Estimation of GH

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Growth hormone is produced by the anterior pituitary. It is made up of 191 amino acids that make a long single-chain polypeptide. It is synthesized in somatotropic cells found in the anterior pituitary .gland. These cells also store and release the hormone

The growth hormone is responsible for the regulation of several physiological processes such as growth and metabolism. It is also .used as a drug in animals and plants

Types of Growth Hormone

Growth hormones are of two types:

Somatotropin– growth hormones are otherwise referred by this name and is formed in animals

Somatropin – these are growth hormones that are in the synthetic form produced utilizing recombinant DNA technologies.

Effects of Growth Hormone

:The growth hormone has the following effects

Physiological Effects

There are two different types of physiological effects of growth :hormones

Direct Effects-1

These are observed when the growth hormone binds with the receptor on the target cells. For eg., fat cells have growth hormone receptors which are stimulated by these hormones to break the triglycerides and suppress their ability to accumulate circulating .fats

Indirect Effects-2

These are mediated by the insulin-like growth factor. Several growth-promoting effects of the hormone are due to the insulin-like .growth factor acting on its target cells

Metabolic Effects

The growth hormone has essential effects on proteins, .carbohydrates and lipid metabolism

Protein Metabolism

The metabolic effect reflects increased protein synthesis and .decreased protein oxidation

Lipid Metabolism

Growth hormone stimulates triglyceride breakdown and adipocytes .oxidation

Carbohydrate Metabolism

Growth hormone maintains blood glucose levels and it is believed to have anti-insulin activity, which suppresses the ability of insulin .to take up glucose

Growth Hormone Function

:Following are the important growth hormone function

.It maintains normal body structure and metabolism-

.Maintains, builds, and repairs healthy tissue in the brain and other organs-

The growth hormone is utilized widely in medicines that heal the growth-

.disorders in children and hormone deficiency in adults

.The growth hormone enhances growth in adolescents and children-

It also contributes to the regulation of body fluids, fat metabolism, sugar and-

.also the functions of the heart

The growth hormone reduces body fat by increasing bone density and muscle-

.mass

The energy levels rise consequently, along with improved skin tone and bone-

.density

Regulation of Growth Hormone

The formation of growth hormone is regulated by the releasing hormone called somatocrinin along with inhibiting hormone called somatostatin, which is released by the neurosecretory nuclei of the .hypothalamus

These regulating hormones are liberated in the hypophysial portal blood that surmounts the pituitary gland. The release of a hormone in the pituitary is monitored by these two hormones that are .affected by many external inhibitory factors

Various factors stimulate the release of growth hormone, which :includes

Ghrelin acts by linking to GHSR (Growth Hormone Secretagogue- .Receptors)

The growth hormone-releasing hormone acts by linking to- .GHRHR (Growth Hormone Releasing Hormone Receptor)

Sex hormones like estrogen and androgens stimulate the secretion- .of growth hormone at the time of puberty

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Thank you for listening