SANTA CRUZ BIOTECHNOLOGY, INC.

TSHR (C-10): sc-515556

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 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.

REFERENCES

1. Kosugi, S., et al. 1993. Substitutions of different regions of the third cytoplasmic loop of the thyrotropin (TSH) receptor have selective effects on constitutive, TSH-, and TSH receptor autoantibody-stimulated phosphoinositide and 3',5'-cyclic adenosine monophosphate signal generation. Mol. Endocrinol. 7: 1009-1020.
2. Breen, J.J., et al. 1997. The rat TSHβ gene contains distinct response elements for regulation by retinoids and thyroid hormone. Mol. Cell. Endocrinol. Metab. 131: 137-146.

CHROMOSOMAL LOCATION

Genetic locus: TSHR (human) mapping to 14q31.1.

SOURCE

TSHR (C-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 45-67 near the N-terminus of TSHR 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.

TSHR (C-10) is available conjugated to agarose (sc-515556 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515556 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515556 PE), fluorescein (sc-515556 FITC), Alexa Fluor® 488 (sc-515556 AF488), Alexa Fluor® 546 (sc-515556 AF546), Alexa Fluor® 594 (sc-515556 AF594) or Alexa Fluor® 647 (sc-515556 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515556 AF680) or Alexa Fluor® 790 (sc-515556 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515556 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

TSHR (C-10) is recommended for detection of full length and A subunit TSHR of 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 TSHR siRNA (h): sc-36754, TSHR shRNA Plasmid (h): sc-36754-SH and TSHR shRNA (h) Lentiviral Particles: sc-36754-V.

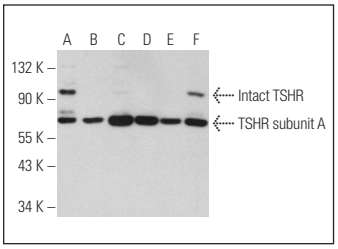
Molecular Weight of intact TSHR: 115 kDa.

Molecular Weight of TSHR A subunit: 62 kDa.

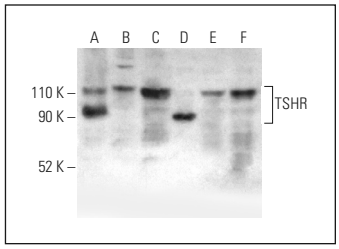
Molecular Weight of TSHR B subunit: 42 kDa.

Positive Controls: A2058 whole cell lysate: sc-364178, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

DATA



TSHR (C-10): sc-515556. Western blot analysis of TSHR expression in HEK293T (**A**), IMR-32 (**B**), HeLa (**C**), A2058 (**D**), Hep G2 (**E**) and Jurkat (**F**) whole cell lysates.



TSHR (C-10) HRP: sc-515556 HRP. Direct Western blot analysis of TSHR expression in HeLa (**A**), IMR-32 (**B**), Jurkat (**C**), A2058 (**D**), TT (**E**) and CCRF-CEM (**F**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lee, S.I., et al. 2017. Role of Krüppel-like factor 4 in the maintenance of chemoresistance of anaplastic thyroid cancer. Thyroid 27: 1424-1432.
2. Wu, Z., et al. 2022. TSH-TSHR axis promotes tumor immune evasion. J. Immunother. Cancer 10: e004049.
3. Zulkarnain, Z., et al. 2022. Comparative performance of ELISA and dot blot assay for TSH-receptor antibody detection in Graves' disease. J. Clin. Lab. Anal. 36: e24288.
4. Ma, R., et al. 2022. Insights into ferroptosis: targeting glycolysis to treat Graves' orbitopathy. J. Clin. Endocrinol. Metab. 107: 1994-2003.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.