

## Endocrine System

### I. Introduction

#### A. General definitions

System, circulating chemical signals

Endocrine glands

Hormones

#### B. Signal recognition

Peptide hormones

Extracellular receptors, 2<sup>nd</sup> messenger systems

Steroid hormones

Intracellular receptors

#### C. Hormonal control

Negative feedback

Positive feedback

### II. Survey of Major Vertebrate Endocrine Glands

#### A. Hypothalamus and pituitary gland

Posterior pituitary – hormone produced in hypothalamus, transported to post. pituitary

Antidiuretic hormone (ADH)

Oxytocin

Anterior pituitary – hypothalamus produces stimulating or inhibiting hormones to control production of anterior pituitary hormones

Adrenocorticotrophic hormone (ACTH)

Thyroid stimulating hormone (TSH)

Follicle stimulating hormone (FSH)

Luteinizing hormone (LH)

Prolactin (PRL)

Growth hormone (GH)

Gigantism

Dwarfism

Acromegaly

#### B. Thyroid and parathyroid glands

Thyroid gland

Thyroxine and triiodothyronine (T<sub>4</sub> and T<sub>3</sub>)

Parathyroid glands

Parathyroid hormone

Calcitonin

BIO 102 General Biology

Lecture Outline

C. Adrenal glands

Adrenal cortex

Cortisol

Aldosterone

Adrenal medulla

Epinephrine & norepinephrine

D. Gonads

Testes

Testosterone

Ovaries

Estrogen, progesterone

E. Pancreas

Insulin

Diabetes

Glucagon

Pancreatic hormone balance

F. Thymus

Thymosin