

**Overview****Useful For**

Evaluation of central nervous system inflammation and B-cell proliferative diseases

**Method Name**

Nephelometry

**NY State Available**

Yes

**Specimen****Specimen Type**

CSF

**Specimen Required**

**Container/Tube:** Sterile vial

**Specimen Volume:** 1 mL

**Specimen Minimum Volume**

0.5 mL

**Reject Due To**

Gross hemolysis	OK
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**Specimen Stability Information**

Specimen Type	Temperature	Time	Special Container
CSF	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.

Increased BETA-2-M levels in the cerebrospinal fluid (CSF) have been shown to be of diagnostic use in non-Hodgkin lymphoma with central nervous system involvement. Elevated CSF:serum ratios seen in patients with aseptic

meningo-encephalitis suggest the possibility of neurologic processes including those associated with HIV infection and acute lymphoblastic leukemia. BETA-2-M measurement in multiple sclerosis seems to be of indeterminate usefulness.

### Reference Values

0.70-1.80 mcg/mL

### Interpretation

Elevations of cerebrospinal fluid beta-2-microglobulin levels may be seen in a number of diseases including malignancies, autoimmune disease, and neurological disorders.

### Cautions

No significant cautionary statements

### Clinical Reference

1. Koch T, Lichtenfeld K, Wiernik P: Detection of central nervous system metastasis with cerebrospinal fluid beta 2 microglobulin. *Cancer* 1983;52:101-104
2. Mavligit G, Stuckey S, Fernando B, et al: Diagnosis of leukemia or lymphoma in the central nervous system by beta 2 microglobulin determination. *N Engl J Med* 1980;303:718-722
3. Jeffrey G, Frampton C, Legge H, et al: Cerebrospinal fluid beta 2 microglobulin levels in meningeal involvement by malignancy. *Pathology* 1990;22:20-23
4. Us O, Lolli F, Baig S, Link H: Intrathecal synthesis of beta 2 microglobulin in multiple sclerosis and aseptic meningo-encephalitis. *Acta Neurol Scand* 1989;80(6):598-602
5. Elovaara I, Livanainen M, Poitainen E, et al: CSF and serum beta 2 microglobulin in HIV infection related to neurological dysfunction. *Acta Neurol Scand* 1989;79(2):81-87
6. Dolan MF, Lucey DR, Hendrix CW, et al: Early markers of HIV infection and subclinical disease progression. *Vaccine* 1993;11(5):548-551
7. Brew BJ, Bhalla RB, Fleisher M, et al: Cerebrospinal fluid beta 2 microglobulin in patients infected with human immunodeficiency virus. *Neurology* 1989;39(6):830-834
8. Musto P, Tomasi P, Cascavilla N, et al: Significance and limits of cerebrospinal fluid beta 2 microglobulin measurement in course of acute lymphoblastic leukemia. *Am J Hematol* 1988;28(4):213-218
9. Lucey DR, McGuire SA, Clerici M, et al: Comparison of spinal fluid beta 2-microglobulin levels with CD4 + T cell count, in vitro T helper cell function, and spinal fluid IgG parameters in 163 neurologically normal adults infected with the human immunodeficiency virus type I. *J Infect Dis* 1991;163:971
10. Bjerrum L, Bach F, Zeeberg I: Increased level of cerebrospinal fluid beta 2 microglobulin is related to neurologic impairment in multiple sclerosis. *Acta Neurol Scand* 1988;78:72-75

### Performance

### Method Description

Concentrations of beta-2-microglobulin in cerebrospinal fluid are determined by nephelometry. (Instruction manual: Siemens Nephelometer II Operations. Siemens Inc, Newark, DE 05/2005)

**PDF Report**

No

**Day(s) and Time(s) Test Performed**

Monday through Saturday; 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 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 U.S. Food and Drug Administration.

**CPT Code Information**

82232

**LOINC® Information**

Test ID	Test Order Name	Order LOINC Value
B2MC	Beta-2-Microglobulin, CSF	1951-3

Result ID	Test Result Name	Result LOINC Value
B2MC	Beta-2-Microglobulin, CSF	1951-3