

Overview**Useful For**

When used in conjunction with imaging studies, cytology, and other pancreatic cyst fluid tumor markers:

- Distinguishing between mucinous and nonmucinous pancreatic cysts
- Determining the likely type of malignant pancreatic cyst

Method Name

ImmunoenzymaticAssay

NY State Available

Yes

Specimen**Specimen Type**

Pancreatic Cyst Fluid

Advisory Information

This test should not be ordered for pancreatic fluid of noncyst origin (eg, pancreatic duct fluid; peripancreatic fluid) since reference values have not been established for this specimen type. Call 800-533-1710 for ordering assistance.

Specimen Required

Container/Tube: Plain, plastic, screw-top tube

Specimen Volume: 1mL

Forms

[If not ordering electronically, complete, print, and send an Oncology Test Request \(T729\)](#) with the specimen.

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	OK
Hemolysis >5000 mg/dL	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Pancreatic Cyst Fluid	Frozen (preferred)	90 days	
	Refrigerated	72 hours	

Clinical and Interpretive

Clinical Information

Cystic lesions of the pancreas are of various types including:

-Benign cysts:

Â - Inflammatory cysts (pseudocysts)

Â - Serous cysts (serous cystadenoma)

-Mucinous cysts:

Â - Premalignant (mucinous cystadenoma)

Â - Malignant (cystadenocarcinoma, intrapapillary mucinous neoplasia)

The diagnosis of pancreatic cyst type is often difficult and may require correlating imaging studies with results of cytologic examination and tumor marker testing performed on cyst aspirates. Various tumor markers have been evaluated to distinguish nonmucinous, nonmalignant pancreatic cysts from mucinous cysts, which have a high likelihood of malignancy. Carcinoembryonic antigen (CEA) has been found to be the most reliable tumor marker for identifying those pancreatic cysts that are likely mucinous. In cyst aspirates, CEA concentrations of 200 ng/mL and above are highly suspicious for mucinous cysts. The greater the CEA concentration, the greater the likelihood that the mucinous cyst is malignant. However, CEA testing does not reliably distinguish between benign, premalignant, or malignant mucinous cysts. CEA test results should be correlated with the results of imaging studies, cytology, other cyst fluid tumor markers (ie, amylase and CA 19-9), and clinical findings for diagnosis.

Reference Values

An interpretive report will be provided.

Interpretation

A pancreatic cyst fluid carcinoembryonic antigen (CEA) concentration of 200 ng/mL and higher is very suggestive for a mucinous cyst but is not diagnostic. The sensitivity and specificity for mucinous lesions are approximately 62% and 93%, respectively, at this concentration. Cyst fluid CEA concentrations of 5 ng/mL and below indicate a low risk for a mucinous cyst, and are more consistent with serous cystadenoma, fluid collections complicating pancreatitis, cystic neuroendocrine tumor, or metastatic lesions. CEA values between these extremes have limited diagnostic value.

Cautions

These test results should not be the sole basis for diagnosis. Test results should be always correlated with imaging and cytology.

This test does not distinguish between malignant and nonmalignant mucinous cysts.

Clinical Reference

1. Brugge WR, Lewandrowski K, Lee-Lewandrowski E, et al: Diagnosis of pancreatic cystic neoplasms: a report of cooperative pancreatic cyst study. *Gastroenterology* 2004 May;126:1330-1336
2. Snozek CL, Jenkins SM, Bryant SC, et al: Analysis of CEA, CA 19-9, and amylase in pancreatic cyst fluid for diagnosis of pancreatic lesions. *Clin Chem* 2008;54(Suppl S):A126-127

3. Khalid A, Brugge W: ACG practice guidelines for the diagnosis and management of neoplastic pancreatic cysts. Am J Gastroenterol 2007 Oct;102(10):2339-2349
4. Elta GH, Enestvedt BK, Sauer BG, Lennon AM: ACG Clinical Guideline: Diagnosis and Management of Pancreatic Cysts. Am J Gastroenterol. 2018 Apr;113(4):464-479. doi: 10.1038/ajg.2018.14

Performance

Method Description

[The instrument used is Beckman Coulter UniCel DXI 800. The Access carcinoembryonic antigen \(CEA\) assay is a 2-site immunoenzymatic sandwich assay using 2 mouse monoclonal anti-CEA antibodies \(Mab\) that react with different epitopes of CEA. A sample is added to a reaction vessel, along with the first anti-CEA Mab-alkaline phosphatase conjugate and the second anti-CEA Mab bound to paramagnetic particles. The incubation is followed by a magnetic separation and washing. The chemiluminescent substrate Lumi-Phos 530 is added to the vessel and light generated by the reaction is measured with a luminometer. The light production is proportional to the concentration of CEA in the sample. The amount of analyte in the sample is determined by means of a stored, multipoint calibrator curve.\(Package insert: Beckman Coulter, Inc., Fullerton, CA, 2019\)](#)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Friday; Varies

Analytic Time

Same day/1 day

Maximum Laboratory Time

3 days

Specimen Retention Time

12 months

Performing Laboratory Location

Rochester

Fees and 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 Regional Manager. 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 U.S. Food and Drug Administration.

CPT Code Information

82378

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
CEAPC	CEA, Pancreatic Cyst	12515-3

Result ID	Test Result Name	Result LOINC Value
CEAP	CEA, Pancreatic Cyst	12515-3
SITE6	Site	39111-0