

Overview

Useful For

Prognosis assessment of multiple myeloma

Evaluation of renal tubular disorders

Testing Algorithm

See [Laboratory Screening Tests for Suspected Multiple Myeloma](#) in Special Instructions.

Special Instructions

- [Laboratory Screening Tests for Suspected Multiple Myeloma](#)

Method Name

Nephelometry

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 1 mL

Forms

If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:

-[General Request](#) (T239)

-[Renal Diagnostics Test Request](#) (T830)

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	28 days	
	Frozen	28 days	
	Ambient	14 days	

Clinical and Interpretive

Clinical Information

Beta-2-microglobulin (beta-2-M) is a small membrane protein (11,800 Dalton) associated with the heavy chains of class I major histocompatibility complex proteins and is, therefore, on the surface of all nucleated cells. The small size allows beta-2-M to pass through the glomerular membrane, but it is almost completely reabsorbed in the proximal tubules.

Serum beta-2-M levels are elevated in diseases associated with increased cell turnover. Levels are also elevated in several benign conditions such as chronic inflammation, liver disease, renal dysfunction, some acute viral infections, and a number of malignancies, especially hematologic malignancies associated with the B-lymphocyte lineage.

In multiple myeloma, beta-2-M is a powerful prognostic factor and values <4 mcg/mL are considered a good prognostic factor.

In renal tubular disease, serum levels are low and urine levels are high. Although urine beta-2-M has been used to assess tubular dysfunction, it is not stable in urine below pH 5.5.

See [Laboratory Screening Tests for Suspected Multiple Myeloma](#) in Special Instructions.

Reference Values

1.21-2.70 mcg/mL

Interpretation

Serum beta-2-microglobulin (beta-2-M) <4 mcg/mL is a good prognostic factor in patients with multiple myeloma. In a study of pretreatment serum beta-2-M levels in 100 patients with myeloma it was reported that the median survival of patients with values >4 mcg/mL was 12 months, whereas median survival for patients with values <4 mcg/mL was 43 months.

Cautions

No significant cautionary statements

Clinical Reference

1. Bataille R, Magub M, Grenier J, et al: Serum beta-2-microglobulin in multiple myeloma: Relation to presenting features and clinical status. *Eur J Cancer Clin Oncol* 1982;18:59-66
2. Garewal H, Durie BG, Kyle RA, et al: Serum beta-2-microglobulin in the initial staging and subsequent monitoring of monoclonal plasma cell disorders. *J Clin Oncol* 1984;2:51-57
3. Norfolk D, Child JA, Cooper EH, et al: Serum beta-2-microglobulin in myelomatosis: potential value in stratification

and monitoring. Br J Cancer 1980;42:510-550

4. Dolan MJ, Lucey DR, Hendrix CW, et al: Early markers of HIV infection and subclinical disease progression. Vaccine 1993;11:548-551

5. Karlsson FA, Wibell L, Evrin PE: Beta-2-microglobulin in clinical medicine. Scand J Clin Lab Invest 1986;154:27-37

6. Greipp PR, Katzmann JA, O'Fallon WM, Kyle RA: Value of beta-2-microglobulin level and plasma cell labeling indices as prognostic factors in patients with newly diagnosed myeloma. Blood 1988;72:219-223

Performance

Method Description

Concentrations of beta-2-microglobulin are determined by nephelometry. (Instruction manual: Siemens Nephelometer II Operations. Siemens, Inc., Newark, DE)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Friday; 3 p.m.

Analytic Time

Same day/1 day

Maximum Laboratory Time

2 days

Specimen Retention Time

14 days

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

Test ID	Test Order Name	Order LOINC Value
B2M	Beta-2-Microglobulin, S	1952-1

Result ID	Test Result Name	Result LOINC Value
B2M	Beta-2-Microglobulin, S	1952-1