

Six1 (A-20): sc-9709

BACKGROUND

The Six proteins (*sine oculis*) are a family of homeodomain transcription factors that share a conserved DNA binding domain. Six2, Six4 (AREC3) and Six5 bind to the same DNA sequence, indicating that they may regulate the same target genes. Six1 and Six4 are both capable of transactivating MEF3 site containing reporter genes, such as myogenin. It has been demonstrated that alterations to homeobox-containing genes may result in cancer. Six1 expression has been shown to be absent or low in normal adult tissues, although it is expressed in several tumor types, including breast carcinoma. Six1 overexpression has been shown to abrogate the G₂ cell cycle checkpoint.

REFERENCES

- Cillo, C. 1994. HOX genes in human cancers. *Invasion Metastasis* 14: 38-49.
- Paules, R.S., et al. 1995. Defective G₂ checkpoint function in cells from individuals with familial cancer syndromes. *Cancer Res.* 55: 1763-1773.
- Kawakami, K., et al. 1996. Identification and expression of six family genes in mouse retina. *FEBS Lett.* 393: 259-263.
- Davey, S., et al. 1998. Fission yeast rad12⁺ regulates cell cycle checkpoint control and is homologous to the Bloom's syndrome disease gene. *Mol. Cell. Biol.* 18: 2721-2728.
- Ford, H.L., et al. 1998. Abrogation of the G₂ cell cycle checkpoint associated with overexpression of HSIX1: a possible mechanism of breast carcinogenesis. *Proc. Natl. Acad. Sci. USA* 95: 12608-12613.
- Spitz, F., et al. 1998. Expression of myogenin during embryogenesis is controlled by Six/*sine oculis* homeoproteins through a conserved MEF3 binding site. *Proc. Natl. Acad. Sci. USA* 95: 14220-14225.

CHROMOSOMAL LOCATION

Genetic locus: SIX1 (human) mapping to 14q23.1; Six1 (mouse) mapping to 12 C3.

SOURCE

Six1 (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Six1 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-9709 P, (100 µg 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-9709 X, 200 µg/0.1 ml.

STORAGE

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

APPLICATIONS

Six1 (A-20) is recommended for detection of Six1 of mouse, rat and 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), 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).

Six1 (A-20) is also recommended for detection of Six1 in additional species, including equine, canine and porcine.

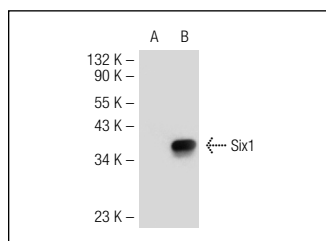
Suitable for use as control antibody for Six1 siRNA (h): sc-38784, Six1 siRNA (m): sc-38785, Six1 shRNA Plasmid (h): sc-38784-SH, Six1 shRNA Plasmid (m): sc-38785-SH, Six1 shRNA (h) Lentiviral Particles: sc-38784-V and Six1 shRNA (m) Lentiviral Particles: sc-38785-V.

Six1 (A-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

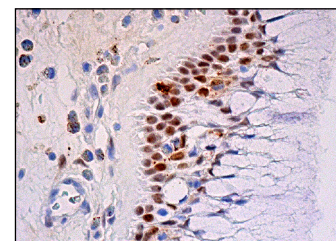
Molecular Weight of Six1: 37 kDa.

Positive Controls: Six1 (m): 293T Lysate: sc-123562.

DATA



Six1 (A-20): sc-9709. Western blot analysis of Six1 expression in non-transfected: sc-117752 (A) and mouse Six1 transfected: sc-123562 (B) 293T whole cell lysates.



Six1 (A-20): sc-9709. Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing nuclear staining of respiratory epithelial cells.

SELECT PRODUCT CITATIONS

- Yu, Y., et al. 2006. The homeoprotein Six1 transcriptionally activates multiple protumorigenic genes but requires Ezrin to promote metastasis. *Cancer Res.* 66: 1982-1989.
- Yuan, Y., et al. 2009. Angiogenin is involved in lung adenocarcinoma cell proliferation and angiogenesis. *Lung Cancer* 66: 28-36.
- Ventura-Holman, T., et al. 2011. The effect of oncoprotein v-erbA on thyroid hormone-regulated genes in hepatocytes and their potential role in hepatocellular carcinoma. *Mol. Biol. Rep.* 38: 1137-1144.
- Li, Z., et al. 2013. Six1 promotes proliferation of pancreatic cancer cells via upregulation of cyclin D1 expression. *PLoS ONE* 8: e59203.

RESEARCH USE

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