

# TSHR (2C11): sc-32263

## 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  $\alpha$  chain and a unique  $\beta$  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. TSH 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.

## SOURCE

TSHR (2C11) is a mouse monoclonal antibody raised against human recombinant GST-TSHR fusion protein, with epitope mapping to amino acids 352-362.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TSHR (2C11) is available conjugated to either phycoerythrin (sc-32263 PE) or fluorescein (sc-32263 FITC), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM.

## APPLICATIONS

TSHR (2C11) is recommended for detection of TSHR of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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  $\mu$ g per  $1 \times 10^6$  cells).

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

Molecular Weight of intact TSHR: 115 kDa.

Molecular Weight of TSHR A subunit: 62 kDa.

Molecular Weight of TSHR B subunit: 42 kDa.

Positive Controls: human thyroid extract: sc-363782, HeLa whole cell lysate: sc-2200 or IMR-32 cell lysate: sc-2409.

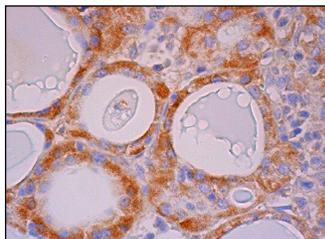
## STORAGE

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

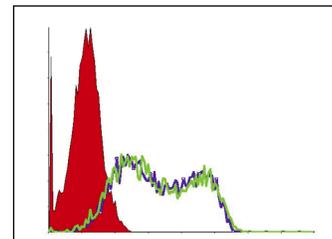
## RESEARCH USE

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

## DATA



TSHR (2C11): sc-32263. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.



Indirect FCM analysis of GPI-anchored TSHR (Da Costa CR, Johnstone AP. JBC, 1998). Red shaded histogram represents control mouse IgG. Blue line histogram represents TSHR (2C11), sc-32263. Green line histogram represents TSHR (4C1), sc-32262. Kindly provided by Dr. Alan Johnstone, St. George's, University of London.

## SELECT PRODUCT CITATIONS

- Zhang, W., et al. 2009. Presence of thyrotropin receptor in hepatocytes: not a case of illegitimate transcription. *J. Cell. Mol. Med.* 13: 4636-4642.
- Castro, I., et al. 2009. Identification and functional characterization of two novel activating thyrotropin receptor mutants in toxic thyroid follicular adenomas. *Thyroid* 19: 645-649.
- Lado-Abeal, J., et al. 2010. Identification and evaluation of constitutively active thyroid stimulating hormone receptor mutations. *Methods Enzymol.* 484: 375-395.
- Lado-Abeal, J., et al. 2010. Identification of a paired box gene 8-peroxisome proliferator-activated receptor  $\gamma$  (PAX8-PPAR $\gamma$ ) rearrangement mosaicism in a patient with an autonomous functioning follicular thyroid carcinoma bearing an activating mutation in the TSH receptor. *Endocr. Relat. Cancer* 17: 599-610.
- Draman, M.S., et al. 2021. Expression of endogenous putative TSH binding protein in orbit. *Curr. Issues Mol. Biol.* 43: 1794-1804.
- Lin, D., et al. 2022. Thyroid stimulating hormone aggravates diabetic retinopathy through the mitochondrial apoptotic pathway. *J. Cell. Physiol.* 237: 868-880.
- Jin, H., et al. 2022. Abrogation of self-tolerance by misfolded self-antigens complexed with MHC class II molecules. *Sci. Adv.* 8: eabj9867.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.