SANTA CRUZ BIOTECHNOLOGY, INC.

RUNX3 (A-3): sc-376591

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mammalian Runt-related transcription factor (RUNX) family comprises three members, RUNX1 (also designated AML-1, PEBP2αB, CBFA2), RUNX2 (also designated AML-3, PEBP2αA, CBFA1, Osf2) and RUNX3 (also designated AML-2, PEBPαC, CBFA3), and belongs to the acute myeloid leukemia (AML) family. RUNX family members are DNA-binding proteins that regulate the expression of genes involved in cellular differentiation and cell cycle progression. RUNX3 is expressed in cells of hematopoietic origin, including myeloid and B-cell lines and spleen. By playing a role in controlling the growth and differentiation of gastric epithelial cells, RUNX3 is a strong candidate as a gastric cancer tumor suppressor. Specifically, hypermethylation inactivates the gene encoding RUNX3. The detection of hypermethylation at multiple regions within the RUNX3 CpG island may aid in the diagnosis and risk assessment of gastric cancer.

REFERENCE

1. Speck, N.A. and Terryl, S. 1995. A new transcription factor family associated with human leukemias. Crit. Rev. Eukaryot. Gene Expr. 5: 337-364.
2. Bae, S.C., et al. 1995. Cloning, mapping and expression of PEBP2 α C, a third gene encoding the mammalian Runt domain. Gene 159: 245-248.
3. Meyers, S., et al. 1996. AML-2 is a potential target for transcriptional regulation by the t(8;21) and t(12;21) fusion proteins in acute leukemia. Oncogene 13: 303-312.

CHROMOSOMAL LOCATION

Genetic locus: RUNX3 (human) mapping to 1p36.11; Runx3 (mouse) mapping to 4 D3.

SOURCE

RUNX3 (A-3) is a mouse monoclonal antibody raised against amino acids 191-240 mapping within an internal region of RUNX3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain 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-376591 X, 200 µg/0.1 ml.

RUNX3 (A-3) is available conjugated to agarose (sc-376591 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376591 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376591 PE), fluorescein (sc-376591 FITC), Alexa Fluor® 488 (sc-376591 AF488), Alexa Fluor® 546 (sc-376591 AF546), Alexa Fluor® 594 (sc-376591 AF594) or Alexa Fluor® 647 (sc-376591 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376591 AF680) or Alexa Fluor® 790 (sc-376591 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

RUNX3 (A-3) is recommended for detection of RUNX3 isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

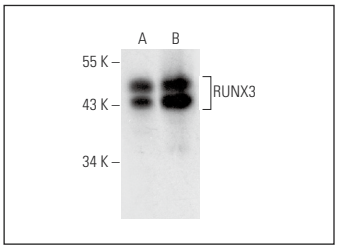
Suitable for use as control antibody for RUNX3 siRNA (h): sc-37679, RUNX3 siRNA (m): sc-37680, RUNX3 shRNA Plasmid (h): sc-37679-SH, RUNX3 shRNA Plasmid (m): sc-37680-SH, RUNX3 shRNA (h) Lentiviral Particles: sc-37679-V and RUNX3 shRNA (m) Lentiviral Particles: sc-37680-V.

RUNX3 (A-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

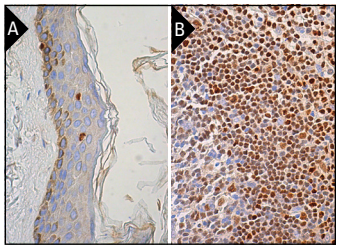
Molecular Weight of RUNX3 full length isoforms: 48/46 kDa.

Positive Controls: U266 whole cell lysate: sc-364800, Raji whole cell lysate: sc-364236 or MEG-01 nuclear extract: sc-2150.

DATA



RUNX3 (A-3): sc-376591. Western blot analysis of RUNX3 expression in U266 (**A**) and Raji (**B**) whole cell lysates.



RUNX3 (A-3): sc-376591. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing nuclear staining of Langerhans cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing nuclear staining of cells in germinal center and cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Zuo, J., et al. 2013. MicroRNA-148a can regulate runt-related transcription factor 3 gene expression via modulation of DNA methyltransferase 1 in gastric cancer. Mol. Cells 35: 313-319.
2. Jili, S., et al. 2016. RUNX3 inhibits laryngeal squamous cell carcinoma malignancy under the regulation of miR-148a-3p/DNMT1 axis. Cell Biochem. Funct. 34: 597-605.
3. Wang, Y., et al. 2017. MicroRNA-661 promotes non-small cell lung cancer progression by directly targeting RUNX3. Mol. Med. Rep. 16: 2113-2120.
4. Zhou, J., et al. 2023. Super-enhancer-driven TOX2 mediates oncogenesis in natural killer/T cell lymphoma. Mol. Cancer 22: 69.

RESEARCH USE

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