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GPHA2 Human

Description:GPHA2 Human Recombinant produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 120 amino acids and having a total molecular mass of 13.28 kDa. The Thyrostimulin contains His tag which consists of 14 additional amino acids.The amino acid sequence of the recombinant human Thyrostimulin beta subunit is 100% homologous to the amino acid sequence of the human Thyrostimulin beta subunit without signal sequence. (N-terminal 24AA).Thyrostimulin is purified by proprietary chromatographic techniques.

Synonyms:GPA2, GPHA2, ZSIG51, Glycoprotein hormone alpha-2, MGC126572.

Source: Escherichia Coli.

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

Amino Acid Sequence:MRGSHHHHHH GMAS QEAVIPG CHLHPFNVTV RSDRQGTCQG SHVAQACVGH CESSAFPSRY SVLVASGYRH NITSVSQCCT ISGLKKVKVQ LQCVGSRREE LEIFTARACQCDMCRLSRY.

Purity: Greater than 95.0% as determined by(a) Analysis by RP-HPLC.(b) Analysis by SDS-PAGE.

Formulation:
GPHA2 filtered (0.4

Stability:
Lyophilized Thyrostimulin althoμgh 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.

Usage:
NeoBiolab's products are furnished for LABORATORY RESEARCH USE ONLY. They may not be used as drμgs, agricultural or pesticidal products, food additives or household chemicals.

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 10g/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.

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 proteincoupled receptors in the thyroid (TSH receptor) and gonads (LH and FSH receptors), respectively.The heterodimeric

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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 sμggested a paracrine mechanism.

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