SANTA CRUZ BIOTECHNOLOGY, INC.

Meis2 (63-T): sc-81986

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 Pbx 1, Pbx 2 and Pbx 3, 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 leuke-mias. 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.

CHROMOSOMAL LOCATION

Genetic locus: MEIS2 (human) mapping to 15q14.

SOURCE

Meis2 (63-T) is a mouse monoclonal antibody raised against recombinant Meis2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Meis2 (63-T) is recommended for detection of Meis2 of 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).

Suitable for use as control antibody for Meis2 siRNA (h): sc-38794, Meis2 shRNA Plasmid (h): sc-38794-SH and Meis2 shRNA (h) Lentiviral Particles: sc-38794-V.

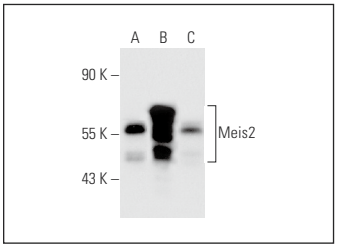
Molecular Weight of Meis2: 52 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Meis2 (h3): 293T Lysate: sc-177533 or MEG-01 cell lysate: sc-2283.

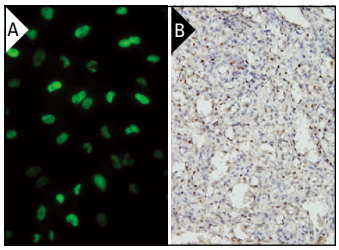
STORAGE

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

DATA



Meis2 (63-T): sc-81986. Western blot analysis of Meis2 expression in non-transfected 293T: sc-117752 (**A**), human Meis2 transfected 293T: sc-177533 (**B**) and MEG-01 (**C**) whole cell lysates.



Meis2 (63-T): sc-81986. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human spleen tissue showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Chen, J.L., et al. 2012. Deregulation of a Hox protein regulatory network spanning prostate cancer initiation and progression. Clin. Cancer Res. 18: 4291-4302.
2. Zha, Y., et al. 2014. Meis2 is essential for neuroblastoma cell survival and proliferation by transcriptional control of M-phase progression. Cell Death Dis. 5: e1417.
3. Bhanvadia, R.R., et al. 2018. Meis1 and Meis2 expression and prostate cancer progression: a role for HoxB13 binding partners in metastatic disease. Clin. Cancer Res. 24: 3668-3680.
4. Abruzzese, M.P., et al. 2019. The homeobox transcription factor Meis2 is a regulator of cancer cell survival and IMiDs activity in multiple myeloma: modulation by bromodomain and extra-terminal (BET) protein inhibitors. Cell Death Dis. 10: 324.
5. Zhong, S., et al. 2020. Decoding the development of the human hippocampus. Nature 577: 531-536.
6. Kaur, N., et al. 2020. Neural stem cells direct axon guidance via their radial fiber scaffold. Neuron 107: 1197-1211.e9.
7. Petillo, S., et al. 2021. Immunomodulatory effect of NEDD8-activating enzyme inhibition in Multiple Myeloma: upregulation of NKG2D ligands and sensitization to Natural Killer cell recognition. Cell Death Dis. 12: 836.
8. Lin, J.M., et al. 2022. Sociosexual behavior requires both activating and repressive roles of Tfap2e/AP-2ε in vomeronasal sensory neurons. Elife 11: e77259.
9. Yamanaka, S., et al. 2023. Lenalidomide derivatives and proteolysis-targeting chimeras for controlling neosubstrate degradation. Nat. Commun. 14: 4683.

RESEARCH USE

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