MAYO CLINIC LABORATORIES

Test Definition: TGLBF

Triglycerides, Body Fluid

Overview

Useful For

Distinguishing between chylous and nonchylous effusions

Measurement of triglycerides in body fluids as a surrogate for chylomicrons

Method Name

Colorimetry

NY State Available

No

Specimen

Specimen Type

Body Fluid

Ordering Guidance

For help distinguishing between chylous and nonchylous effusions, order BFLA1 / Lipid Analysis, Body Fluid. The body fluid will be tested for cholesterol and triglyceride concentrations and undergo lipoprotein electrophoresis.

Necessary Information

1. Date and time of collection is required.

2. Specimen source is required.

Specimen Required

Specimen Type: Body fluid

Preferred Source:

-Peritoneal fluid (peritoneal, abdominal, ascites, paracentesis)

-Pleural fluid (pleural, chest, thoracentesis)

-Drain fluid (drainage, Jackson Pratt [JP] drain)

-Pericardial Fluid

Acceptable Source: Write in source name with source location (if appropriate)

Collection Container/Tube: Sterile container

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions:

1. Centrifuge to remove any cellular material and transfer into a plastic vial.
2. Indicate the specimen source and source location on label.

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	OK
Gross icterus	Reject
Anticoagulant or additive, amniotic fluid, breast milk, saliva, sputum, synovial fluid, bronchoalveolar lavage (BAL) or bronchial washings, colostomy, ostomy, feces, cerebrospinal fluid, gastric secretions, nasal secretions, urine, vitreous	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Body Fluid	Frozen (preferred)	30 days	
	Ambient	24 hours	
	Refrigerated	7 days	

Clinical & Interpretive

Clinical Information

Triglyceride concentration in body fluids is correlated to the presence of chylomicrons and can be useful when diagnosing chylous effusion or differentiating from pseudochylous effusion.(1) Chylous effusions are characterized by the presence of chyle which contains chylomicrons circulating through the lymphatic system. Pseudochylous effusions do not have chylomicrons. These fluids have a milky appearance and can be confused with chylous effusions. While chylous effusions often have elevated triglyceride concentrations and decreased cholesterol concentrations, identification of chylomicrons is considered the gold standard for the diagnosis.

Pleural fluid:
Chylothorax is the name given to pleural effusions containing chylomicrons. They develop when chyle accumulates from disruption of the lymphatic system, often the thoracic duct, caused mainly by malignancy or trauma.(1) Lymph contains chylomicron rich chyle characterized by high concentrations of triglycerides. Pseudochylous effusions are the name given to milky appearing effusions that do not contain lymphatic contents but rather form gradually through the breakdown of cellular lipids in long-standing effusions such as rheumatoid pleuritis, tuberculosis, or myxedema and by definition the effluent contains high concentrations of cholesterol.(2) Differentiation of pseudochylothorax from chylothorax is important as their milky or opalescent appearance is similar, however therapeutic management strategies differ.

Peritoneal fluid:
Chylous ascites is the name given to peritoneal effusions containing chylomicrons. Obstruction of lymph flow causing leakage from dilated subserosal lymphatics, exudation through the walls of retroperitoneal megalymphatics, and direct leakage of chyle due to a lymphoperitoneal fistula have been proposed as possible mechanisms causing chylous ascites.(3) Elevated triglyceride concentrations have the best correlation with detection of chylomicrons, while cholesterol is not useful at predicting the presence or absence of chylomicrons.

Reference Values

An interpretive report will be provided.

Interpretation

Pleural fluid triglyceride concentrations over 110 mg/dL are consistent with a chylous effusion. Triglyceride concentrations below 50 mg/dL are usually not due to chylous effusions.(1)

Peritoneal fluid triglyceride concentrations over 187 mg/dL are most consistent with chylous effusion.(3)

Cautions

Dicynone (Etamsylate) at therapeutic concentrations may lead to false-low results.

Acetaminophen intoxications are frequently treated with N-acetylcysteine.

N-acetylcysteine at a plasma concentration above 166 mg/L and the acetaminophen metabolite, N-acetyl-p-benzoquinone imine may independently cause falsely low results.

In very rare cases, gammopathy, in particular type IgM (Waldenstrom macroglobulinemia), may cause unreliable results.

Clinical Reference

1. Hooper C, Lee YC, Maskell N; BTS Pleural Guideline Group: Investigation of a unilateral pleural effusion in adults: British Thoracic Society Pleural Disease Guideline 2010. Thorax. 2010;65(Suppl2):ii4-17. doi:10.1136/thx.2010.136978
2. Staats BA, Ellefson RD, Budahn LL, et al. The lipoprotein profile of chylous and nonchylous pleural effusions. Mayo Clin Proc. 1980;55(11):700-704
3. Thaler MA, Bietenbeck A, Schulz C, Luppa PB. Establishment of triglyceride cut-off values to detect chylous ascites and pleural effusions. Clin Biochem. 2017;50(3):134-138. doi:10.1016/j.clinbiochem.2016.10.008
4. McGrath EE, Blades Z, Anderson PB. Chylothorax: aetiology, diagnosis, and therapeutic options. Respir Med. 2010;104(1):1-8. doi:10.1016/j.rmed.2009.08.010

Performance

Method Description
Samples analyzed for triglycerides are measured by an automated enzymatic method. The chemistry includes hydrolysis of the triglycerides and phosphorylation of the resulting glycerol.(Package insert: Roche Triglycerides Reagent. Roche Diagnostics Corp; v7.0, 07/2017)

PDF Report
No

Day(s) Performed
Monday through Saturday

Report Available
Same day/1 to 2 days

Specimen Retention Time
7 days

Performing Laboratory Location
Mayo Clinic Jacksonville Clinical Lab

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information
84478

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
TGLBF	Triglycerides, BF	12228-3

Result ID	Test Result Name	Result LOINC® Value

BFTGL	Triglycerides (BF)	12228-3
FLD25	Fluid Type:	14725-6