SANTA CRUZ BIOTECHNOLOGY, INC.

Pax-8 C/D (C-20): sc-16284

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 the 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 are thought to be functionally distinct. The gene which encodes Pax-8 maps to human chromosome 2q12-q14.

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, PAX8, 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: Pax9 meets tooth development. Eur. J. Oral Sci. 106 Suppl. 1: 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 Suppl. 1: 12-18.
9. Kang, H.C., et al. 2001. Pax-8 is essential for regulation of the thyroglobulin gene by transforming growth factor-beta1. Endocrinology 142: 267-275.

CHROMOSOMAL LOCATION

Genetic locus: PAX8 (human) mapping to 2q12-q14; Pax8 (mouse) mapping to 2 B.

SOURCE

Pax-8 C/D (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Pax-8 C/D of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16284 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-16284 X, 200 µg/0.1 ml.

APPLICATIONS

Pax-8 C/D (C-20) is recommended for detection of Pax-8 C and Pax-8 D of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (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 Pax-8 siRNA (h): sc-38751.

Pax-8 C/D (C-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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