

Lab 4: endocrine system physiology



**ASSIGN
BUSTER**

Lab 4: Endocrine System Physiology | 1. | | Refer to Activity 1: Determining Baseline Metabolic Rates. How did the baseline metabolic rates of the three rats differ? Answer: | The metabolic rates for the thyroidectomized and hypophysectomized rats were lower than that of the normal rat. | | | 2. | | Why did the metabolic rates differ? Check all that apply: Answers: | The hypophysectomized rat lacked thyroid-stimulating hormone. The thyroidectomized rat lacked thyroxine hormone. | | | 3. | | Refer to Activity 2: Determining the Effect of Thyroxine on Metabolic Rate. How did the thyroxine affect the normal rat's metabolic rate? Answer: | It caused the rate to increase. | | | 4. | | What was the effect of thyroxine on the thyroidectomized rat's metabolic rate? Answer: | Thyroxine increased the metabolic rate. | | | 5. | | What was the effect of thyroxine on the hypophysectomized rat? Answer: | Thyroxine increased the metabolic rate. | | | 6. | | Refer to Activity 3: Determining the Effect of TSH on Metabolic Rate. What is the effect of TSH on the normal rat's metabolic rate? Answer: | TSH increased the metabolic rate. | | | 7. | | How did the metabolic rate of the thyroidectomized rat injected with TSH compare to its baseline metabolic rate? Answer: | It was the same as the baseline rate. | | | 8. | | What was the oxygen consumption per hour for the hypophysectomized rat injected with TSH? Answer: | 1738.8 ml/O₂/kg/hr | | | 9. | | Refer to Activity 4: Determining the Effect of Propylthiouracil on Metabolic Rate. What effect did an injection of propylthiouracil have on the metabolic rate of the normal rat? Answer: | The metabolic rate decreased from 1704 ml/O₂/kg/hr to 1536 ml/O₂/kg/hr. | | | 10. | | What was the effect of the propylthiouracil on the thyroidectomized rat? Answer: | There was no effect. | | | 11. | | Refer to Activity 5: Hormone Replacement Therapy. How does the uterus weight of

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the rat that received estrogen differ from the uterus weight of the rat that received saline? Answer: | The uterus belonging to the rat that received estrogen is heavier than the uterus belonging to the rat that received saline.

||| 12. || Which of the following best describes the effects of estrogen injections into the rat? Answer: | The estrogen made the rat uterus more

active in follicle development. ||| 13. || If testosterone had been

administered instead, how would the uteruses have been affected? Answer: |

The uteruses would not have been affected. ||| 14. || Refer to Activity 6:

Obtaining a Glucose Standard Curve. What is the glucose reading for the

control rat? Answer: | 87 mg/dl glucose ||| 15. || What is the glucose level

for the experimental rat prior to receiving insulin? Answer: | 129 mg/dl

glucose ||| 16. || What is the glucose level of the experimental rat after it

has been injected with insulin? Answer: | 97 mg/dl glucose ||| 17. || What is

the condition that the injection of alloxan caused in the experimental rat?

Answer: | Diabetes mellitus type I ||| 18. || What is the effect of

administering insulin to the control animal? Check all that apply. Answer: | It

had no effect. ||| 19. || What was the effect of administering insulin to the

experimental animal? Answer: | It caused the glucose levels in the blood to

decrease. ||| 20. || Insulin is secreted from which cells in the pancreas?

Answer: | Beta cells |||