Human Chorionic Gonadotropin α/β (HCG) Antibody

Recombinant Monoclonal Rabbit IgG Clone # 1177B
Catalog Number: MAB97701

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Chorionic Gonadotropin α/β (HCG) and Human CG α in direct ELISAs.
Source	Recombinant Monoclonal Rabbit IgG Clone # 1177B
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Chinese Hamster Ovary cell line, CHO-derived human Chorionic Gonadotropin α/β (HCG) and Human CG α Ser21-Gln165 and Ala25-Ser116 Accession # P01233 and P01215
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

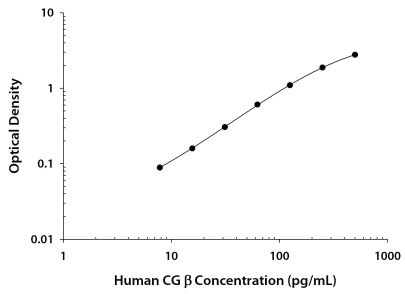
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

ELISA	This antibody functions as an ELISA capture antibody when paired with Rabbit Anti-Human Chorionic Gonadotropin α/β (HCG) Monoclonal Antibody (Catalog # MAB97702). *This product is intended for assay development on various assay platforms requiring antibody pairs. We recommend the Human CG beta (HCG beta) DuoSet ELISA Kit (Catalog # DY9034-05) for convenient development of a sandwich ELISA.*

DATA

ELISA



Human Chorionic Gonadotropin α/β (HCG) ELISA Standard Curve. Recombinant Human Chorionic Gonadotropin α/β (HCG) protein was serially diluted 2-fold and captured by Mouse Anti-Human Chorionic Gonadotropin α/β (HCG) Monoclonal Antibody (Catalog # MAB97701) coated on a Clear Polystyrene Microplate (Catalog # DY990). Rabbit Anti-Human Chorionic Gonadotropin α/β (HCG) Monoclonal Antibody (Catalog # MAB97702) was biotinylated and incubated with the protein captured on the plate. Detection of the standard curve was achieved by incubating Streptavidin-HRP (Catalog # DY998) followed by Substrate Solution (Catalog # DY999) and stopping the enzymatic reaction with Stop Solution (Catalog # DY994).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

HCG (human chorionic gonadotropin) is a member of the glycoprotein hormone (GPH) family within the cystine knot growth factor superfamily (1-5). It is a heterodimer of a 23-32 kDa unique subunit, CGb, with a 14-22 kDa alpha subunit, CGa (common glycoprotein hormone alpha) that is shared with GPH family members lutropin (LH), follitropin (FSH) and thyroid stimulating hormone (TSH) (1, 2). CGb occurs only in higher primates, while the most closely related hormone, LHb, is expressed in all mammals (6). Human CGb and LHb share a receptor, LH/CG-R or LHR, and show 86% aa sequence identity between aa 21 and 133, before diverging into a 32 aa, highly O-glycosylated (CGb) or 8 aa (LHb) C-terminal tail (2). Mature human CGa shares 69%-73% aa identity with dog, rabbit, rat, mouse, cow, sheep, pig, cat and horse CGa. Each subunit form a cystine knot structure with three disulfide bridges (5). A “seat-belt” loop of CGb wraps around CGa, stabilizing subunit non-covalent association and conferring receptor selectivity (5). CGb is encoded by six clustered, nonallelic genes that encode identical, but differentially expressed, proteins (2, 7). HGC produced by cytotrophoblast cells in early pregnancy is hyperglycosylated and sialylated, increasing its acidity and half-life (3, 4, 8). Forms with lower glycosylation are produced by syncytiotrophoblasts in continuing pregnancy, and in small amounts by the pituitary where it is also sulfated (4, 8). Free, variably glycosylated CGb subunits are also reported (3, 4). The primary role of HCG is to act as an autocrine factor to establish pregnancy and control placental growth and function. HCG has also been shown to induce the angiogenic factor, EG-VEGF/PK1, and contribute to immune privilege by increasing circulating regulatory T cells and anti-inflammatory cytokines IL-10 and IL-27, via cAMP signaling (9, 10). In addition to pregnancy, large amounts of HCG are produced in gestational trophoblastic diseases such as choriocarcinoma and hydatiform mole (3, 4). HCG may also be produced by ovarian and testicular germ cell tumors and advanced cancers that have dedifferentiated (3, 4).

References:

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