

#### DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Human                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects human Chorionic Gonadotropin $\beta$ in direct ELISAs.                                                                                                                                                                                                              |
| <b>Source</b>             | Monoclonal Rabbit IgG Clone # 1270D                                                                                                                                                                                                                                         |
| <b>Purification</b>       | Protein A or G purified from cell culture supernatant                                                                                                                                                                                                                       |
| <b>Immunogen</b>          | Human embryonic kidney cell HEK293-derived transfected with human Chorionic Gonadotropin $\beta$<br>Accession # P0DN86 nad P0DN87                                                                                                                                           |
| <b>Conjugate</b>          | Alexa Fluor 532<br>Excitation Wavelength: 534 nm<br>Emission Wavelength: 553 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

#### 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** Optimal dilution of this antibody should be experimentally determined.

#### PREPARATION AND STORAGE

**Shipping** The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

#### 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, CG $\beta$ , with a 14-22 kDa alpha subunit, CG $\alpha$  (common glycoprotein hormone alpha) that is shared with GPH family members lutropin (LH), follitropin (FSH) and thyroid stimulating hormone (TSH) (1, 2). CG $\beta$  occurs only in higher primates, while the most closely related hormone, LH $\beta$ , is expressed in all mammals (6). Human CG $\beta$  and LH $\beta$  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 (CG $\beta$ ) or 8 aa (LH $\beta$ ) C-terminal tail (2). Mature human CG $\alpha$  shares 69%-73% aa identity with dog, rabbit, rat, mouse, cow, sheep, pig, cat and horse CG $\alpha$ . Each subunit form a cystine knot structure with three disulfide bridges (5). A "seat-belt" loop of CG $\beta$  wraps around CG $\alpha$ , stabilizing subunit non-covalent association and conferring receptor selectivity (5). CG $\beta$  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 CG $\beta$  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).

#### PRODUCT SPECIFIC NOTICES

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