

Thyroglobulin (D-9): sc-365997

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.

CHROMOSOMAL LOCATION

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

SOURCE

Thyroglobulin (D-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 13-41 near the N-terminus of Thyroglobulin of human origin.

PRODUCT

Each vial contains 200 μg IgG γ_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Thyroglobulin (D-9) is available conjugated to agarose (sc-365997 AC), 500 μg /0.25 ml agarose in 1 ml, for IP; to HRP (sc-365997 HRP), 200 μg /ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365997 PE), fluorescein (sc-365997 FITC), Alexa Fluor® 488 (sc-365997 AF488), Alexa Fluor® 546 (sc-365997 AF546), Alexa Fluor® 594 (sc-365997 AF594) or Alexa Fluor® 647 (sc-365997 AF647), 200 μg /ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365997 AF680) or Alexa Fluor® 790 (sc-365997 AF790), 200 μg /ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365997 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Thyroglobulin (D-9) 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), 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).

Thyroglobulin (D-9) is also recommended for detection of Thyroglobulin in additional species, including equine, canine, bovine and porcine.

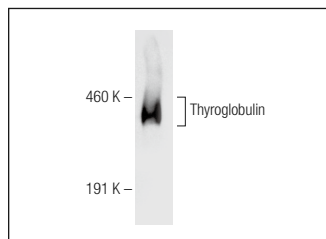
Suitable for use as control antibody for Thyroglobulin siRNA (h): sc-63346, Thyroglobulin siRNA (m): sc-63347, Thyroglobulin shRNA Plasmid (h): sc-63346-SH, Thyroglobulin shRNA Plasmid (m): sc-63347-SH, Thyroglobulin shRNA (h) Lentiviral Particles: sc-63346-V and Thyroglobulin shRNA (m) Lentiviral Particles: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

Molecular Weight of Thyroglobulin isoforms: 305/298 kDa.

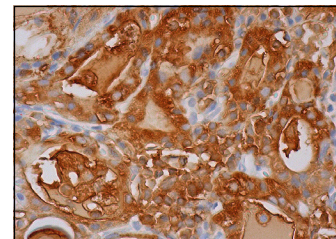
STORAGE

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

DATA



Thyroglobulin (D-9): sc-365997. Western blot analysis of Thyroglobulin expression in rat thyroid tissue extract.



Thyroglobulin (D-9): sc-365997. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Sharan, S., et al. 2014. Disruption of thyroid hormone functions by low dose exposure of tributyltin: an *in vitro* and *in vivo* approach. *Gen. Comp. Endocrinol.* 206: 155-165.
- Pessina, P., et al. 2016. Semiquantitative immunohistochemical marker staining and localization in canine thyroid carcinoma and normal thyroid gland. *Vet. Comp. Oncol.* 14: e102-e112.
- Vivacqua, A., et al. 2018. miR-338-3p is regulated by estrogens through GPER in breast cancer cells and cancer-associated fibroblasts (CAFs). *Cells* 7: 203.
- Cui, X., et al. 2019. Circulating exosomes activate dendritic cells and induce unbalanced CD4⁺ T cell differentiation in Hashimoto thyroiditis. *J. Clin. Endocrinol. Metab.* 104: 4607-4618.
- Cho, J.M., et al. 2020. Papillary thyroid cancer tumor spheres cultured by passaging without sorting exhibit cancer stemness. *Anticancer Res.* 40: 3801-3809.
- Zhang, X., et al. 2021. Thyroid hormone synthesis continues despite biallelic Thyroglobulin mutation with cell death. *JCI Insight* 6: e148496.
- Zhang, X., et al. 2022. Maintaining the thyroid gland in mutant Thyroglobulin-induced hypothyroidism requires thyroid cell proliferation that must continue in adulthood. *J. Biol. Chem.* 298: 102066.
- Giani, F., et al. 2023. Antioxidant defense capacity is reduced in thyroid stem/precursor cells compared to differentiated thyrocytes. *Int. J. Mol. Sci.* 24: 11509.
- Zhang, X., et al. 2023. Perturbation of endoplasmic reticulum proteostasis triggers tissue injury in the thyroid gland. *JCI Insight* 8: e169937.

RESEARCH USE

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

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