SANTA CRUZ BIOTECHNOLOGY, INC.

Thyroglobulin (1D4): sc-53543

SANTA CRUZ BIOTECHNOLOGY

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

1. Malthiery, Y. and Lissitzky, S. 1987. Primary structure of human Thyroglobulin deduced from the sequence of its 8448-base complementary DNA. Eur. J. Biochem.165: 491-498.
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.

CHROMOSOMAL LOCATION

Genetic locus: TG (human) mapping to 8q24.22.

SOURCE

Thyroglobulin (1D4) is a mouse monoclonal antibody raised against full length Thyroglobulin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Thyroglobulin (1D4) is recommended for detection of Thyroglobulin in hyperplastic and neoplastic thyroid of 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), immunohistochemistry (including paraffin-embedded sections) (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 shRNA Plasmid (h): sc-63346-SH and Thyroglobulin shRNA (h) Lentiviral Particles: sc-63346-V.

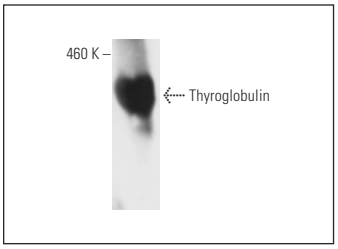
Molecular Weight of Thyroglobulin isoforms: 305/298 kDa.

Positive Controls: human thyroid extract: sc-363782.

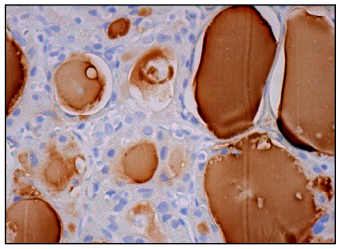
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Thyroglobulin (1D4): sc-53543. Western blot analysis of Thyroglobulin expression in human thyroid tissue extract.



Thyroglobulin (1D4): sc-53543. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing extracellular staining of colloid.

SELECT PRODUCT CITATIONS

1. Song, Q., et al. 2011. Diagnostic significance of CK19, TG, Ki67 and galectin-3 expression for papillary thyroid carcinoma in the northeastern region of China. Diagn. Pathol. 6: 126.
2. Mochizuki, Y., et al. 2013. Expression of polypeptide N-acetylgalactosaminyl transferase-3 and its association with clinicopathological factors in thyroid carcinomas. Thyroid 23: 1553-1560.
3. Kim, A., et al. 2020. Biochemical analysis of TOPBP1 oligomerization. DNA Repair 96: 102973.
4. Ruis, K., et al. 2022. Delineation of a minimal topoisomerase II binding protein 1 (TOPBP1) for regulated activation of ATR at DNA double-strand breaks. J. Biol. Chem. E-published.

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.