

## **ENDOCRINE SYSTEM LAB**

### **ENDOCRINE PRE-LAB**

Before coming to class, answer the following questions on a separate sheet of paper.

1. Contrast the functions of endocrine and exocrine glands.
2. Contrast the actions of hormones and neurotransmitters.
3. Describe the sequence of events by which hormones work. Use the terms: hormone, receptor, secreted, bloodstream, target cell, gland. Do not write more than two sentences.
4. Describe the relationship between the pituitary gland and the hypothalamus.

### **ENDOCRINE LAB**

On a separate sheet of paper, answer the following questions.

1. List the five major anterior pituitary hormones. Next to each one, write its function.
2. Describe the structure of the hypophyseal portal system.
3. Name the hypothalamic releasing or inhibiting hormones that control the hormones you wrote about in question #1 above.
4. Describe how hypothalamic hormones are made and sent to the anterior pituitary.
5. What is meant by the term "portal system"? Name another location in the body where a portal system is used.
6. List the posterior pituitary hormones. Next to each one, write its function
7. Where are the posterior pituitary hormones formed? What is the relationship between the posterior pituitary and the hypothalamus and how does it differ from that of the anterior pituitary?
8. Describe the mechanisms by which polar and nonpolar hormones act at the cell membrane and interior of the target cell.
9. List and describe the endocrine functions (hormone secreted and action of hormone) of the following glands: thymus, pineal gland, thyroid and parathyroid glands, adrenal cortex, adrenal medulla, pancreas, ovaries and testes.
10. Explain the functions of the following hormones and the structures that secrete them: erythropoietin, calcitriol, hCG, atrial natriuretic peptide, leptin, gastrin, cholecystokinin (CCK), secretin.
11. Why is the injection of erythropoietin by professional athletes considered doping? What would be a natural way to stimulate the secretion of this hormone by the body?
12. A female patient was found to have remarkably high testosterone and under-developed reproductive organs. What is a likely explanation for this phenomenon?