Hormone and its Classification

By Dr. Shashi Prabha
HOD , Zoology Dept.
Karim City College

Semester - III, Paper CC-6

<u>Introduction</u>

Starling and Bayliss have defined hormone as a chemical agent which is released from one group of cells and travel via the blood stream to affect one or more different group of cells

Hormones - Classification

There are three categories for classification of hormones

1. According to Chemical Nature :

    Depending upon their chemical nature hormones are classified as

    o Steroid Hormones   : Example – Testosterone , estrogen , Progesterone

    o Amine Hormones   : Example – T3, T4, Epinephrine, Norepinephrine
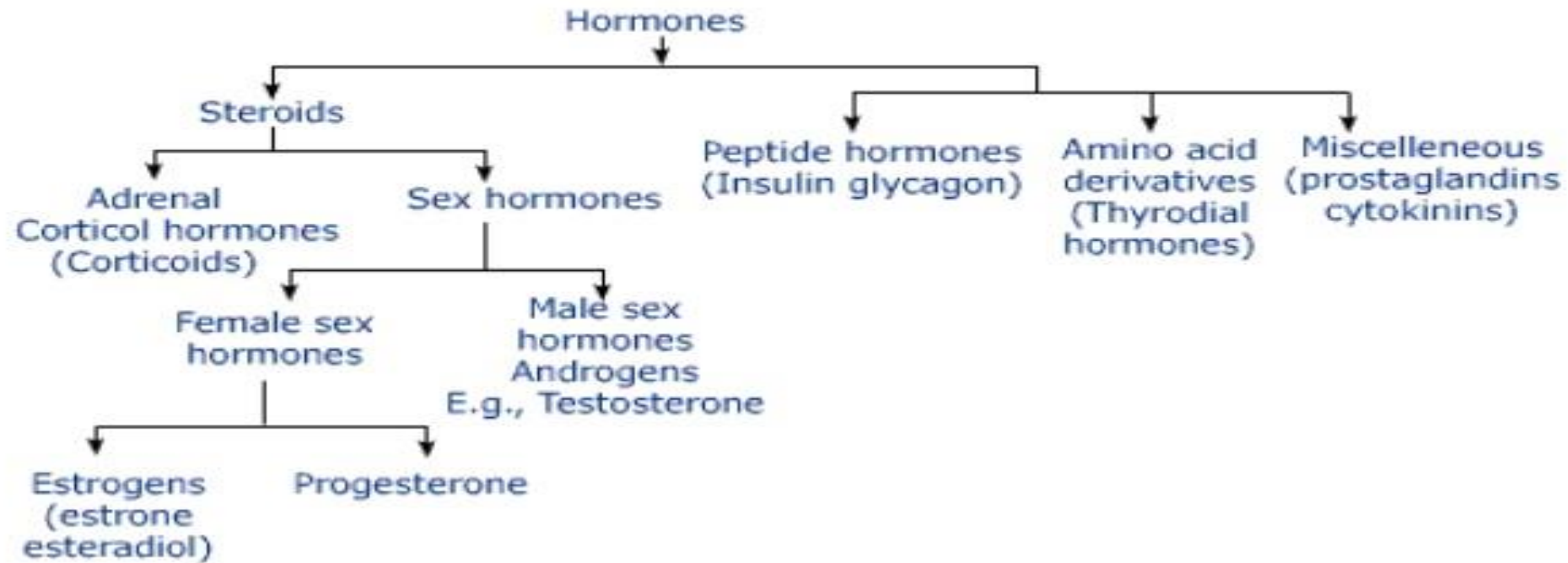
Hormones - Classification

○ Peptide Hormones : Example - Oxytocin and Vasopressin

○ Protein Hormones   : Example – Insulin and Glucagon

○ Glycoprotein Hormones   : Example – LH, FSH

○ Eicosanoids Hormones   : Example - Prostaglandins

Chemical Classification

Hormones - Classification

2. According to Nature of Action :

Depending upon their nature of action, hormones are classified as

- General Hormones : These hormones influence nearly all the body tissues , such as Growth Hormones, Thyroid Hormones and Insulin etc.

Hormones - Classification

2. **According to Nature of Action** (contd.):

○ Specific Hormones : These hormones affect functions of specific organs, such as FSH and Androgens

○ Local Hormones : Prostaglandins , Acetyl Cholin , Histamine act locally at their site of production

Hormones - Classification

3. According to Solubility :

○ Water Soluble Hormones : Water soluble hormones interact with receptor proteins and cause a cascade of events inside the cells. These are protein hormones soluble in water e.g. ADH, Insulin, Epinephrine, HGH etc.

Hormones - Classification

3. ## According to Solubility (contd..):

◦ Lipid Soluble Hormones : Lipid soluble hormones cross the plasma membrane and interact with the genes inside the cell. These are mainly steroid hormones made from cholesterol , soluble in fat not water e.g. estrogen, progesterone and testosterone

Classification

*2. Based on solubility (hydrophilic or hydrophobic) in plasma
(also reflects the way they are transported in the plasma)*

- Hydrophilic hormones are <u>transported dissolved in the blood stream</u>.
- Includes peptide hormones and catecholamines.

- Hydrophobic (or lipophilic) hormones are <u>transported bound to binding proteins</u>.
- Includes thyroid and steroid-based hormones.
- More than 99% of the hormone is bound to proteins. Less than 1% is free.

Thank You