

# HORMONES

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# HORMONES

- ▶ Hormones are chemical messengers, directly secreted into the blood or extracellular fluid, which bind specific receptors on target cells.

# CLASSIFICATION OF HORMONES

- ▶ The following Three categories of classification of hormones
  1. According to Chemical Nature
  2. According to Origin
  3. According to Nature of Action

# According to Chemical Nature

- ▶ Steroid Hormones  
e.g. Testosterone, Estrogen, Progesterone
- ▶ Amine Hormones  
e.g. T3, T4, epinephrine, norepinephrine.
- ▶ Peptide Hormones  
e.g. Oxytocin and vasopressin
- ▶ Protein Hormones  
e.g. Insulin and glucagon
- ▶ Glycoprotein Hormones  
e.g. LH, FSH
- ▶ Eicosanoids Hormones  
▶ e.g. Prostaglandins.

# On the Basis of Origin

- ▶ Reproductive hormones primarily derived from four major organ or system
- ▶ Hypothalamus
- ▶ Anterior and posterior lobe of pituitary gland
- ▶ Gonads (testis and ovary including their interstitial tissues and corpus luteum)
- ▶ Placenta and Uterus

# According to Nature of Action

- ▶ General Hormones: Growth hormone influence nearly all the body tissues, similar is the case with Thyroid and Insulin hormones, hence they fall in general category.
- ▶ Specific Hormones: these hormones affect functions of specific organs, e.g. FSH and androgens.
- ▶ Local Hormones: Prostaglandins, Acetyl choline, Histamine act locally to their site of production.

# Mechanism of Action

- ▶ The first step of a hormone's action is to bind to specific receptors at the target cell. Some receptors are located on cell membrane while some are located in cytoplasm and nucleus. These receptors are protein in nature and usually 2000-100,000 receptors are present on each cell. Receptors are located on specific in/on target cells