

Product Specification Sheet

Anti-Human Thyroid-stimulating hormone or Thyrotropin (TSH) Antibodies

<input type="checkbox"/> Cat # TSH11-M	Mouse Monoclonal Anti-Human TSH IgG, aff pure	SIZE: 100 ug
<input type="checkbox"/> Cat # TSH13-M	Mouse Monoclonal Anti-Human TSH IgG, aff pure	SIZE: 100 ug

Thyroid-stimulating hormone (also known as thyrotropin, TSH, or hTSH for human TSH) is a hormone that stimulates the thyroid gland to produce thyroxine (T₄), and then triiodothyronine (T₃) which stimulates the metabolism of almost every tissue in the bod. It is a glycoprotein hormone synthesized and secreted by thyrope cells in the anterior pituitary gland, which regulates the endocrine function of the thyroid gland. TSH stimulates the thyroid gland to secrete the hormone thyroxine (T₄), which has only a slight effect on metabolism. T₄ is converted to triiodothyronine (T₃), which is the active hormone that stimulates metabolism. About 80% of this conversion is in the liver and other organs, and 20% in the thyroid itself. The hypothalamus, in the base of the brain, produces thyrotropin-releasing hormone (TRH). TRH stimulates the pituitary gland to produce TSH. Somatostatin is also produced by the hypothalamus, and has an opposite effect on the pituitary production of TSH, decreasing or inhibiting its release. The concentration T₃ and T₄ in the blood regulates the pituitary release of TSH; when T₃ and T₄ concentrations are low, the production of TSH is increased, and, conversely, when T₃ and T₄ concentrations are high, TSH production is decreased in a negative feedback loop.

TSH is a glycoprotein and consists of two subunits, the alpha and the beta subunit. The α (alpha) subunit (i.e., chorionic gonadotropin alpha) is nearly identical to that of human chorionic gonadotropin (hCG), luteinizing hormone (LH), and follicle-stimulating hormone (FSH). The α chain has a 92-aa and β chain has a 118-aa. The β (beta) subunit (TSHB) is unique to TSH, and therefore determines its receptor specificity.

TSH concentrations are measured as part of a thyroid function test in patients suspected of having an excess (hyperthyroidism) or deficiency (hypothyroidism) of thyroid hormones. Interpretation of the results depends on both the TSH and T₄ concentrations. In some situations measurement of T₃ may also be useful.

Source of Antigen and Antibodies

Antigen	Human TSH protein
Ab Host/type	Mouse, Monoclonal , IgG2a, Aff pure IgG (cat # TSH11-M) in PBS, pH 7.5 containing 0.05% azide, Affinity contact 4.3 x 10 ¹⁰ L/mol #TSH12-M (IgG1) in PBS, pH 7.5 containing 0.05% azide
2-ab	Goat Anti-mouse IgG-HRP conjugate Cat # 40320 (AP, biotin, FITC conjugates also available)
-ve control IgG	Cat # 20008-1, Mouse (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage

Aff pure IgG

- 100ul solution lyophilized powder
Buffer: PBS contains 0.05% sodium azide
Reconstitute powder 100 ul of water

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 12 months at –20oC or below.

Shipping: 4oC for solutions and room temp for powder.

Specificity and crossreactivity

Mab #TSH11-M recognizes human TSH-beta (152%) and TSH-Alpha (<6%) and minimal reaction with HCG, LH, and FSH (<0.1%). Antibodies crossreactivity with TSH from other species (mouse, rat etc) have not been studies.

Mab #TSH13-M recognizes human TSH-beta (100%) and TSH-Alpha (<0.8%) and minimal reaction with HCG, LH, and FSH (<0.1%). Antibodies crossreactivity with TSH from other species (mouse, rat etc) have not been studies.

Recommended Usage

ELISA

TSH11-M or TSH13-M Suitable for coating or tracer. Matching.

Western Blotting (1:1K-5K) using Chemiluminescence substrates.

Histochemistry & Immunofluorescence: We recommend using perfusion-fixed rat brain (4% paraformaldehyde, 0.2% glutaraldehyde) tissues. We recommend an initial testing at 5-10 ug/ml. Users must optimize antibody dilution based upon their specific requirement.

General References: Seger, R. (1995) FASAB J., **9**, 726-735; Nagatsu, T., J. Biol. Chem., **239**, 2910 (1964); Grima, B., Nature, **326**, 707 (1987). Ichinose, H., BBRC., **195**, 158 (1993). 5. Haycock, J., J. Neurochem., **56**, 2139 (1991).

*This product is for In vitro research use only.

Related material available from ADI

- 0600 Human Thyroid Stimulating Hormone (TSH) ELISA Kit, 96 tests, Quantitative
- 0610 Human Anti-Thyroid Stimulating Hormone receptor (TSHR) antibody ELISA Kit, 96 tests, Quantitative
- TSH11-M Mouse Monoclonal Anti-Human TSH (thyrotropin) IgG, aff pure
- TSH12-A Anti-Thyroid Stimulating Hormone (TSH) IgG aff pure
- TSH13-M Mouse Monoclonal Anti-Human TSH (thyrotropin) IgG, aff pure
- TSH11-M 140625A

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