SANTA CRUZ BIOTECHNOLOGY, INC.

Meis3 (S-20): sc-27846

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Hox, Pbx and Meis families of transcription factors form heteromeric complexes and bind DNA through specific homeobox domains. Hox proteins are involved in regulating tissue patterning during development, and are also expressed in lineage- and stage-specific patterns during adult hematopoietic differentiation and in leukemias. The Hox proteins, which include paralog groups 1-10, have a low intrinsic binding affinity for DNA and are instead associated into cooperative DNA binding complexes with Pbx or the Pbx-related Meis proteins, which result in an enhanced Hox-DNA binding affinity and an increased selectivity for the binding site. Both Meis1 and Meis2 (also known as Meis-related gene 1 or Mrg1) are members of the TALE ("three amino acid loop extension") family of homeodomain-containing proteins. In addition to binding with Hox proteins, Meis1 also forms heterodimers with the ubiquitously expressed Pbx proteins, including Pbx1, Pbx2 and Pbx3, and these complexes contain distinct DNA-binding specificities. Like Hox and Pbx proteins, Meis1 is implicated in oncogenesis, as it is overexpressed as a result of adjacent retroviral insertion in BHX-2 myeloid leukemias. Two Meis-related proteins, Meis2 and Meis3 (also designated Mrg1 and Mrg2, respectively), possess largely similar sequence identity with Meis1 and are expressed in normal tissues and myeloid leukemias. In the pancreas, Meis2 preferentially associates with Pbx1, and together they associate with the pancreas-specific homeodomain factor, Pdx1, to repress Pdx1-induced transcriptional activation.

REFERENCES

1. Nakamura, T., et al. 1996. Identification of a new family of Pbx-related homeobox genes. Oncogene 13: 2235-2242.
2. Shen, W.F., et al. 1997. AbdBlike Hox proteins stabilize DNA binding by the Meis1 homeodomain proteins. Mol. Cell. Biol. 17: 6448-6458.
3. Knoepfler, P.S., et al. 1997. Meis1 and pKnox1 bind DNA cooperatively with Pbx1 utilizing an interaction surface disrupted in oncoprotein E2a-Pbx1. Proc. Natl. Acad. Sci. USA 94: 14553-14558.
4. Kroon, E., et al. 1998. Hoxa9 transforms primary bone marrow cells through specific collaboration with Meis1a but not Pbx1b. EMBO J. 17: 3714-3725.
5. Swift, G.H., et al. 1998. An endocrine-exocrine switch in the activity of the pancreatic homeodomain protein PDX1 through formation of a trimeric complex with PBX1b and MRG1 (MEIS2). Mol. Cell. Biol. 18: 5109-5120.
6. Lawrence, H.J., et al. 1999. Frequent co-expression of the HOXA9 and MEIS1 homeobox genes in human myeloid leukemias. Leukemia 13: 1993-1999.

CHROMOSOMAL LOCATION

Genetic locus: MEIS3 (human) mapping to 19q13.32; Meis3 (mouse) mapping to 7 A2.

SOURCE

Meis3 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Meis3 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-27846 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-27846 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Meis3 (S-20) is recommended for detection of Meis3 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).

Meis3 (S-20) is also recommended for detection of Meis3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Meis3 siRNA (h): sc-106770, Meis3 siRNA (m): sc-149364, Meis3 shRNA Plasmid (h): sc-106770-SH, Meis3 shRNA Plasmid (m): sc-149364-SH, Meis3 shRNA (h) Lentiviral Particles: sc-106770-V and Meis3 shRNA (m) Lentiviral Particles: sc-149364-V.

Meis3 (S-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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.

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.

MONOS Satisfaction Guaranteed

Try **Meis1/2/3 (9.2.7): sc-101850**, our highly recommended monoclonal alternative to Meis3 (S-20).