SANTA CRUZ BIOTECHNOLOGY, INC.

TSHR (3B12): sc-53542

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Various hormones are secreted from the anterior pituitary during development and growth, including thyroid-stimulating hormone (TSH, also known as thyrotropin), follicle-stimulating hormone (FSH) and leutinizing hormone (LH). TSH, FSH and LH are heterodimers formed from a common α chain and a unique β chain. TSH is a glycoprotein involved in the control of thyroid structure and metabolism, which stimulates the release of the thyroid hormones. TSH is regulated by thyroid hormone (T3) and various retinoid compounds. It binds to the thyroid-stimulating hormone receptor (TSHR), which is cleaved into two subunits, A and B, and plays a major role in regulating thyroid function. The third cytoplasmic loop of TSHR has been identified as critical for its role in regulating inositol phosphate and cAMP formation. In Graves disease, an autoimmune disorder, TSHR is activated by autoantibodies, which may be stimulated by the cleavage of the A and B subunits.

CHROMOSOMAL LOCATION

Genetic locus: TSHR (human) mapping to 14q31.1; Tshr (mouse) mapping to 12 D3.

SOURCE

TSHR (3B12) is a mouse monoclonal antibody rased against amino acids 1-415 of TSHR of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TSHR (3B12) is available conjugated to agarose (sc-53542 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53542 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53542 PE), fluorescein (sc-53542 FITC), Alexa Fluor® 488 (sc-53542 AF488), Alexa Fluor® 546 (sc-53542 AF546), Alexa Fluor® 594 (sc-53542 AF594) or Alexa Fluor® 647 (sc-53542 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53542 AF680) or Alexa Fluor® 790 (sc-53542 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

TSHR (3B12) is recommended for detection of TSHR of mouse, rat, human, bovine, porcine, feline and canine 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 flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for TSHR siRNA (h): sc-36754, TSHR siRNA (m): sc-36755, TSHR shRNA Plasmid (h): sc-36754-SH, TSHR shRNA Plasmid (m): sc-36755-SH, TSHR shRNA (h) Lentiviral Particles: sc-36754-V and TSHR shRNA (m) Lentiviral Particles: sc-36755-V.

Molecular Weight of intact TSHR: 115 kDa.

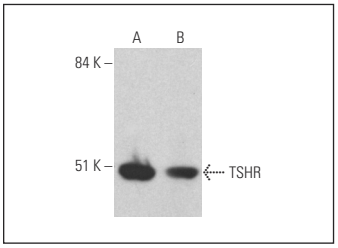
Molecular Weight of TSHR A subunit: 62 kDa.

Molecular Weight of TSHR B subunit: 42 kDa.

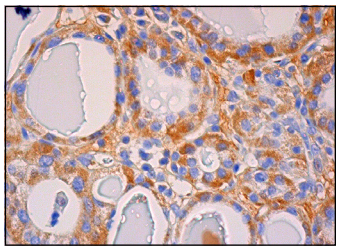
STORAGE

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

DATA



TSHR (3B12): sc-53542. Western blot analysis of TSHR expression in IMR-32 (**A**) and HeLa (**B**) whole cell lysates.



TSHR (3B12): sc-53542. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Löf, C., et al. 2012. Communication between the calcium and cAMP pathways regulate the expression of the TSH receptor: TRPC2 in the center of action. Mol. Endocrinol. 26: 2046-2057.
2. Fernando, R., et al. 2014. Expression of thyrotropin receptor, thyroglobulin, sodium-iodide symporter, and thyroperoxidase by fibrocytes depends on AIRE. J. Clin. Endocrinol. Metab. 99: E1236-E1244.
3. Mester, T., et al. 2016. CD40 expression in fibrocytes is induced by TSH: potential synergistic immune activation. PLoS ONE 11: e0162994.
4. Fernando, R., et al. 2017. Elevated serum tetrac in Graves disease: potential pathogenic role in thyroid-associated ophthalmopathy. J. Clin. Endocrinol. Metab. 102: 776-785.
5. Portnyagina, O., et al. 2018. In silico and *in vitro* analysis of cross-reactivity between *Yersinia pseudotuberculosis* OmpF porin and thyroid-stimulating hormone receptor. Int. J. Biol. Macromol. 107: 2484-2491.
6. Kim, S., et al. 2019. Di-2-ethylhexylphthalate promotes thyroid cell proliferation and DNA damage through activating thyrotropin-receptor-mediated pathways *in vitro* and *in vivo*. Food Chem. Toxicol. 124: 265-272.
7. Miranda, R.A., et al. 2020. Thyroid redox imbalance in adult Wistar rats that were exposed to nicotine during breastfeeding. Sci. Rep. 10: 15646.
8. Hong, S.H., et al. 2020. Orally administered 6:2 chlorinated polyfluorinated ether sulfonate (F-53B) causes thyroid dysfunction in rats. Toxics 8: 54.
9. Hu, C., et al. 2023. Bisphenol analogues induce thyroid dysfunction via the disruption of the thyroid hormone synthesis pathway. Sci. Total Environ. 900: 165711.

RESEARCH USE

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