

**Table 1 Endocrine Glands, Hormones, and Their Functions and Structure Chemical Gland/Tissue Hypothalamus**

1. **Hormones** Thyrotropin-releasing hormone (TRH)

**Major Functions** Stimulates secretion of TSH and prolactin **Chemical Structure**  
Peptide

2. **Hormones** Corticotropin-releasing hormone (CRH)

**Major Functions** Causes release of ACTH

**Chemical Structure** Peptide

3. **Hormones** Growth hormone–releasing hormone (GHRH)

**Major Functions** Causes release of growth hormone

**Chemical Structure** Peptide

4. **Hormones** Growth hormone inhibitory hormone (GHIH) (somatostatin)

**Major Functions** Inhibits release of growth hormone

**Chemical Structure** Peptide

5. **Hormones** Gonadotropin-releasing hormone (GnRH)

**Major Functions** Causes release of LH and FSH

6. **Hormones** Dopamine or prolactin-inhibiting factor (PIF)

**Major Functions** Inhibits release of prolactin

**Chemical Structure** Amien

**Gland/Tissue Anterior pituitary****1. Hormones** Growth hormone

**Major Functions** Stimulates protein synthesis and overall growth of most cells and tissues

**Chemical Structure** Peptide

**2. Hormones** Thyroid-stimulating hormone (TSH)

**Major Functions** Stimulates synthesis and secretion of thyroid **Chemical Structure**  
Peptide

**3. Hormones** Adrenocorticotrophic hormone (ACTH)

**Major Functions** Stimulates synthesis and secretion of adrenocortical hormones (cortisol, androgens, and aldosterone)

**Chemical Structure** Peptide

**4. Hormones** Prolactin

**Major Functions** Promotes development of the female breasts and secretion of milk

**Chemical Structure** Peptide

**5. Hormones** Follicle-stimulating hormone (FSH)

**Major Functions** Causes growth of follicles in the ovaries and sperm maturation in Sertoli cells of testes

**Chemical Structure** Peptide

**6. Hormones** Luteinizing hormone (LH)

**Major Functions** Stimulates testosterone synthesis in Leydig cells of testes; stimulates ovulation, formation of corpus luteum, and estrogen and progesterone synthesis in ovaries

**Chemical Structure** Peptide

### Gland/Tissue Posterior pituitary

**1. Hormones** Antidiuretic hormone (ADH) (also called vasopressin) **Major Functions**

Increases water reabsorption by the kidneys and causes vasoconstriction and increased blood Pressure

**Chemical Structure** Peptide

**2. Hormones** Oxytocin

**Major Functions** Stimulates milk ejection from breasts and uterine contractions

**Chemical Structure** Peptide

### Gland/Tissue Thyroid

**1. Hormones** Thyroxine (T4) and triiodothyronine (T3)

**Major Functions** Increases the rates of chemical reactions in most cells, thus increasing body metabolic rate

**Chemical Structure** Amine

**2. Hormones** Calcitonin

**Major Functions** Promotes deposition of calcium in the bones and decreases extracellular fluid calcium ion concentration

**Chemical Structure** Peptide

**Gland/Tissue Adrenal cortex****1. Hormones Cortisol**

**Major Functions** Has multiple metabolic functions for controlling metabolism of proteins, carbohydrates, and fats; also has anti-inflammatory effects

**Chemical Structure** Steroid

**2. Hormones Aldosterone**

**Major Functions** Increases renal sodium reabsorption, potassium secretion, and hydrogen ion secretion

**Chemical Structure** Steroid

**Gland/Tissue Adrenal medulla****1. Hormones Norepinephrine, epinephrine**

**Major Functions** Same effects as sympathetic stimulation

**Chemical Structure** Amine

**Gland/Tissue Pancreas****1. Hormones Insulin ( $\beta$  cells)**

**Major Functions** Promotes glucose entry in many cells, and in this way controls carbohydrate metabolism

**Chemical Structure** Peptide

**2. Hormones Glucagon ( $\alpha$  cells)**

**Major Functions** Increases synthesis and release of glucose from the liver into the body fluids

**Chemical Structure** Peptide

**Gland/Tissue Parathyroid**

**1. Hormones** Parathyroid hormone (PTH)

**Major Functions** Controls serum calcium ion concentration by increasing calcium absorption by the gut and kidneys and releasing calcium from bones

**Chemical Structure** Peptide

**Gland/Tissue Testes**

**1. Hormones** Testosterone

**Major Functions** Promotes development of male reproductive system and male secondary sexual characteristics

**Chemical Structure** Steroid

**Gland/Tissue Ovaries**

**1. Hormones** Estrogens

**Major Functions** Promotes growth and development of female reproductive system, female breasts, and female secondary sexual characteristics

**Chemical Structure** Steroid

**2. Hormones** Progesterone

**Major Functions** Stimulates secretion of “uterine milk” by the uterine endometrial glands and promotes development of secretory apparatus of breasts

**Chemical Structure** Steroid

### Gland/Tissue Placenta

#### 1. **Hormones** Human chorionic gonadotropin (HCG)

**Major Functions** Promotes growth of corpus luteum and secretion of estrogens and progesterone by corpus luteum

**Chemical Structure** Peptide

#### 2. **Hormones** Human somatomammotropin

**Major Functions** Probably helps promote development of some fetal tissues as well as the mother's breasts

**Chemical Structure** Peptide

#### 3. **Hormones** Estrogens

**Major Functions** See actions of estrogens from ovaries

**Chemical Structure** Steroid

#### 4. **Hormones** Progesterone

**Major Functions** See actions of progesterone from ovaries

**Chemical Structure** Steroid

### Gland/Tissue Kidney

#### 1. **Hormones** Renin

**Major Functions** Catalyzes conversion of angiotensinogen to angiotensin I (acts as an enzyme)

**Chemical Structure Peptide****2. Hormones 1,25-Dihydroxycholecalciferol****Major Functions** Increases intestinal absorption of calcium and bone mineralization**Chemical Structure Steroid****3. Hormones Erythropoietin****Major Functions** Increases erythrocyte production**Chemical Structure Peptide****Gland/Tissue Heart****1. Hormones Atrial natriuretic peptide (ANP)****Major Functions** Increases sodium excretion by kidneys, reduces blood pressure**Chemical Structure Peptide****Gland/Tissue Stomach****1. Hormones Gastrin****Major Functions** Stimulates HCl secretion by parietal cells **Chemical Structure**

Peptide

**Gland/Tissue Small intestine****1. Hormones Secretin****Major Functions** Stimulates pancreatic acinar cells to release bicarbonate and water

**Chemical Structure** Peptide

**2. Hormones** Cholecystokinin (CCK)

**Major Functions** Stimulates gallbladder contraction and release of pancreatic enzymes

**Chemical Structure** Peptide

**Gland/Tissue Adipocytes**

**1. Hormones** Leptin

**Major Functions** Inhibits appetite, stimulates thermogenesis **Chemical Structure**  
Peptide