

# Sp8 (C-18): sc-104661

## BACKGROUND

Sp8, also known as BTD, is a 508 amino acid nuclear protein that contains 3 C<sub>2</sub>H<sub>2</sub>-type zinc fingers. Existing as multiple alternatively spliced isoforms, Sp8 plays a crucial role in limb outgrowth and neuropore closure and is thought to mediate apical ectodermal ridge (AER) formation. The gene encoding Sp8 maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome. The deletion of a portion of the q arm of chromosome 7 is associated with Williams-Beuren syndrome, a condition characterized by mild mental retardation, an unusual comfort and friendliness with strangers and an elfin appearance. Deletions of portions of the q arm of chromosome 7 are also seen in a number of myeloid disorders, including cases of acute myelogenous leukemia and myelodysplasia.

## REFERENCES

1. Treichel, D., et al. 2003. MBtd is required to maintain signaling during murine limb development. *Genes Dev.* 17: 2630-2635.
2. Bell, S.M., et al. 2003. Sp8 is crucial for limb outgrowth and neuropore closure. *Proc. Natl. Acad. Sci. USA* 100: 12195-12200.
3. Milona, M.A., et al. 2004. Genomic structure and cloning of two transcript isoforms of human Sp8. *BMC Genomics* 5: 86.
4. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 608306. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Eckert, M.A., et al. 2006. The neurobiology of Williams syndrome: cascading influences of visual system impairment? *Cell. Mol. Life Sci.* 63: 1867-1875.

## CHROMOSOMAL LOCATION

Genetic locus: SP8 (human) mapping to 7p21.1; Sp8 (mouse) mapping to 12 F2.

## SOURCE

Sp8 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Sp8 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-104661 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

Sp8 (C-18) is recommended for detection of Sp8 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).

Sp8 (C-18) is also recommended for detection of Sp8 in additional species, including equine and porcine.

Suitable for use as control antibody for SP8 siRNA (h): sc-89539, Sp8 siRNA (m): sc-153692, SP8 shRNA Plasmid (h): sc-89539-SH, Sp8 shRNA Plasmid (m): sc-153692-SH, SP8 shRNA (h) Lentiviral Particles: sc-89539-V and Sp8 shRNA (m) Lentiviral Particles: sc-153692-V.

Molecular Weight of Sp8: 51 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.

## SELECT PRODUCT CITATIONS

1. Wei, B., et al. 2011. Emx1-expressing neural stem cells in the subventricular zone give rise to new interneurons in the ischemic injured striatum. *Eur. J. Neurosci.* 33: 819-830.
2. Li, X., et al. 2011. The transcription factor Sp8 is required for the production of parvalbumin-expressing interneurons in the olfactory bulb. *J. Neurosci.* 31: 8450-8455.
3. Kosaka, T. and Kosaka, K. 2012. Further characterization of the juxtaglomerular neurons in the mouse main olfactory bulb by transcription factors, Sp8 and Tbx21. *Neurosci. Res.* 73: 24-31.
4. Ma, T., et al. 2012. A subpopulation of dorsal lateral/caudal ganglionic eminence-derived neocortical interneurons expresses the transcription factor Sp8. *Cereb. Cortex.* 22: 2120-2130.
5. Li, X., et al. 2014. Sp8 plays a supplementary role to Pax6 in establishing the pMN/p3 domain boundary in the spinal cord. *Development* 141: 2875-2884.
6. Wang, C., et al. 2014. Human and monkey striatal interneurons are derived from the medial ganglionic eminence but not from the adult subventricular zone. *J. Neurosci.* 34: 10906-10923.
7. Zhou, X., et al. 2015. Transcription factors COUP-TFI and COUP-TFII are required for the production of granule cells in the mouse olfactory bulb. *Development* 142: 1593-1605.