ALPHA DIAGNOSTIC INTERNATIONAL

Product Data Sheet

☐ Cat # RP-592 | Recombinant Human Thyroid Stimulating Hormone | **Size**: ☐ 10 ug ☐ 50 ug

Synonyms:
Glycoprotein hormones alpha chain, Anterior pituitary glycoprotein hormones common subunit alpha, Follitropin alpha chain, 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, Choriogonadotropin 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.

Introduction:
Thyroid-stimulating hormone (also known as TSH or thyrotropin) is a hormone synthesized and secreted by thyrotropecells in the anterior pituitary glandwhich regulates the endocrine function of the thyroid gland.
TSH stimulates the thyroid gland to secrete the hormones thyroxine(T4) and triiodothyronine(T3). 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. Somatostatinis 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 (T3 and T4) in the blood have an additional effect on the pituitary release of TSH, When the levels of T3 and T4 are low, the production of TSH is increased, and conversely, when levels of T3 and T4 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 α (*alpha*) subunitis identical to that of human chorionic gonadotropin(HCG), luteinising hormone(LH), follicle-stimulating hormone(FSH).
The β (*beta*) subunit is unique to TSH, and therefore determines its function.

Description:
Thyroid Stimulating Hormone Human Recombinant is a heterodimeric glycoprotein produced CHO cells comprised of 2 non-covalently linked subunits-an a subunit of 92 amino acids & a b subunit of 118 amino acids and having a total molecular mass of 28.5 kDa.
The TSH is purified by proprietary chromatographic techniques.

Source:
Chinese Hamster Ovarian Cells

Physical Appearance:
Sterile Filtered White lyophilized (freeze-dried) powder.

Formulation:
The TSH was lyophilized from a concentrated (1.1 mg/ml) solution containing 36 mg mannitol, 5.1 mg sodium phosphate and 2.4 mg sodium chloride.

Solubility:
It is recommended to reconstitute the lyophilized Thyroid Stimulating Hormone in sterile 18MΩ-cm H2O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Stability:
Lyophilized Thyroid Stimulating Hormone although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution TSH should be stored at 4°C between 2-7 days and for future use below -18°C.
For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).
Please prevent freeze-thaw cycles.

Purity:
Greater than 98.0% as determined by:
(a) Analysis by RP-HPLC.
(b) Analysis by SDS-PAGE.

Biological Activity:
The activity measured by the amount of cyclic monophosphate (cAMP) produced by a bovine thyroid-derived microsome preparation in response to the TSH was found to be >4 IU/mg

Usage:
This item is for LABORATORY ESEARCH USE ONLY. The product may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals If supplied in powder then reconstitute it in 100 ul water for 1 mg/ml stock and store in liquid at 4oC for ~1 week or aliquots in suitable size and store at -20oC for long term storage..

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