

TERMINOLOGIA

Human Chorionic Somato-Mammotropin (HCS), Proposed Terminology for Designation of a Placental Hormone

Recent studies of JOSIMOVICH¹, GRUMBACH and KAPLAN² and their co-workers on the human placenta, indicate that it contains a new protein hormone, possessing some biological properties in common with those of human pituitary growth hormone (HGH): (a) it exhibits lactogenic activity in the pigeon and pseudopregnant rabbit¹. (b) It has growth-promoting activity as indicated by the rat body weight and costal cartilage assays³⁻⁴. (c) It is active as a luteotropic agent⁵. (d) It stimulates protein synthesis in a cell-free system³. (e) It facilitates lipolysis in vivo⁶ and in vitro⁷. (f) Although it has low potency in promoting growth, it enhances the activity of HGH^{3,8} in the rat. (g) It causes hypoglycemia⁴ in the rat. (h) When administered in amounts sufficient to raise the concentration in plasma to that found in late pregnancy, it promotes nitrogen, potassium, phosphorus, and calcium retention, as well as calciuria, in patients with hypopituitary dwarfism⁹ in whom it also has been shown to have a diabetogenic and insulinogenic effect. (i) Immunologically^{1,2}, the hormone cross-reacts with rabbit antisera to human growth hormone.

The hormone has been obtained in highly purified form^{3,4,10,11} and shown to be a protein of mol. wt. about 20,000 with a single polypeptide chain. The NH₂- and COOH-terminal amino acid residues were found to be valine and phenylalanine respectively and certain amino acid sequences of the hormone were shown to be similar to that of HGH^{12,13}. The hormone has been named as human placental lactogen (HPL)¹ and chorionic growth hormone-prolactin (CGP)² and has also been designated as purified placental protein (human) [PPP(H)]³ and placental protein⁴.

In order to eliminate confusion by the use of different terms for the same hormone, we wish to propose that henceforth the hormone be called human chorionic somato-mammotropin. Since the hormone is located in the syncytiotrophoblastic layer of the human placenta¹⁴, the same cells producing human chorionic gonadotropin (HCG) and since it has both growth hormone (somatotropin) and lactogenic hormone (mammotropin) activities, it would be practical to designate a term which is in line with the established terminology for a gonadotropin produced by the human placenta. Hence, the name human chorionic somato-mammotropin (HCS) indicates the origin of the hormone as well as the biological properties now known¹⁵.

Zusammenfassung. Es wird vorgeschlagen, dass das von verschiedenen Forschern als «human placental lactogen», «chorionic growth hormone prolactin», «purified placental protein (human)» usw. bezeichnete placentare Hormon «chorionic somato-mammotropin (HCS)» benannt wird.

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- ¹⁵ This communication was the result of a discussion during a Round Table Conference on Human Placental Lactogen held at the University of Siena on September 1967 which was arranged by Drs. E. E. MÜLLER and P. NERI.

PRO EXPERIMENTIS

Sterile Submerged Culture of Some Gramineous Plantlets

Sterile cultures of various plant organs, such as roots, stems or embryos, in synthetic agar or liquid media have been described by a number of authors^{1,2}, but the submerged, shaken culture of whole plants has not yet been reported.

Seeds of wheat (*Triticum vulgare*, var. Mentana) were sterilized for 5 min in a 0.1% solution of HgCl₂. The embryos, separated from the seed by means of a sterile needle after repeated rinsing with distilled water, were placed in 100 ml of White's medium (WHITE³, p. 74) in

500-ml flasks: the latter were on a shaker rotating at 200 rpm and with a throw of 5 cm. The cultures were incubated at 27 °C and in the dark. Under these conditions, the embryos started germinating after 24–48 h. After

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