Overview

Useful For
Aiding in the diagnosis of brain metastases of testicular cancer or extragonadal intracerebral germ cell tumors

Highlights
Measurement of human chorionic gonadotropin (hCG) is used as an adjunct in the diagnosis of central nervous system (CNS) metastases or recurrence of tumor in patients with germ cell tumors.

Quantitation of the hCG in cerebrospinal fluid (CSF) can be important in guiding treatment and monitoring response to treatment of these tumors.

Measurement of hCG in CSF should not be the only parameter used to determine the presence of CNS metastases in patients with germ cell tumors.

Method Name
Electrochemiluminescent Immunoassay

NY State Available
Yes

Specimen

Specimen Type
CSF

Specimen Required

Patient Preparation: For 12 hours before specimen collection, do not take multivitamins or dietary supplements containing biotin (vitamin B7), which is commonly found in hair, skin, and nail supplements and multivitamins.

Container/Tube: Sterile vial

Specimen Volume: 1 mL

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

Specimen Minimum Volume
0.75 mL

Reject Due To

| Hemolysis          | Reject |

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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<tbody>
<tr>
<td>CSF</td>
<td>Refrigerated (preferred)</td>
<td>28 days</td>
<td>No additional container required</td>
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**Clinical and Interpretive**

**Clinical Information**
Human chorionic gonadotropin (hCG) is synthesized during pregnancy by syncytiotrophoblast cells. hCG may also be produced by neoplastic cells of testicular tumors (seminomas or nonseminomas), ovarian germ cell tumors, gestational trophoblastic disease, choriocarcinoma and various nontrophoblastic tumors including breast, ovarian, pancreatic, cervical, gastric, and hepatic cancers.

Measurement of hCG is used as an adjunct in the diagnosis of germ cell tumors. The presence of hCG in cerebrospinal fluid (CSF) is suggestive of tumor presence. Pure germinomas are associated with low hCG concentrations in both serum and CSF. A subset of nongerminomatous germ cell tumors contains syncytiotrophoblastic giant cells. These tumors are associated with moderately increased hCG concentrations (<1,000 IU/L) in the serum and/or CSF, and the survival rate in patients suffering these tumors is worse than that of patients with pure germinomas. In contrast, choriocarcinomas, another subset of nongerminomatous germ cell tumors, are associated with very high hCG concentrations (>1,000 IU/L) in both serum and CSF. Quantification of the hCG in CSF can be important in guiding treatment and monitoring response to treatment of these tumors.

The combination of the specific antibodies used in the Roche Beta HCG immunoassay recognize the holo-hormone, "nicked" forms of hCG, the beta-core fragment, and the free beta-subunit.

**Reference Values**

<1.0 IU/L

**Interpretation**
Elevated levels of human chorionic gonadotropin in spinal fluid indicate the probable presence of central nervous system metastases or recurrence of tumor in patients with germ cell tumors, including patients with testicular cancer or choriocarcinoma.

**Cautions**
The use of multivitamins or dietary supplements containing biotin or vitamin B7 that are commonly found in hair, skin and nail supplements and multivitamins can interfere with this test.

Slight elevations of human chorionic gonadotropin (hCG) in cerebrospinal fluid (CSF) may occur in non-neoplastic diseases.

In pregnancy, elevations of hCG in CSF may be observed due to blood contamination during CSF collection.

Values obtained with different assay methods or kits may be different and cannot be used interchangeably.

Test results cannot be interpreted as absolute evidence for the presence or absence of malignant disease.

Measurement of hCG in CSF should not be relied upon exclusively to determine the presence of central nervous system metastases in patients with germ cell tumors.
Clinical Reference


Method Description
The Roche human chorionic gonadotropin (hCG) assay is a 2-site immunometric sandwich assay using electrochemiluminescence detection. Patient specimen, biotinylated monoclonal hCG-specific antibody, and monoclonal hCG-specific antibody labeled with a ruthenium react to form a complex. Streptavidin-coated microparticles act as the solid phase to which the complex becomes bound. Voltage is applied to the electrode inducing a chemiluminescent emission from the ruthenium, which is then measured against a calibration curve to determine the amount of hCG in the patient specimen. (Package insert: Roche cobas. Roche Diagnostics; V16.0. 07/2013)

PDF Report
No

Day(s) Performed
Monday through Saturday

Report Available
1 to 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 was developed and its performance characteristics 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
84702

**LOINC® Information**

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<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>BHSF</td>
<td>Chorionic Gonad Beta-Subunit QN,CSF</td>
<td>14041-8</td>
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<table>
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