Data Sheet (Cat.No.TMPY-03812)

TargetMol

GPHA2 Protein, Human, Recombinant (mFc)

General Information

Synonyms:	ZSIG51;glycoprotein hormone α 2;A2;GPA2;glycoprotein hormone alpha 2
Protein Construction:	A DNA sequence encoding the human GPHA2 (Q96T91) (Met1-Tyr129) was fused with Fc region of mouse IgG1 at the C-terminus. Predicted N terminal: Gln 24
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q96T91
Molecular Weight:	38.1 kDa (predicted); 38-43 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 85 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

GPHA2 is a member of the glycoprotein hormones subunit alpha family. Glycoprotein 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 the human: FSH, LH, TSH, and CG. GPHA2 and glycoprotein hormone beta 5 (GPHB5) can form a noncovalent heterodimer. GPHA2 can be detected in a variety of tissues. Recombinant A2/B5 heterodimeric glycoproteins

activate 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 Thyrostimulin based on its thyroid-stimulating activity. The expression of Thyrostimulin in the anterior pituitary known to express TSH receptors suggested a paracrine mechanism.

Reference

Hsu SY. et al., 2002, Science. 295 (5555): 671-4.
Suzuki C. et al., 2007, Regul Pept. 142 (1-2): 60-7.
Breous E. et al., 2006, Mol Cell Endocrinol. 245 (1-2): 169-80.

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