Overview

Useful For
Evaluation of renal tubular damage
Monitoring exposure to cadmium and mercury

Method Name
Automated Chemiluminescent Immunometric Assay

NY State Available
Yes

Specimen

Specimen Type
Urine

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.

Supplies: Aliquot Tube, 5 mL (T465)

Container/Tube: Plastic, urine tube

Specimen Volume: 3 mL

Collection Instructions:

1. Patient should empty bladder.
2. Have patient drink at least 0.5 liters of water.
3. Within 1 hour, collect a random urine specimen.
4. Add 1 M sodium hydroxide (NaOH) as preservative to the collection. This preservative is intended to achieve a pH of between approximately 6 and 8.

Forms

If not ordering electronically, complete, print, and send a Renal Diagnostics Test Request (T830) with the specimen.

Specimen Minimum Volume
1 mL

Reject Due To

<table>
<thead>
<tr>
<th>Specimen with pH &lt;6</th>
<th>Reject</th>
</tr>
</thead>
</table>
Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>Frozen (preferred)</td>
<td>14 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refrigerated</td>
<td>48 hours</td>
<td></td>
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</tbody>
</table>

Clinical and Interpretive

Clinical Information

Beta-2 microglobulin is a low-molecular-weight protein that forms the light chain component of class I histocompatibility (HLA: human leukocyte antigen) antigens.

Increased urine levels are seen in proximal tubular renal damage due to a variety of causes, including cadmium, mercury, lithium, or aminoglycoside toxicity; pyelonephritis; and Balkan nephropathy, a chronic interstitial nephritis of unknown etiology.

Reference Values

< or =300 mcg/L

Interpretation

Increased excretion is consistent with renal tubular damage.

Beta-2 microglobulin excretion is increased 100 to 1000 times normal levels in cadmium-exposed workers.

Cautions

Degradation of beta-2 microglobulin occurs at pH <6.0.

Clinical Reference


Performance

Method Description

Testing is performed on the Immulite 2000. The Immulite 2000 Beta-2 Microglobulin assay is a solid phase, 2-site chemiluminescent enzyme-labeled immunometric assay. The solid-phase bead is coated with an affinity-purified murine monoclonal anti-beta-2 antibody. The serum sample and alkaline phosphatase conjugated affinity-purified goat polyclonal anti-beta-2 antibody are incubated to bind beta-2 microglobulin into an antibody sandwich complex.
The chemiluminescent substrate, a phosphate ester of adamantyl dioxetane, in the presence of alkaline phosphatase produces light proportional to the concentration of the beta-2 microglobulin in the sample.(Package insert: IMMULITE 2000 Beta-2 Microglobulin. Siemens Healthcare Diagnostics; 11/05/2012)

**PDF Report**

No

**Day(s) Performed**

Monday, Wednesday, Friday

**Report Available**

1 to 3 days

**Specimen Retention Time**

3 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 cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer’s instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

**CPT Code Information**

82232

**LOINC® Information**

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<thead>
<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>B2MU</td>
<td>Beta-2 Microglobulin, U</td>
<td>1953-9</td>
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</table>

<table>
<thead>
<tr>
<th>Result ID</th>
<th>Test Result Name</th>
<th>Result LOINC Value</th>
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