Growth hormone (GH)

GH is produced by the pituitary gland and plays a crucial role in growth,metabolism, and various physiological processes, cell reproduction, and cell regeneration in humans and other animals. It is thus important in human development. It is a type of mitogen that is specific only to certain kinds of cells.

Growth hormone is a 191-amino acid, single-chain polypeptide that is synthesized, stored, and secreted by somatotropic cells within the lateral wings of the anterior pituitary.

GH is a stress hormone that raises the concentration of glucose and free fatty acids.

Growth hormone (GH), which has been extracted from the pituitary gland since early times, has become easily available by the advance of genetic engineering.

see Long acting growth hormone.

GH normally has pulsatile secretion (≈ 5–10 pulses/ 24 hours, primarily at night, up to 30 mcg/L), levels may be undetectable (< 0.2 mcg/L) by standard assays between pulses.

There is uncertainty about the appropriate cut-off for the diagnosis of growth hormone deficiency and little data about the yield of significant abnormal findings in patients with peak growth hormone (GH) of 7-10 ng/mL.

IGF-1 is the primary test for excess growth hormone (GH); direct measurement of GH is unreliable

Insulin-like growth factor-1 (IGF-1) (formerly known as somatomedin-C) is the protein secreted primarily by the liver in response to GH that is responsible for most of GH's systemic effects. GH also acts directly on epiphyseal endplates of long bone to stimulate chondrocyte proliferation. Control: GH is under dual hypothalamic control via the hypophysial portal system. GH-releasing hormone (GHRH) from the arcuate nucleus stimulates the pituitary secretion and synthesis of GH and induces GH gene transcription. Somatostatin from the periventricular nucleus suppresses GH release only, and has no effect on synthesis. GH release is also stimulated by ghrelin, a peptide synthesized primarily in the GI tract in response to certain nutrients (may act partially or totally via hypothalamic GHRH).

Growth hormone related pathology

see Growth hormone related pathology.

Growth hormone replacement therapy

Growth hormone replacement therapy.

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