9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

GPHA2 Human

Thyrostimulin Alpha Human Recombinant
HRM0052

Product Overview

Name	GPHA2 Human
Description	
Thyrostimulin Alpha Human Recombinant	
Accession (Primary)	Q96T91
Synonyms	
GPA2, GPHA2, ZSIG51, Glycoprotein hormone alpha-2, MGC126572.	
Introduction	
Human thyrostimulin ranks among the glycoprotein hormone family. These hormones consist of two subunits, the common alpha- and specific beta-subunits, which associate noncovalently to form a heterodimer. The alpha-subunit combines with four distinct beta-subunits giving rise to four biologically active hormones in human: FSH, LH, TSH, and CG. FSH, LH, and TSH, mainly expressed in the anterior pituitary, are essential for coordinated endocrine regulation in the hypothalamus- pituitary axis and show to activate specific G protein–coupled receptors in the thyroid (TSH receptor) and gonads (LH and FSH receptors), respectively. The heterodimeric glycoprotein hormones have only been identified in vertebrates and are highly conserved in organisms from primitive rayfin fish (Chondrostei) to human in both primary sequences and functional characteristics. Corticotroph-derived glycoprotein hormone (CGH), also referred to as thyrostimulin, is a noncovalent heterodimer of glycoprotein hormone alpha 2 (GPHA2) and glycoprotein hormone beta 5 (GPHB5). Recombinant A2/B5 heterodimeric glycoproteins activates human TSH receptors, but not LH and FSH receptors, and shows high affinity to TSH receptors in a radioligand receptor assay. The heterodimer also stimulates cAMP production and thymidine incorporation by cultured thyroid cells and increases serum thyroxine levels in TSH-suppressed rats in vivo. This new heterodimeric glycoprotein hormone was named as thyrostimulin based on its thyroid-stimulating activity. The expression of thyrostimulin in the anterior pituitary known to express TSH receptors suggested a paracrine mechanism.	
Source	
Escherichia Coli.	
Physical Appearance	
Filtered White lyophilized (freeze-dried) powder.	
Formulation	
GPHA2 filtered (0.4 µm) and lyophilized from 0.5mg/ml in 0.05M Acetate buffer pH 4.	

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Stability

Lyophilized Thyrostimulin although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution GPHA2 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 95.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

Amino acid sequence

MRGSHHHHHH GMAS QEAVIPG CHLHPFNVTV RSDRQGTCQG SHVAQACVGH CESSAFPSRY SVLVASGYRH NITSVSQCCT ISGLKKVKVQ LQCVGSRREE LEIFTARACQCDMCRLSRY.

Solubility

It is recommended to add 0.1M Acetate buffer pH4 to prepare a working stock solution of ~ 0.5 mg/ml and let the lyophilized pellet dissolve completely. For conversion into higher pH value, we recommend intensive dilution by relevant buffer to a concentration of 10 µg/ml. In higher concentrations the solubility of this protein is limited. Product is not sterile! Please filter the product by an appropriate sterile filter before using it in the cell culture.

Precautions

GPHA2 Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (Q96T91)