SANTA CRUZ BIOTECHNOLOGY, INC.

MIST1 (6E8): sc-80984

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

MIST1 (muscle, intestine and stomach expression 1), also known as bHLHB8 (basic helix-loop-helix domain containing, class B, 8), is a 189 amino acid nuclear protein expressed in liver, brain, skeletal muscle and spleen. MIST1 contains a basic helix-loop-helix (bHLH) domain and belongs to the bHLH family of transcription factors. Members of this family bind to the E-box motifs present in the promoter or enhancer regions of a variety of developmentally regulated genes and function as either transcriptional activators or transcriptional repressors. MIST1 is capable of binding to E-box motifs as a homodimer or a heterodimer with E-proteins (E12 and E47) and is believed to play a role regulating the transcriptional activity of MyoD, a protein involved in the regulation of muscle cell development. More specifically, MIST1 functions as a repressor of MyoD activity, ensuring that myoblast populations do not differentiate. In addition, MIST1 is expressed in mammary epithelial cells and is essential for the regulation of mammary gland development.

CHROMOSOMAL LOCATION

Genetic locus: Bhlha15 (mouse) mapping to 5 G2.

SOURCE

MIST1 (6E8) is a mouse monoclonal antibody raised against amino acids 175-197 corresponding to the C-terminus of MIST1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MIST1 (6E8) is available conjugated to agarose (sc-80984 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-80984 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-80984 PE), fluorescein (sc-80984 FITC), Alexa Fluor® 488 (sc-80984 AF488), Alexa Fluor® 546 (sc-80984 AF546), Alexa Fluor® 594 (sc-80984 AF594) or Alexa Fluor® 647 (sc-80984 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-80984 AF680) or Alexa Fluor® 790 (sc-80984 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

MIST1 (6E8) is recommended for detection of MIST1 of mouse and rat 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MIST1 siRNA (m): sc-108000, MIST1 shRNA Plasmid (m): sc-108000-SH and MIST1 shRNA (m) Lentiviral Particles: sc-108000-V.

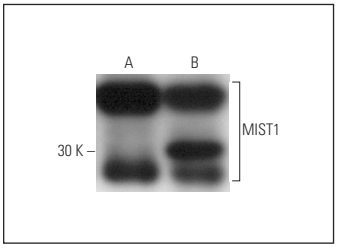
Molecular Weight of MIST1: 22 kDa.

Positive Controls: mouse pancreas extract: sc-364244.

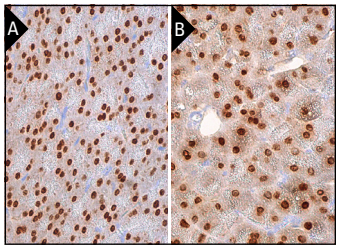
STORAGE

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

DATA



MIST1 (6E8): sc-80984. Western blot analysis of MIST1 expression in MIST1KO mouse (**A**) and MIST1WT mouse (**B**) pancreas tissue extracts. Kindly provided by Daniel DiRenzo and Stephen Konieczny, Purdue University.



MIST1 (6E8): sc-80984. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat pancreas (**A**) and mouse pancreas (**B**) tissue showing nuclear staining of exocrine glandular cells.

SELECT PRODUCT CITATIONS

1. King, S.L., et al. 2013. Paneth cells expand from newly created and preexisting cells during repair after doxorubicin-induced damage. Am. J. Physiol. Gastrointest. Liver Physiol. 305: G151-G162.
2. Prévot, P.P., et al. 2013. Let-7b and miR-495 stimulate differentiation and prevent metaplasia of pancreatic acinar cells by repressing HNF6. Gastroenterology 145: 668-678.e3.
3. Chung, W.C., et al. 2019. Downregulation of Notch signaling in Kras-induced gastric metaplasia. Neoplasia 21: 810-821.
4. Murakami, S., et al. 2019. A Yap-Myc-Sox2-p53 regulatory network dictates metabolic homeostasis and differentiation in Kras-driven pancreatic ductal adenocarcinomas. Dev. Cell 51: 113-128.e9.
5. Dekaney, C.M., et al. 2019. MIST1 expression is required for paneth cell maturation. Cell. Mol. Gastroenterol. Hepatol. 8: 549-560.
6. Teles Silva, M., et al. 2019. Immediate and late effects of early weaning on rat gastric cell differentiation. Int. J. Mol. Sci. 21: 196.
7. Messal, H.A., et al. 2021. Antigen retrieval and clearing for whole-organ immunofluorescence by FLASH. Nat. Protoc. 16: 239-262.
8. Tran, O.N., et al. 2022. Organ-specific extracellular matrix directs *trans*-differentiation of mesenchymal stem cells and formation of salivary gland-like organoids *in vivo*. Stem Cell Res. Ther. 13: 306.
9. Chen, Q., et al. 2023. Involvement of aberrant acinar cell proliferation in scopolamine-induced dry eye mice. Exp. Eye Res. 227: 109391.
10. Canale, V., et al. 2023. PTPN2 is a critical regulator of ileal paneth cell viability and function in mice. Cell. Mol. Gastroenterol. Hepatol. 16: 39-62.

RESEARCH USE

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