MAYO CLINIC LABORATORIES

Test Definition: OLIG

Oligoclonal Banding, Serum and Spinal Fluid

Overview

Useful For

Diagnosis of multiple sclerosis; especially useful in patients with equivocal clinical presentation and radiological findings

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
OLIGS	Serum Bands	No	Yes
OLIGC	CSF Bands	No	Yes

Method Name

Isoelectric Focusing (IEF) with IgG Immunoblot Detection

NY State Available

Yes

Specimen

Specimen Type

CSF
Serum

Specimen Required

Both serum and spinal fluid are required. Spinal fluid must be obtained within 7 days of serum collection.

Specimen Type: Serum
Collection Container/Tube:
Preferred: Serum gel
Acceptable: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL
Collection Instructions:
1. Centrifuge and aliquot serum into a plastic vial within 2 hours of collection.
2. Label specimen as serum.

Specimen Type: Spinal fluid
Container/Tube: Sterile vial
Specimen Volume: 0.5 mL
Collection Instructions: Label specimen as spinal fluid.

Specimen Minimum Volume

Serum, Spinal Fluid: 0.4 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

The diagnosis of multiple sclerosis (MS) is dependent on clinical, radiological, and laboratory findings. The detection of increased intrathecal immunoglobulin synthesis is the basis for current diagnostic laboratory tests for MS. These tests include the measurement of kappa free light chains in cerebrospinal fluid (CSF) and CSF oligoclonal band (OCB) detection. Abnormal CSF OCB patterns have been reported in 70% to 80% of MS patients.

Increased intrathecal Ig synthesis may occur in other inflammatory CSF diseases and, therefore this assay is not specific for MS.

Reference Values

CSF Oligoclonal Bands Interpretation: <2 bands

Interpretation

When the oligoclonal band assay detects 2 or more unique IgG bands in the cerebrospinal fluid (CSF), the result is positive.

CSF is used in the diagnosis of multiple sclerosis (MS) by identifying increased intrathecal IgG synthesis qualitatively (oligoclonal bands). The presence of 2 or more unique CSF oligoclonal bands was reintroduced as one of the diagnostic criteria for MS in the 2017 revised McDonald criteria. These findings, however, are not specific for MS as CSF-specific IgG synthesis may also be found in patients with other neurologic diseases including infectious, inflammatory, cerebrovascular, and paraneoplastic disorders. Clinical correlation recommended.

Cautions

This test is not specific for multiple sclerosis.

Supportive Data

In a cohort of 1307 patients analyzed in 2018, where 159 had demyelinating disease, the Mayo Clinic oligoclonal banding test had a clinical sensitivity of 74% and clinical specificity of 89%, with a ROC AUC of 0.813 when 2 or more unique cerebrospinal fluid bands are used as a cutoff for positive.

Clinical Reference

1. Andersson M, Alvarez-Cermeno J, Bernardi G, et al: Cerebrospinal fluid in the diagnosis of multiple sclerosis: a consensus report. J Neurol Neurosurg Psychiatry. 1994 Aug;57(8):897-902
2. Fortini AS, Sanders EL, Weinshenker BG, Katzmann JA: Cerebrospinal fluid oligoclonal bands in the diagnosis of multiple sclerosis. Isoelectric focusing with the IgG immunoblotting compared with high resolution agarose gel electrophoresis and cerebrospinal fluid IgG index. Am J Clin Pathol. 2003 Nov:120(5):672-675
3. Thompson AJ, Banwell BL, Barkhof F, et al: Diagnosis of multiple sclerosis: 2017 revisions of the McDonald criteria. Lancet Neurol. 2018 Feb;17(2):162-173
4. Gurtner KM, Shosha E, Bryant SC, et al: CSF free light chain identification of demyelinating disease: comparison with oligoclonal banding and other CSF indexes. Clin Chem Lab Med. 2018 Jun 27;56(7):1071-1080
5. Saadeh R, Pittock S, Bryant S, et al: CSF kappa free light chains as a potential quantitative alternative to oligoclonal bands in multiple sclerosis. Neurology. 2019 April 09; 2019:92

Performance

Method Description

The oligoclonal band (OCB) assay requires paired cerebrospinal fluid (CSF) and serum samples. Unconcentrated CSF and diluted serum are electrophoresed by isoelectric focusing. The separated immunoglobulins (Ig) are visualized by an IgG immunoblot, and OCBs that are present in the CSF and not in the serum are reported. The assay uses reagents from Helena Laboratories.(Keir G, Luxton RW, Thompson EJ: Isoelectric focusing of cerebrospinal fluid immunoglobulins G: an annotated update. Ann Clin Biochem 1990;27:436-443; Hortin GL: Amino Acids, Peptides, and Proteins. In: Burtis CA, Bruns DE, eds. Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics. 7th ed. Elsevier; 2015:chap 18)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

2 to 4 days

Specimen Retention Time

14 days

Performing Laboratory Location

Rochester

Fees & 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 account representative. 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

83916 x 2

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
OLIG	Oligoclonal Banding	100757-4

Result ID	Test Result Name	Result LOINC® Value
8017	CSF Bands	49852-7
23611	CSF Olig Bands Interpretation	100756-6
2783	Serum Bands	100755-8