SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-8 (PAX8R1): sc-81353

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Pax family encodes transcription factors that function during embryogenesis and regulate the temporal and position-dependent differentiation of cells. Pax-8 is expressed in the developing and adult thyroid, the developing secretory system and at lower levels in the adult kidney. Pax-8 complexes with TTF-1 and TTF-2 to induce thyroid follicular cell differentiation and thyroid hormone biosynthesis by regulating the expression of sodium iodide symporter (NIS), thyroid peroxidase (TPO), thyroglobulin (TG) and thyrotropin receptor (TSHR). Treatment of FRTL-5 cells with TGFβ1 decreases Pax-8 mRNA levels and Pax-8 DNA binding activity, which suppresses the expression of TG and the formation of thyrocytes. Patients who have autosomal dominant mutations of the Pax-8 gene develop thyroid dysgenesis. The Pax-8 gene produces six isoforms, A to F, that are generated by alternative splicing and differ in their carboxy-terminal regions. The Pax-8 isoforms display different DNA binding capacities and are thought to be functionally distinct. The gene which encodes Pax-8 maps to human chromosome 2q13.

CHROMOSOMAL LOCATION

Genetic locus: PAX8 (human) mapping to 2q13; Pax8 (mouse) mapping to 2 A3.

SOURCE

Pax-8 (PAX8R1) is a mouse monoclonal antibody raised against a recombinant protein corresponding to a region near the C-terminus of Pax-8 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 1.0% stabilizer protein.

APPLICATIONS

Pax-8 (PAX8R1) is recommended for detection of Pax-8 A and Pax-8 B of mouse, rat and 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) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for Pax-8 siRNA (h): sc-38751, Pax-8 siRNA (m): sc-38752, Pax-8 shRNA Plasmid (h): sc-38751-SH, Pax-8 shRNA Plasmid (m): sc-38752-SH, Pax-8 shRNA (h) Lentiviral Particles: sc-38751-V and Pax-8 shRNA (m) Lentiviral Particles: sc-38752-V.

Molecular Weight of Pax-8: 62 kDa.

Positive Controls: Pax-8 (m): 293T Lysate: sc-127301, HeLa whole cell lysate: sc-2200 or RIN-m5F whole cell lysate: sc-364792.

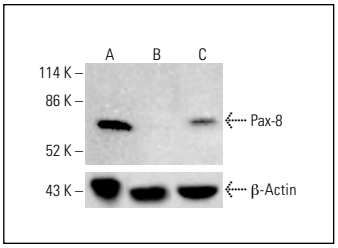
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

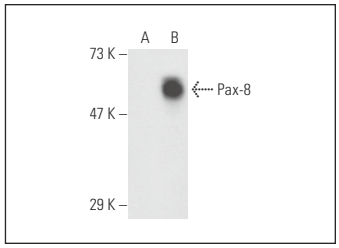
RESEARCH USE

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

DATA



Pax-8 (PAX8R1): sc-81353. Western blot analysis of Pax-8 expression in HeLa (**A**), untreated HCT-116 (**B**) and chemically-treated HCT-116 (**C**) whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



Pax-8 (PAX8R1): sc-81353. Western blot analysis of Pax-8 expression in non-transfected: sc-117752 (**A**) and mouse Pax-8 transfected: sc-127301 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Löf, C., et al. 2012. Communication between the calcium and cAMP pathways regulate the expression of the TSH receptor: TRPC2 in the center of action. Mol. Endocrinol. 26: 2046-2057.
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3. Serrano-Nascimento, C., et al. 2017. Iodine excess exposure during pregnancy and lactation impairs maternal thyroid function in rats. Endocr. Connect. 6: 510-521.
4. Serrano-Nascimento, C., et al. 2018. Evaluation of hypothalamus-pituitary-thyroid axis function by chronic perchlorate exposure in male rats. Environ. Toxicol. 33: 209-219.
5. Fuziwara, C.S., et al. 2019. The highly expressed FAM83F protein in papillary thyroid cancer exerts a pro-oncogenic role in thyroid follicular cells. Front. Endocrinol. 10: 134.
6. Serrano-Nascimento, C., et al. 2020. Impaired gene expression due to iodine excess in the development and differentiation of endoderm and thyroid is associated with epigenetic changes. Thyroid 30: 609-620.
7. Wu, H., et al. 2021. mTOR activation initiates renal cell carcinoma development by coordinating ERK and p38MAPK. Cancer Res. 81: 3174-3186.
8. Xuan, Y., et al. 2022. SCD1/FADS2 fatty acid desaturases equipoise lipid metabolic activity and redox-driven ferroptosis in ascites-derived ovarian cancer cells. Theranostics 12: 3534-3552.
9. Prakoso, Y.A., et al. 2023. Clinicopathological study of sarcomatoid renal cell carcinoma in animals in East Java, Indonesia, from 2017 to 2022. Open Vet. J. 13: 64-73.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.