## 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

<table>
<thead>
<tr>
<th>Supplies:</th>
<th>Urine Tubes, 5 mL</th>
</tr>
</thead>
</table>

| 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 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

| Specimen with pH <6 | Reject |

### Specimen Stability Information
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 1,000 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. Immulite 2000 Beta-2 Microglobulin 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. (Product Information: IMMULITE 2000 Beta-2 Microglobulin, Siemens Healthcare Diagnostics, 2012-11-05)
PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Friday; 5 a.m.-3 p.m., Saturday; 6 a.m.-3 p.m.

Analytic Time
1 day

Maximum Laboratory Time
3 days

Specimen Retention Time
2 Weeks

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 U.S. 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

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