

Product Data Sheet

Cat # RP-1513

Human Thyroid Stimulating Hormone

**Size:** 10 ug

Glycoprotein hormones alpha chain, Anterior pituitary glycoprotein hormones common subunit alpha, Follicle-stimulating hormone alpha chain, FSH-alpha, Lutropin alpha chain, Luteinizing hormone alpha chain, LSH-alpha, Thyrotropin alpha chain, Thyroid-stimulating hormone alpha chain, TSH-alpha, Choriongonadotropin alpha chain, Chorionic gonadotrophin alpha subunit, CG-alpha, Thyrotropin subunit beta, Thyroid-stimulating hormone subunit beta, TSH-beta, TSH-B, Thyrotropin beta chain, Thyrotropin alfa. Thyroid-stimulating hormone (also known as TSH or thyrotropin) is a hormone synthesized and secreted by thyrotrope cells in the anterior pituitary gland which regulates the endocrine function of the thyroid gland. TSH stimulates the thyroid gland to secrete the hormones thyroxine (T<sub>4</sub>) and triiodothyronine (T<sub>3</sub>). TSH production is controlled by a Thyrotropin Releasing Hormone, (TRH), which is manufactured in the hypothalamus and transported to the Anterior Pituitary gland, where it increases TSH production and release. Somatostatin is also produced by the hypothalamus, and has an opposite effect on the pituitary production of TSH, decreasing or inhibiting its release. The level of Thyroid hormones (T<sub>3</sub> and T<sub>4</sub>) in the blood have an additional effect on the pituitary release of TSH. When the levels of T<sub>3</sub> and T<sub>4</sub> are low, the production of TSH is increased, and conversely, when levels of T<sub>3</sub> and T<sub>4</sub> are high, then TSH production is decreased. This effect creates a regulatory negative feedback loop. TSH is a glycoprotein and consists of two subunits, the *alpha* and the *beta* subunit. The  $\alpha$  (*alpha*) subunit is identical to that of human chorionic gonadotropin (HCG), luteinizing hormone (LH), follicle-stimulating hormone (FSH). The  $\beta$  (*beta*) subunit is unique to TSH, and therefore determines its function.

**Usage:** This item is for LABORATORY RESEARCH USE ONLY. The product may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals.

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**Source:** *Human pituitary glands* Thyroid Stimulating Hormone Human produced in Human pituitary glands having a molecular mass of 28.5Kda. An important indicator of thyroid function. Used to monitor thyroid associated diseases. Lyophilized from 0.05M NH<sub>4</sub>HCO<sub>3</sub> buffer, containing Trehalose at 25X hormone weight.

**Application and Suggested Dilution:** It is recommended to reconstitute the lyophilized TSH in de-ionized water. Greater than 96.0% as determined by SDS-PAGE. Users must optimize concentration and conditions for each assay.

**Storage and Stability:** TSH Human although stable at room temperature for 3 weeks, should be stored at -15°C. If supplied in powder then reconstitute it in 100 ul water for 1 mg/ml stock and store in liquid at 4°C for ~1 week or aliquots in suitable size and store at -20°C for long term storage.

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