SANTA CRUZ BIOTECHNOLOGY, INC.

TSHβ (FL-138): sc-28917

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. TSHβ is regulated by thyroid hormone (T3) and various retinoid compounds. TSHβ binds to the thyroid-stimulating hormone receptor (TSHR), which plays a major role in regulating thyroid function. TSHR is thought to exist in multiple glycosylation states. The third cytoplasmic loop of TSHR has been identified as critical for its role in regulating inositol phosphate and cAMP formation.

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. Graves, P.N., et al. 1996. Multimeric complex formation by the thyrotropin receptor in solubilized thyroid membranes. Endocrinology 137: 3915-3920.
3. Sanders, J., et al. 1997. Understanding the thyrotropin receptor function-structure relationship. Baillieres Clin. Endocrinol. Metab. 11: 451-479.
4. Breen, J.J., et al. 1997. The rat TSHβ gene contains distinct response elements for regulation by retinoids and thyroid hormone. Mol. Cell. Endocrinol. 131: 137-146.
5. Moyle, W.R., et al. 1998. Functional homodimeric glycoprotein hormones: implications for hormone action and evolution. Chem. Biol. 5: 241-254.

CHROMOSOMAL LOCATION

Genetic locus: TSHB (human) mapping to 1p13.2, LHB (human) mapping to 19q13.32; Tshb (mouse) mapping to 3 F2.2, Lhb (mouse) mapping to 7 B4.

SOURCE

TSHβ (FL-138) is a rabbit polyclonal antibody raised against amino acids 1-138 representing full length TSHβ of human origin.

PRODUCT

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

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 or our catalog for detailed protocols and support products.

APPLICATIONS

TSHβ (FL-138) is recommended for detection of TSHβ and, to a lesser extent, lutropin β of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TSHβ (FL-138) is also recommended for detection of TSHβ and, to a lesser extent, lutropin β in additional species, including equine, canine, bovine and porcine.

Molecular Weight of TSHβ: 17 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Li, N., et al. 2012. Prolonged high iodine intake is associated with inhibition of type 2 deiodinase activity in pituitary and elevation of serum thyrotropin levels. Br. J. Nutr. 107: 674-682.

RESEARCH USE

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