MAYO CLINIC LABORATORIES

Test Definition: CEASF

Carcinoembryonic Antigen (CEA), Spinal Fluid

Overview

Useful For

Detecting meningeal carcinomatosis and intradural or extradural infiltration

Differentiating brain parenchymal metastasis from adenocarcinoma or squamous-cell carcinoma

Method Name

Immunoenzymatic Assay

NY State Available

Yes

Specimen

Specimen Type

CSF

Specimen Required

Collection Container/Tube: Sterile vial
Submission Container/Tube: 13 x 75-mm tube
Specimen Volume: 0.5 mL
Collection Instructions: Submit specimen from collection vial number 1.

Forms

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

Specimen Minimum Volume

0.4 mL

Reject Due To

No specimen should be rejected

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
CSF	Refrigerated (preferred)	14 days	
	Ambient	7 days	
	Frozen	90 days	

Clinical & Interpretive

Clinical Information

Carcinoembryonic antigen (CEA) normally is present in cerebrospinal fluid (CSF) in very low concentrations. Elevations in serum CEA can cause passive transfer to CSF. Tumors of the brain, especially metastatic tumors, can elevate CSF CEA.

Reference Values

<0.6 ng/mL
Tumor markers are not specific for malignancy, and values may vary by method.

Interpretation

Increased values are seen in approximately 60% of patients with meningeal carcinomatosis.

Cautions

Although the assay appears to be specific for adenocarcinoma and squamous cell carcinoma, increased carcinoembryonic antigen (CEA) values in cerebrospinal fluid (CSF) are not seen in all patients with such tumors of the brain.

Mildly elevated CEA values in CSF may be secondary to passive transfer from the serum in individuals with high serum CEA concentrations.

In rare cases, some individuals can develop antibodies to mouse or other animal antibodies (often referred to as human anti-mouse antibodies [HAMA] or heterophile antibodies), which may cause interference in some immunoassays. Caution should be used in interpretation of results, and the laboratory should be alerted if the result does not correlate with the clinical presentation.

Clinical Reference

1. Klee GG, Tallman RD, Goellner JR, Yanagihara T. Elevation of carcinoembryonic antigen in cerebrospinal fluid among patients with meningeal carcinomatosis. Mayo Clin Proc. 1986;61(1):9-13
2. Moertel CG, Fleming TR, Macdonald JS, Haller DG, Laurie JA, Tangen C. An evaluation of the carcinoembryonic antigen (CEA) test for monitoring patients with resected colon cancer. JAMA. 1993;270(8):943-947
3. Duffy MJ. Carcinoembryonic antigen as a marker for colorectal cancer: is it clinically useful?. Clin Chem. 2001 Apr;47(4):624-630
4. Block DR, Algeciras-Schimnich A. Body fluid analysis: clinical utility and applicability of published studies to guide interpretation of today's laboratory testing in serous fluids. Crit Rev Clin Lab Sci. 2013;50(4-5):107-124
5. Zhang Y, Ban R, Shi Q, Tian C. Baseline serum/cerebrospinal fluid ratio of carcinoembryonic antigen and carbohydrate antigen series biomarkers in non-neoplastic diseases: a cross-sectional study on 224 patients. Clin Biochem. 2019 Jan;63:135-138. doi:10.1016/j.clinbiochem.2018.11.003

Performance

Method Description

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: Access CEA, Beckman Coulter Inc; 2020)

PDF Report
No

Day(s) Performed
Monday through Saturday

Report Available
1 to 3 days

Specimen Retention Time
12 months

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Superior Drive

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
82378

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
CEASF	Carcinoembryonic Ag (CEA), CSF	2037-0

Result ID	Test Result Name	Result LOINC® Value
CEASF	Carcinoembryonic Ag (CEA), CSF	2037-0