

Pax-8 (m): 293T Lysate: sc-127301

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 TGF β 1 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.
3. Poleev, A., et al. 1995. Distinct functional properties of three human paired-box-protein, Pax-8, isoforms generated by alternative splicing in thyroid, kidney and Wilms' tumors. *Eur. J. Biochem.* 228: 899-911.
4. Peters, H., et al. 1998. Pax genes and organogenesis: Pax-9 meets tooth development. *Eur. J. Oral Sci.* 106: 38-43.
5. LaFranchi, S. 1999. Congenital hypothyroidism: etiologies, diagnosis, and management. *Thyroid* 9: 735-740.
6. Suzuki, K., et al. 1999. Thyroglobulin regulates follicular function and heterogeneity by suppressing thyroid-specific gene expression. *Biochimie* 81: 329-340.
7. Damante, G., et al. 2000. A unique combination of transcription factors controls differentiation of thyroid cells. *Prog. Nucleic Acid Res. Mol. Biol.* 66: 307-356.
8. Krude, H., et al. 2000. Molecular pathogenesis of neonatal hypothyroidism. *Horm. Res.* 53: 12-18.
9. Kang, H.C., et al. 2001. Pax-8 is essential for regulation of the thyroglobulin gene by transforming growth factor β 1. *Endocrinology* 142: 267-275.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Pax8 (mouse) mapping to 2 A3.

PRODUCT

Pax-8 (m): 293T Lysate represents a lysate of mouse Pax-8 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

Pax-8 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Pax-8 antibodies. Recommended use: 10-20 μ l per lane.

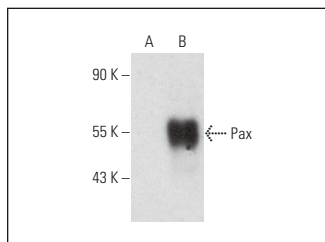
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Pax (D-7): sc-514352 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse Pax-8 expression in Pax-8 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

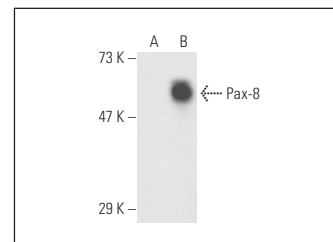
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



Pax (D-7): sc-514352. Western blot analysis of Pax 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 non-transfected: sc-117752 (A) and mouse Pax-8 transfected: sc-127301 (B) 293T whole cell lysates.

RESEARCH USE

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