SANTA CRUZ BIOTECHNOLOGY, INC.

Parafibromin (2H1): sc-33638

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Parathyroid tumors are heterogeneous and diagnosis of the disease is often difficult. The Parafibromin protein may be important as a marker for diagnosing parathyroid carcinoma. Parafibromin is encoded by the endocrine tumor suppressor gene CDC73 (cell division cycle 73, Paf1/RNA polymerase II complex component), alternatively known as the HRPT2 (hyperparathyroidism-jaw tumor syndrome 2) gene. The human CDC73 gene, which maps to chromosome 1q31.2, is the human homolog of *Saccharomyces cerevisiae* Cdc73 and is responsible for the hyperparathyroidism with jaw tumor syndrome (HPT-JT). Parafibromin is part of the RNA polymerase II/Paf1 complex, which is crucial for histone modification. This Parafibromin complex binds to both the nonphosphorylated forms and the Ser 2 and Ser 5 phosphorylated forms of the RNA polymerase II large subunit.

CHROMOSOMAL LOCATION

Genetic locus: CDC73 (human) mapping to 1q31.2; Cdc73 (mouse) mapping to 1 F.

SOURCE

Parafibromin (2H1) is a mouse monoclonal antibody raised against a peptide corresponding to amino acids 87-100 of Parafibromin 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.

Parafibromin (2H1) is available conjugated to agarose (sc-33638 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-33638 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33638 PE), fluorescein (sc-33638 FITC), Alexa Fluor® 488 (sc-33638 AF488), Alexa Fluor® 546 (sc-33638 AF546), Alexa Fluor® 594 (sc-33638 AF594) or Alexa Fluor® 647 (sc-33638 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33638 AF680) or Alexa Fluor® 790 (sc-33638 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

Parafibromin (2H1) is recommended for detection of Parafibromin 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Parafibromin siRNA (h): sc-45528, Parafibromin siRNA (m): sc-45529, Parafibromin shRNA Plasmid (h): sc-45528-SH, Parafibromin shRNA Plasmid (m): sc-45529-SH, Parafibromin shRNA (h) Lentiviral Particles: sc-45528-V and Parafibromin shRNA (m) Lentiviral Particles: sc-45529-V.

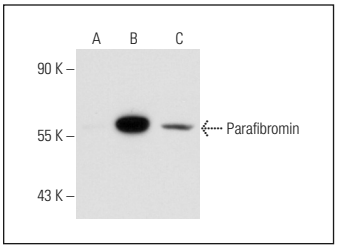
Molecular Weight of Parafibromin: 60 kDa.

Positive Controls: Parafibromin (m): 293T Lysate: sc-122375, C32 whole cell lysate: sc-2205 or HeLa whole cell lysate: sc-2200.

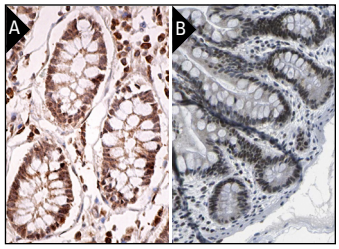
STORAGE

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

DATA



Parafibromin (2H1): sc-33638. Western blot analysis of Parafibromin expression in non-transfected 293T: sc-117752 (**A**), mouse Parafibromin transfected 293T: sc-122375 (**B**) and C32 (**C**) whole cell lysates.



Parafibromin (2H1): sc-33638. Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing nuclear staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Porzionato, A., et al. 2006. Immunohistochemical assessment of Parafibromin in mouse and human tissues. J. Anat. 209: 817-827.
2. Fernandez-Ranvier, G.G., et al. 2009. Defining a molecular phenotype for benign and malignant parathyroid tumors. Cancer 115: 334-344.
3. Zheng, H.C., et al. 2010. Nuclear or cytoplasmic localization of Bag-1 distinctly correlates with pathologic behavior and outcome of gastric carcinomas. Hum. Pathol. 41: 724-736.
4. Cascón, A., et al. 2011. Detection of the first gross CDC73 germline deletion in an HPT-JT syndrome family. Genes Chromosomes Cancer 50: 922-929.
5. Guarnieri, V., et al. 2012. CDC73 mutations and Parafibromin immunohistochemistry in parathyroid tumors: clinical correlations in a single-centre patient cohort. Cell. Oncol. 35: 411-422.
6. de Mesquita Netto, A.C., et al. 2013. Assessing the contribution of HRPT2 to the pathogenesis of jaw fibrous dysplasia, ossifying fibroma, and osteosarcoma. Oral Surg. Oral Med. Oral Pathol. Oral Radiol. 115: 359-367.
7. Masi, G., et al. 2014. Characterization of a new CDC73 missense mutation that impairs Parafibromin expression and nucleolar localization. PLoS ONE 9: e97994.
8. Cao, Q.F., et al. 2015. Characterization of the human transcription elongation factor Rtf1: evidence for nonoverlapping functions of Rtf1 and the Paf1 complex. Mol. Cell. Biol. 35: 3459-3470.
9. Jaenicke, L.A., et al. 2016. Ubiquitin-dependent turnover of MYC antagonizes MYC/PAF1C complex accumulation to drive transcriptional elongation. Mol. Cell 61: 54-67.

RESEARCH USE

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