

## Overview

### Useful For

Determining whether pancreatic inflammation or pancreatic fistula may be contributing to a pathological accumulation of fluid

### Method Name

Enzymatic Colorimetric Reaction

### NY State Available

Yes

## Specimen

### Specimen Type

Body Fluid

### Necessary Information

1. Date and time of collection are required.
2. Specimen source is required.

### Specimen Required

**Specimen Type:** Body fluid

**Preferred Sources:**

- Peritoneal fluid (peritoneal, abdominal, ascites, paracentesis)
- Pleural fluid (pleural, chest, thoracentesis)
- Drain fluid (drainage, Jackson Pratt [JP] drain)
- Pericardial

**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 | Reject |
|-------|--------|

|   |        |
|---|--------|
| hemolysis   |        |
| Gross lipemia   | Reject |
| Gross icterus   | Reject |
| Cerebrospinal fluid, feces, breast milk, saliva, nasal secretions, gastric secretions, bronchoalveolar lavage (BAL) or bronchial washings, sputum, synovial, colostomy/ostomy, urine, or vitreous fluid | Reject |

## Specimen Stability Information

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

## Clinical & Interpretive

### Clinical Information

Lipases are enzymes that hydrolyze glycerol esters of long-chain fatty acids and produce fatty acids and 2-acylglycerol. The pancreas is the primary source of serum lipase. Pancreatic injury results in increased serum lipase levels. Serum lipase is measured to aid in the diagnosis of pancreatitis.

#### Peritoneal fluid:

The digestive enzymes amylase and lipase can be measured in the identification of pancreatic fluid in the peritoneal cavity. Concentrations are expected to be elevated and at least several-fold times higher in fluid of pancreatic origin compared to simultaneous concentrations in serum.(1,2)

#### Drain fluid:

Lipase is expected to be elevated in drain fluids formed due to chronic pancreatitis or formation of a fistula following surgery.(1,3,4) Comparison to serum concentrations is recommended with elevations several-fold higher than blood being suggestive of the presence of pancreatic fluid in the drained cavity.(5)

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**Reference Values**

An interpretive report will be provided.

**Interpretation**

Fluids (peritoneal, drain):

Lipase concentrations several-fold higher than serum lipase concentrations is suggestive of the presence of pancreatic fluid in the drained cavity.

All other fluids:

Body fluid lipase activity may become elevated due to the presence of pancreatic fluid in the drained cavity. Results should be interpreted in conjunction with serum lipase and other clinical findings.

**Cautions**

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

Calcium dobesilate causes artificially low lipase results.

**Clinical Reference**

1. Block DR, Florkowski CM. Body Fluids. In: Rifai N, Horvath AR, Wittwer CT. eds. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier;2018:chap 43
2. Robert JH, Meyer P, Rohner A. Can serum and peritoneal amylase and lipase determinations help in the early prognosis of acute pancreatitis? *Ann Surg.* 1986;203(2):163-168. doi:10.1097/0000658-198602000-00009
3. Lipsett PA, Cameron JL. Internal pancreatic fistula. *Am J Surg.* 1992;163(2):216-220. doi:10.1016/0002-9610(92)90104-y
4. Kaman L, Behera A, Singh R, Katariya RN. Internal pancreatic fistulas with pancreatic ascites and pancreatic pleural effusions: recognition and management. *ANZ J Surg.* 200;71(4):221-225. doi:10.1046/j.1440-1622.2001.02077.x
5. Sileo AV, Chawla SK, LoPresti PA: Pancreatic ascites: Diagnostic importance of ascitic lipase. *Am J Dig Dis.* 1975 Dec;20(12):1110-1114. doi:10.1007/BF01070753
6. Nandakumar V, Dolan C, Baumann NA, et al. Effect of pH on the quantification of body fluid analytes for clinical diagnostic testing. *Am J Clin Path.* 2019; 152(1):S10-S11

**Performance****Method Description**

The chromogenic lipase substrate 1,2-O-dilauryl-rac-glycero-3-glutaric acid-(6-methylresorufin) ester is cleaved by the catalytic action of alkaline lipase solution to form 1,2-O-dilauryl-rac-glycerol and an unstable intermediate, glutaric acid-(6-methylresorufin) ester.

This decomposes spontaneously in alkaline solution to form glutaric acid and methylresorufin. Addition of detergent and colipase increases the specificity of the assay for pancreatic lipase. (Package insert: Roche Lipase reagent. Roche Diagnostics; V 3.0, 03/2022)

**PDF Report**

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No

**Day(s) Performed**

Monday through Sunday

**Report Available**

Same day/1 to 2 days

**Specimen Retention Time**

7 days

**Performing Laboratory Location**

Mayo Clinic Laboratories - Rochester Main Campus

**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**

83690

**LOINC® Information**

| Test ID | Test Order Name | Order LOINC® Value |
|---------|-----------------|--------------------|
| LPSBF   | Lipase, BF      | 15212-4            |

| Result ID | Test Result Name   | Result LOINC® Value |
|-----------|--------------------|---------------------|
| LPBF      | Lipase, BF         | 15212-4             |
| FLD7      | Fluid Type, Lipase | 14725-6             |