SANTA CRUZ BIOTECHNOLOGY, INC.

Six1 (M-120): sc-9127

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 MEF-3 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 G_2 cell cycle checkpoint.

REFERENCES

1. Cillo, C. 1994. Hox genes in human cancers. Invasion Metastasis 14: 38-49.
2. Paules, R.S., et al. 1995. Defective G_2 checkpoint function in cells from individuals with familial cancer syndromes. Cancer Res. 55: 1763-1773.
3. Kawakami, K., et al. 1996. Identification and expression of Six family genes in mouse retina. FEBS Lett. 393: 259-263.
4. 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.
5. Ford, H.L., et al. 1998. Abrogation of the G_2 cell cycle checkpoint associated with overexpression of hSix1: a possible mechanism of breast carcinogenesis. Proc. Natl. Acad. Sci. USA 95: 12608-12613.
6. Spitz, F., et al. 1998. Expression of myogenin during embryogenesis is controlled by Six/sine oculis homeoproteins through a conserved MEF-3 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 (M-120) is a rabbit polyclonal antibody raised against amino acids 4-111 mapping near the N-terminus of Six1 of mouse origin.

PRODUCT

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

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-9127 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.

PROTOCOLS

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

APPLICATIONS

Six1 (M-120) 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Six1 (M-120) is also recommended for detection of Six1 in additional species, including equine, canine, bovine, porcine and avian.

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 (M-120) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Six1: 37 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Plant, K.E., et al. 2009. The neuroprotective action of the mood stabilizing drugs lithium chloride and sodium valproate is mediated through the up-regulation of the homeodomain protein Six1. Toxicol. Appl. Pharmacol. 235: 124-134.
2. Imam, J.S., et al. 2010. MicroRNA-185 suppresses tumor growth and progression by targeting the Six1 oncogene in human cancers. Oncogene 29: 4971-4979.

RESEARCH USE

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