

Ph D Course: Hormones & Antioxidants

Syllabus

1-Hormones

1.1- Type of Hormones classifications

1.2- Effects of hormones: mechanisms of hormone action on target tissue

1.3- Common classes of membrane bound receptors are:

1.3.1- Receptors that activate G-proteins

1.3.2- Receptors that activate protein kinase

1.4- The second messengers

1.5- Types of Hormone Receptors

1.6- The Hormone Cascade System

1.7- Hypothalamus-endocrine control

1.7.1- Antidiuretic Hormone

1.7.2- Oxytocin Hormone

1.7.3- Thyroid hormone

1.7.4- Parathyroid hormone

1.7.5- Adrenal hormones

1.7.6- Pancreatic hormones

1.8- Feedback Control of Hormone Production

2- Reactive oxygen species (ROS)

1. The definition of ROS

2. The formation of ROS

2.1. Reactive oxygen species-mechanism

2.1.1. Superoxide anion

2.1.2. Hydroxyl radical

2.1.3. Hydrogen peroxide

2.1.4. Singlet oxygen

2.1.5. Peroxyl and alkoxy radicals

2.2. Reactive nitrogen species (RNS)

2.2.1. Nitric oxide and nitric dioxide

2.2.2. Peroxynitrite

3- Role of Lipid Peroxidation

4- Antioxidant Defense systems

4.1- Endogenous antioxidant system

4.1.1- Superoxide dismutase

4.1.2- Catalase

4.1.3- The Glutathione Reductase

4.1.4- Glutathione S- Transferase

4.1.5- Creatine Kinase

4.1.6- Glutathione

4.1.7- Ceurloplasmin

4.2- Exogenous Antioxidant System

4.2.1- Vitamin E

4.2.2- Vitamin C

4.2.3- Carotenoids

4.2.4- other exogenous antioxidants