







Skill Lab Assessment

cholesterol is typically:
a) Below 100 mg/dL
b) Between 100-150 mg/dL
c) Between 150-200 mg/dL
d) Above 200 mg/dL
e) Between 250-300mg/dl
2- Which lipoprotein is
responsible for transporting cholesterol from peripheral tissues to the liver?
a) HDL
b) LDL
c) VLDL
c) VLDL d) Chylomicrons

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3. Which lipoprotein is considered the major carrier of cholesterol in the blood?
a) HDL
b) LDL
c) VLDL
d) Chylomicrons
e) None of the above
4. Which of the following is a risk factor for increased cholesterol synthesis?
a) Hypothyroidism
b) Diabetes mellitus
c) Chronic kidney disease
d) Cushing's syndrome
e) Hyperthyroidism

Skill Lab Assessment Which apolipoprotein is essential for the activation of lipoprotein lipase? A. ApoA-I B. ApoC-II C. ApoB-100 D. ApoE E. ApoD

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5. Cholesterol is classified as a type of:

a) Carbohydrate

b) Protein

c) Lipid

d) Nucleic acid

e) Mineral 6.

The rate-limiting enzyme in cholesterol biosynthesis is: A. Acetyl-CoA carboxylase B. Citrate Iyase C. HMG-CoA reductase D. Carnitine acyltransferase I E. Squalene synthase

A. It is synthesized in the liver A. It is synthesized in the liver only B. It transports cholesterol to peripheral tissues C. It facilitates reverse cholesterol transport to the liver D. It contains ApoB-100 E. It is degraded in the intestine

Which of the following statements regarding HDL is TRUE?

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- 9. Familial hypercholesterolemia is commonly caused by mutations affecting:
 - A. ApoC-II

 - B. LDL receptor C. LCAT enzyme D. VLDL assembly E. HDL synthesis
- 10. The major site of de novo cholesterol synthesis in the human body is the: A. Intestine

 - B. Liver
 - C. Kidney
 - D. Pancreas
 - E. Skeletal muscle

Learning Objectives

At the end of this session students will be able to :

1. Detect the presence of unsaturated sterols in the given solution using Salkowski's and Liebermann Burchard's Test.

SALKOWSKI'S TEST

Sulphuric Acid Test

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Core Knowledge

Principle

- Non specific test for cholesterol
- Group test for all unsaturated sterols
- Method for separation of free cholesterol from cholesterol esters.
- Cholesterol is dehydrated by Sulphuric Acid to form 3,5 Cholestadien or 2,4 Cholestadien. These cholestadiens combine to form Bi-cholestadien or Tri-cholestadien. The Bicholestadien react further with sulphuric acid to form **bicholestadien disulphonate**, which turns from Blue to Red in Salkowski's test.

Core Knowledge

Procedure

• Reagents:

- a. Cholesterol in chloroform solution
- b. Concentrated Sulphuric Acid

Method:

- 1. Take 1 ml Cholesterol Solution
- 2. Add 2ml Conc. Sulphuric Acid (Slowly, along the side wall of test tube)
- 3. Allow to stand for a while.
- 4. Observe the Color Changes.

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LIEBERMANN BURCHARD'S TEST

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Core Knowledge

Procedure

Reagents:

- a. Cholesterol in chloroform solution
- b. Concentrated Sulphuric Acid

c. Acetic Anhydride• Method:

- 1. Take 1 ml Cholesterol Solution in a test tube.
- 2. Add 10 drops of Acetic Anhydride and 3 drops of Conc. Sulphuric Acid
- 3. Observe the Color Changes.

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Learning Resources

• Journal of Practical Vol-1

Google images

Thank You!

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