

HUMAN CHORIONIC GONADOTROPHIN

Description:

Human chorionic Gonadotrophin (hCG) is a glycoprotein hormone produced in pregnancy that is made by the developing embryo after conception and later by the syncytiotrophoblast (part of the placenta). Human chorionic gonadotrophin is a glycoprotein composed of 237 amino acids. It is heterodimeric, with an α (alpha) subunit identical to that of luteinizing hormone (LH), follicle-stimulating hormone (FSH), thyroid-stimulating hormone (TSH), and β (beta) subunit that is unique to hCG.

Application:

Human chorionic gonadotrophin interacts with the LHCG receptor and promotes the maintenance of the corpus luteum during the beginning of pregnancy, causing it to secrete the hormone progesterone. Progesterone enriches the uterus with a thick lining of blood vessels and capillaries so that it can sustain the growing fetus. Due to its highly-negative charge, hCG may repel the immune cells of the mother, protecting the fetus during the first trimester. It has also been hypothesized that hCG may be a placental link for the development of local maternal immunotolerance. For example, hCG-treated endometrial cells induce an increase in T cell apoptosis (dissolution of T-cells). Because of its similarity to LH, hCG can also be used clinically to induce ovulation in the ovaries as well as testosterone production in the testes. Human chorionic gonadotrophin also plays a role in proliferation, cellular differentiation and activate apoptosis.

MW: ~39.5Kda.

Unit Definition:

Human chorionic gonadotrophin is biologically standardized and the potency is declared in terms of the IP/BP/USP Reference Standard.

Available form:

Lyophilized powder confirming to IP/BP/USP specifications.

Solubility :

Freely soluble in water; soluble in aqueous glycerol and glycols. Insoluble in alcohol, acetone, ether.

Stability and storage:

Stable for 3 years at temperature not exceeding 20°C in sealed tamper proof containers.

Reference:

1. Merck Index, 12th Ed.,# 2216, p.368.
2. J. Reprod.Fertil., 12, 23-31 (1966).
3. J.Biol.Chem. 244, 567 (1969).