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ProductInformation

Chorionic gonadotropin from human

Product Number **C 2047**
Storage Temperature -20 °C

Product Description

CAS Number: 9002-61-3
pI = 2.95[1]
Extinction Coefficient: E^{mM}=3.88 (278nm)[2]
Synonym: Choriogonin, hCG

The molecular weight is approximately 37.9 kDa (with approximately 31% carbohydrate by weight). The theoretical molecular weight is 37.9 kDa based on the native form, which contains 2 subunits. The α subunit has a molecular weight of 14.9 kDa of which approximately 10.2 kDa is for the polypeptide and approximately 4.7 kDa for the carbohydrate. The β subunit has a molecular weight of 23 kDa of which approximately 16.0 kDa is for the polypeptide and approximately 7.0 kDa is for the carbohydrate.[3,4,5]

Product Number C 2047 is suitable for radioiodination and use in RIA.

hCG is a glycoprotein hormone produced by the chorionic tissue of the placenta. It is a member of the glycoprotein hormone family which includes luteinizing hormone (LH), follicle-stimulating hormone (FSH), and thyroid-stimulating hormone (TSH). Its function is to maintain the corpus luteum and stimulate steroid secretion from the ovary in the beginning stages of gestation. hCG appears in the blood and urine during the first trimester of early pregnancy and levels decrease thereafter. It has been used for superovulation in animals.[6]

hCG consists of an α subunit of 92 amino acids and a β subunit of 145 amino acids.[1] The α subunit is common among the family of glycoprotein hormones, whereas the hormone-specific β subunit, which exhibits different degrees of homology, may confer biologic specificity of the individual hormone.[1] The amino acid sequences of the α subunit[3,7] and the β subunit[4,7] and the crystal structure of hCG[8] have been reported.

When hCG was used in combination with recombinant interferon-γ, there was a significant cooperative induction of nitric oxide synthesis (iNOS) in a dose-dependent manner in mouse peritoneal macrophages suggesting that hCG may provide a second signal for synergistic induction of NO synthesis.[9]

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

hCG is soluble in water. It is also soluble in aqueous glycerol and glycols and is insoluble in ethanol.[1] Solutions should be sterile filtered not autoclaved.

Storage/Stability

Dilute aqueous solutions undergo rapid loss of activity when stored frozen, or heated, or if excess acid or base is added. Gelatin and serum proteins help to stabilize aqueous solutions of hCG. hCG is stable in a glycerol solution at 100 °C for one hour.[10]

Solutions in water at ≥ 10 µg/ml can be stored as single use aliquots at 20 °C. Solutions at 100 µg/ml in water are stable at 2-8 °C for about 2-3 months.

References

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5. Swaminathan, N., and Bahl, O. P., Dissociation and recombination of the subunits of human chorionic gonadotropin. Biochem. Biophys. Res. Commun., **40(2)**, 422-427 (1970).
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8. Lapthorn, A. J., et al., Crystal structure of human chorionic gonadotropin. Nature, **369(6480)**, 455-461 (1994).
9. Kim, H. M., and Moon, Y. H., Human Chorionic Gonadotropin induces nitric oxide synthase mRNA in mouse peritoneal macrophages. Biochem. Biophys. Res. Commun., **229(2)**, 548-552 (1996).
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