

Pax-8 (PAX8R1): sc-81353

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.

REFERENCES

1. Stapleton, P., et al. 1993. Chromosomal localization of seven PAX genes and cloning of a novel family member, PAX-9. *Nat. Genet.* 3: 292-298.
2. Igarashi, P. 1994. Transcription factors and apoptosis in kidney development. *Curr. Opin. Nephrol. Hypertens.* 3: 308-317.

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 IgG₁ 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 10⁶ 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.

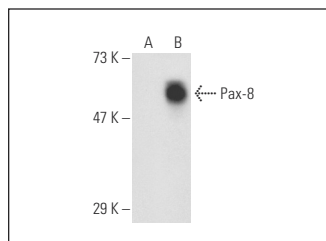
Molecular Weight of Pax-8: 62 kDa.

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

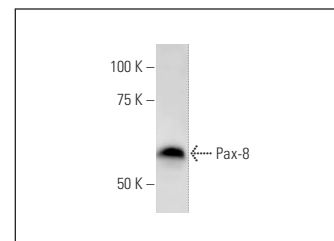
STORAGE

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

DATA



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.



Pax-8 (PAX8R1): sc-81353. Western Blot analysis of Pax-8 expression in HeLa whole cell lysate.

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.
2. Munakata, S. and Yamamoto, T. 2015. Incidence of serous tubal intraepithelial carcinoma (STIC) by algorithm classification in serous ovarian tumor associated with PAX8 expression in tubal epithelia: a study of single institution in Japan. *Int. J. Gynecol. Pathol.* 34: 9-18.
3. Rossich, L.E., et al. 2016. Effects of 2-iodohexadecanal in the physiology of thyroid cells. *Mol. Cell. Endocrinol.* 437: 292-301.
4. Serrano-Nascimento, C., et al. 2017. Iodine excess exposure during pregnancy and lactation impairs maternal thyroid function in rats. *Endocr. Connect.* 6: 510-521.
5. 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.
6. Fuziwaru, 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.
7. 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.
8. Laszczyk, A.M., et al. 2020. Pax2 and Pax8 proteins regulate urea transporters and aquaporins to control urine concentration in the adult kidney. *J. Am. Soc. Nephrol.* 31: 1212-1225.
9. Wu, H., et al. 2021. mTOR activation initiates renal cell carcinoma development by coordinating ERK and p38MAPK. *Cancer Res.* E-published.

RESEARCH USE

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