moon, R.T. 2005. Wnt/ β -catenin regulation of the Sp1-related transcription factor sp5l promotes tail development in zebrafish. *Development* 132: 1763-1772.
- Takahashi, M., Nakamura, Y., Obama, K. and Furukawa, Y. 2005. Identification of Sp5 as a downstream gene of the β -catenin/TCF pathway and its enhanced expression in human colon cancer. *Int. J. Oncol.* 27: 1483-1487.
- Chen, Y., Guo, Y., Ge, X., Itoh, H., Watanabe, A., Fujiwara, T., Kodama, T. and Aburatani, H. 2006. Elevated expression and potential roles of human Sp5, a member of Sp transcription factor family, in human cancers. *Biochem. Biophys. Res. Commun.* 340: 758-766.
- Fujimura, N., Vacik, T., Machon, O., Vlcek, C., Scalabrin, S., Speth, M., Diep, D., Krauss, S. and Kozmik, Z. 2007. Wnt-mediated downregulation of Sp1 target genes by a transcriptional repressor Sp5. *J. Biol. Chem.* 282: 1225-1237.

CHROMOSOMAL LOCATION

Genetic locus: SP5 (human) mapping to 2q31.1; Sp5 (mouse) mapping to 2 C2.

SOURCE

Sp5 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Sp5 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-169393 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-169393 X, 200 μ g/0.1 ml.

APPLICATIONS

Sp5 (N-15) is recommended for detection of Sp5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Sp5 (N-15) is also recommended for detection of Sp5 in additional species, including canine and porcine.

Suitable for use as control antibody for Sp5 siRNA (h): sc-94751, Sp5 siRNA (m): sc-153690, Sp5 shRNA Plasmid (h): sc-94751-SH, Sp5 shRNA Plasmid (m): sc-153690-SH, Sp5 shRNA (h) Lentiviral Particles: sc-94751-V and Sp5 shRNA (m) Lentiviral Particles: sc-153690-V.

Sp5 (N-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Sp5: 42 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

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