Recombinant Human Thyrotropin Hormone Protein, His tagged

Cat. No. TSH-16H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Human Thyrotropin hormone, or thyroid-stimulating hormone (TSH), produced in HEK293 cells and purified by affinity chromatography and dialysis.
Species	Human
Source	HEK293
Description	Thyrotropin, or thyroid-stimulating hormone (TSH), is a glycoprotein hormone secreted by the anterior pituitary that plays a central role in regulating the endocrine function of the thyroid gland. Structurally, TSH consists of two subunits—alpha and beta—where the alpha subunit is common to other glycoprotein hormones (e.g., LH, FSH), and the beta subunit confers hormonal specificity by binding to TSH receptors on thyroid follicular cells. Upon binding, TSH stimulates the synthesis and release of thyroid hormones (T3 and T4), which in turn regulate metabolism, growth, and development. Clinically, serum TSH measurement is a cornerstone in the assessment of thyroid function, often used alongside free T4 and T3 assays for diagnosing hypo- or hyperthyroidism. Traditional TSH assays, however, have faced challenges such as cross-reactivity and glycosylation variability. To improve accuracy and standardization, recombinant human TSH has been developed and widely adopted in both diagnostic stimulation tests and thyroid cancer follow-up, offering enhanced assay consistency and safety. Recombinant TSH also eliminates the need for thyroid hormone withdrawal during testing, significantly improving patient quality of life and enabling more sensitive and specific diagnostic procedures.

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Form	Liquid in DPBS.
Molecular Mass	Expected Molecular Weight: 17.6 / 15.6 kDa Observed Molecular Weight: 28 /18 kDa
Storage	Short Term Storage: -80 centigrade Long Term Storage: -80 centigrade Avoid multiple freeze-thaw cycles. Can be frozen, but avoid multiple freeze-thaw cycles.
Concentration	0.18 mg/mL
Reference	1. Szkudlinski, M. W., et al. (2002). Thyroid-stimulating hormone and TSH receptor structure-function relationships. Physiological Reviews, 82(2), 473–502. 2. Pirahanchi Y, Toro F, Jialal I. Physiology, Thyroid Stimulating Hormone. [Updated 2023 May 1]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan, 3. Pacini F, Castagna MG. Diagnostic and therapeutic use of recombinant human TSH (rhTSH) in differentiated thyroid cancer. Best Pract Res Clin Endocrinol Metab. 2008 Dec;22(6):1009-21.

GENE INFORMATION

Gene Name	CGA glycoprotein hormones, alpha polypeptide [Homo sapiens]
Official Symbol	CGA
Synonyms	CGA; glycoprotein hormones, alpha polypeptide; glycoprotein hormones alpha chain; chorionic gonadotropin; alpha polypeptide; follicle stimulating hormone alpha subunit; FSHA; GPHa; GPHA1; HCG; LHA; luteinizing hormone alpha chain; lutropin alpha chain; thyroid stimulating hormone alpha chain; TSHA; FSH-alpha; LSH-alpha; TSH-alpha; follitropin alpha chain; thyrotropin alpha chain; choriogonadotropin alpha chain; chorionic gonadotrophin subunit alpha; thyroid-stimulating hormone alpha chain; follicle-stimulating hormone alpha chain; chorionic gonadotropin, alpha polypeptide; follicle-stimulating hormone alpha subunit; anterior pituitary glycoprotein hormones

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	common subunit alpha; CG-ALPHA;
Gene ID	1081
mRNA Refseq	NM_000735
Protein Refseq	NP_000726
MIM	118850
UniProt ID	P01215
Gene Name 2	TSHB thyroid stimulating hormone, beta [Homo sapiens]
Official Symbol 2	TSHB
Synonyms 2	TSHB; thyroid stimulating hormone, beta; thyrotropin subunit beta; thyrotropin beta chain; thyrotropin beta subunit; thyroid-stimulating hormone subunit beta; TSH-B; TSH-BETA
Gene ID 2	7252
mRNA Refseq 2	NM_000549
Protein Refseq 2	NP_000540
MIM 2	188540
UniProt ID 2	P01222

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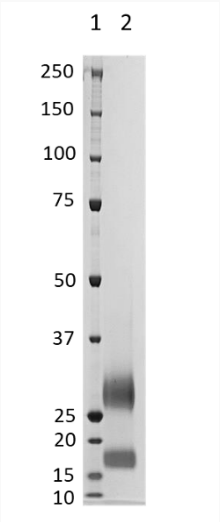
SDS-PAGE	

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