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Pituitary hormones related Antibodies

Chorionic Gonadotropin Hormone (CG) beta-subunit antibodies (Cat # CG-101AP, CG-112AP, P-CG100, P-CG110 & PC-CG)

Alternate Nomenclature: Chorionic gonadotropin hormone, glycoprotein hormones,

The pituitary hormones, luteinizing hormone (lutropin, LH), chorionic gonadotropin (CG), thyroid stimulating hormone (TSH) and follicle stimulating hormone (folliotropin, FSH) are referred to as glycoprotein hormone/gonadotropic hormones because of their similar structure, glycoprotein composition and action on gonadal cells. All these hormones are heterodimeric in nature composed of two un-identical subunits, alpha and beta which are non-covalently associated, Among humans and other species, the Alpha subunit is identical for all these hormones and is coded by a single gene, where is beta subunits are distinct but homologous and arise from separate genes. The individual hormone subunits and peptides derived from them have shown some binding activities to their respective receptors, the association of alpha and beta subunits clearly is required for optimal activation and physiological responses elicited by these hormones. Within the heterodimeric hormones, the beta subunit confers the binding activity to its respective receptor. The LH and CG beta subunits have 85% sequence identity in their first 114 amino acids, the LH/CG receptors can recognize either of the pituitary LH or placental CG hormones.

The alpha and beta subunits of LH, CG and FSH are highly glycosylated (1). The alpha subunit has two N-linked oligosaccharide chain at position 52 and 78 and beta subunits have one in LH and TSH and two in CG and FSH. The CG beta subunit also has an extension of serine O-linked carbohydrates at carboxyl end which help is plasma half like of CG compared to other glycol hormone beta subunits. The N-linked oligosaccharides on FSH are sialylated whereas LH and TSH are sialylated and sulfated. There are 10-12 cystins forming 3 disulfide bonds referred to as "cystine knots" in each of the beta subunits of these hormones which are conserved in various species. Adenohypophyseal gonadotroph cells synthesize and secrete LH and FSH under independent regulatory controls and their release by pituitary is positively regulated by hypothalamic decapeptide gonadotropin releasing hormone (GnRH) and is negatively regulated by feedback effects of gonadal steroids and gonadal, peptide inhibin, a peptide produced in testis and ovaries in response to FSH (2). Both males and females synthesize and secrete FSH and LH by gonadotrope cells of the anterior pituitary. In females progesterone and estrogen inhibit LH and FSH release. The action of LH and CG are carried out by LH/CG receptors and FSH effects are by independent FSH receptors with GPCR associated 7TMDs.

The human chorionic gonadotropin hormone (hCG)-selective antibodies were generated against peptide form unique region near of human CG sequences from beta chain corresponding to region that is common in many species but these sequences are not present in other proteins. FabGennix Inc. has generated rabbit anti-CG mono-epitope-specific antibodies utilizing linear and cyclic peptide methodology. The Anti-CG antibodies have been fully characterized for cross reactivity with other species CG molecules and with cellular proteins using Western blot analyses. The CG antibody is also available as FITC-conjugate, other conjugates can be ordered at a nominal charge. FabGennix International Inc., has produced antibodies to several other pituitary hormones, for a complete listing please visit www.FabGennix.com. These and other antibodies, reagents and kits are now available for sale via our worldwide distribution centers. FabGennix Int. Inc., also provide western blot positive controls and antigenic blocking peptide for this antibody. Please inquire for pricing and availability.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	volume
CG-101AP	Rabbit	Affinity purified CG beta subunit (N-epitope) antibodies	H	100 mg	200ul
CG-112AP	Rabbit	Affinity purified CG beta subunit (C-epitope) antibodies	H	100 mg	200ul
P-CG100	Rabbit	Antigenic blocking peptide for CG-101AP antibody	n/a	250 ug	100ul
P-CG110	n/a	Antigenic blocking peptide for CG-112AP antibody	n/a	250 ug	100ul
PC-CG	n/a	Western blot positive control for CG	n/a	5 appl	inquire

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; * not all variants are labeled equally

Immunogen: Synthetic peptides corresponding to 52-70 amino acids of human hCG (cge ggl prv hhr qhh hlc r) and amino acids 109-135 (cge ggl prv hhr qhh hlc r). peptide 52-70 was cyclized via a disulfide bond formation at positions 1-17. The second peptides was also covalently modified to achieve desired antigenicity before coupling to carrier protein.

Concentration: GC-101AP and GC-112AP IgG concentration 0.55-063 mg/ml in antibody stabilization buffer.

Applications: Antibodies CG-101AP and CG-112AP are ideal for IHC applications, WB, dot blot and ELISA applications. Application of these antibodies in other methodologies (confocal, Biacore etc.,) has not been tested. The dilutions for this antibody is for reference only, investigators are expected to determine optimal conditions for specific assay. WB; n.d; IMM & i.p pull-down assays:>n.d. IHC 1:250and ELISA 1:50,000 in diluObuffer (Cat # FGI-1963) Application of this antibody in protocols not listed here does not necessarily exclude its use in such procedures. It is highly recommended that user titrate and the use of this antibody in a particular application with positive and negative controls.

Reactivity: This antibody labels gonadotrophs in pituitary sections. The antibody does not react to other cellular proteins that are tested during characterization of this antibody. The antibody labels a 39kDa band of CG in PC-CG samples.

Protocols: General information on this antibody is provided in the specification sheet, all standard protocols for various applications (WB, IMM and IHC) of this or other catalog antibodies can be obtained by calling our technical support line. FabGennix strongly recommends that investigators standardized the optimal conditions for their applications.

Form/Storage: The antiserum is supplied in antibody stabilization buffer with 0.02% sodium azide. For long-term storage of antibodies, store at -20°C. FabGennix Int. Inc. does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluObuffer). Working solutions of antibodies in DiluObuffer should be filtered through 0.45µ filter after every use for long-term storage.

Notes: This product is "ready-to-use" for use in listed applications, use of this product in other applications must be standardized.

New Reagents: Now you can recycle your western blots (nitrocellulose, supported membranes and PVDF membranes) by using our StripObuffer (Cat FGI-1989). Each stripping is guaranteed to give better signal (up to 8 stripping). No strong pungent smell of reducing agents or heating required. Block in 5X diluObuffer and you are ready for blotting with a new antibody

References:

- Sairam M.R., Role of carbohydrates in glycoprotein hormone signal transduction FASEB, 3:1915-1926, 1989.
- Thiornier et. al., Ion: Williams text book Endocrinology. Wilson JD and Foster WD Eds. Philadelphia, 1992.

*For users who may require large amounts of CG-101AP and CG-112AP, please enquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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