SANTA CRUZ BIOTECHNOLOGY, INC.

Thyroglobulin (F-7): sc-514301

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The Power to Question

BACKGROUND

Thyroglobulin is a large preprotein containing multiple glycosylation sites. Located in the thyroid gland, Thyroglobulin is the precursor of the iodinated thyroid hormones Thyroxine and Triiodothyronine. Thyroglobulin monomers undergo conformational maturation in the endoplasmic reticulum, prior to forming dimers. This dimerization, as well as export of Thyroglobulin to the Golgi complex, has been shown to require Ca^{2+}. Defects in Thyroglobulin are known to cause some types of goiter (an enlargement of the thyroid gland). This condition is thought to result from defective dimerization and transport of Thyroglobulin to the Golgi complex.

REFERENCES

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2. Mallet, B., et al. 1995. N-glycans modulate *in vivo* and *in vitro* thyroid hormone synthesis. Study at the N-terminal domain of Thyroglobulin. J. Biol. Chem. 270: 29881-29888.
3. Prabakaran, D., et al. 1996. Oligomeric assembly of thrombospondin in the endoplasmic reticulum of thyroid epithelial cells. Eur. J. Cell Biol. 70: 134-141.
4. Muresan, Z. and Arvan, P. 1998. Enhanced binding to the molecular chaperone BiP slows Thyroglobulin export from the endoplasmic reticulum. Mol. Endocrinol. 12: 458-467.
5. Di Jeso, B., et al. 1998. Demonstration of a Ca^{2+} requirement for Thyroglobulin dimerization and export to the golgi complex. Eur. J. Biochem. 252: 583-590.
6. Hishinuma, A., et al. 1998. Missense mutation (C1263R) in the Thyroglobulin gene causes congenital goiter with mild hypothyroidism by impaired intracellular transport. Endocr. J. 45: 315-327.
7. Hishinuma, A., et al. 1999. Two novel cysteine substitutions (C1263R and C1995S) of Thyroglobulin cause a defect in intracellular transport of Thyroglobulin in patients with congenital goiter and the variant type of adenomatous goiter. J. Clin. Endocrinol. Metab. 84: 1438-1444.
8. Lazar, V., et al. 1999. Expression of the Na^{+}/I^{-} symporter gene in human thyroid tumors: a comparison study with other thyroid-specific genes. J. Clin. Endocrinol. Metab. 84: 3228-3234.

CHROMOSOMAL LOCATION

Genetic locus: TG (human) mapping to 8q24.22; Tg (mouse) mapping to 15 D2.

SOURCE

Thyroglobulin (F-7) is a mouse monoclonal antibody raised against amino acids 19-180 mapping near the N-terminus of Thyroglobulin of human 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.

APPLICATIONS

Thyroglobulin (F-7) is recommended for detection of Thyroglobulin 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Thyroglobulin siRNA (h): sc-63346, Thyroglobulin siRNA (m): sc-63347, Thyroglobulin shRNA Plasmid (h): sc-63346-SH, Thyroglobulin shRNA Plasmid (m): sc-63347-SH, Thyroglobulin shRNA (h) Lentiviral Particles: sc-63346-V and Thyroglobulin shRNA (m) Lentiviral Particles: sc-63347-V.

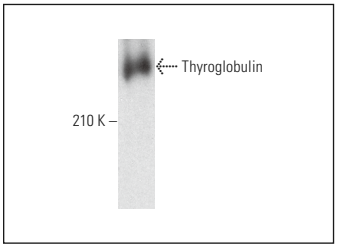
Molecular Weight of Thyroglobulin isoforms: 305/298 kDa.

Positive Controls: mouse thyroid extract: sc-2407.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Thyroglobulin (F-7): sc-514301. Western blot analysis of Thyroglobulin expression in mouse thyroid tissue extract.

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 for detailed protocols and support products.