

Overview

Useful For

Only orderable as a reflex. For more information see:

- DMC2 / Dementia, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid
- ENC2 / Encephalopathy, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid
- EPC2 / Epilepsy, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid
- MAC1 / Myelopathy, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid
- MDC2 / Movement Disorder, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid

Detecting paraneoplastic neurological autoimmunity using spinal fluid specimens

Identifying an underlying cancer

Better characterization of a patient’s neurologic presentation

Evaluating patients with paraneoplastic or autoimmune central nervous system inflammation (brainstem encephalitis or limbic encephalitis or cerebellar ataxia or myelitis) or peripheral nervous system inflammation (including polyradiculopathy or neuropathy) and using serum or cerebrospinal fluid specimens.

Method Name

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- MDC2 / Movement Disorder, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid

Immunoblot (IB)

NY State Available

Yes

Specimen

Specimen Type

CSF

Specimen Required

Test Definition: MP1BC

Microtubule-Associated Protein 1B (MAP1B)
Antibody, Immunoblot, Spinal Fluid
(Non-Orderable)

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- DMC2 / Dementia, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid
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Specimen Minimum Volume
1 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
CSF	Refrigerated (preferred)	28 days	
	Ambient	72 hours	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Purkinje cell cytoplasmic antibody type-2 (PCA-2) targets microtubule-associated protein 1B (MAP1B), an intracellular cytoskeletal protein expressed in neurons. MAP1B-IgG-associated paraneoplastic neuropathy typically presents as subacute or chronic polyradiculoneuropathy or sensory neuronopathy, often without pain. Approximately half of affected patients also demonstrate central nervous system involvement, including cerebellar or brainstem dysfunction, myelopathy, or cognitive symptoms. Autonomic manifestations and gastrointestinal dysmotility occur less frequently. Nearly 89% of patients with MAP1B-IgG-related neuropathy have an underlying malignancy, most commonly small-cell lung carcinoma but also squamous cell carcinoma, renal cell carcinoma, or lymphoma. When MAP1B-IgG coexists with collapsin response-mediator protein-5 (CRMP5) or antineuronal nuclear antibody (ANNA1) antibodies, malignancy detection reaches 100%, reinforcing its value as a paraneoplastic marker. Compared to ANNA1-IgG neuropathy, MAP1B-IgG disease tends to be painless with better neurological outcomes and survival. Recognition of this antibody profile aids early cancer diagnosis and guides immunotherapy or tumor-directed treatment to improve prognosis.

Reference Values

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- DMC2 / Dementia, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid

-ENC2 / Encephalopathy, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid
-EPC2 / Epilepsy, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid
-MAC1 / Myelopathy, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid
-MDC2 / Movement Disorder, Autoimmune/Paraneoplastic Evaluation, Spinal Fluid

Negative

Interpretation

When positive, this test is strongly linked to small-cell lung carcinoma, occurring in approximately 80% to 90% of microtubule-associated protein 1B (MAP1B)-positive patients who have a malignancy. It also aids diagnosis across a broad clinical spectrum, including peripheral neuropathies such as painless subacute or chronic polyradiculoneuropathy and sensory neuronopathy, as well as central nervous system disorders like cerebellar ataxia, encephalopathy, myelopathy, and brainstem or cognitive dysfunction. Autonomic features and autoimmune gastrointestinal dysmotility may also occur. Together, these findings help healthcare professionals identify when an otherwise unexplained neurological syndrome may have a paraneoplastic cause.

Cautions

A negative Purkinje cell cytoplasmic antibody type-2 (PCA-2) or microtubule-associated protein 1B (MAP1B) antibody test result does not exclude autoimmune neurological disease or cancer.

Clinical Reference

1. Vernino S, Lennon VA. New Purkinje cell antibody (PCA-2): marker of lung cancer-related neurological autoimmunity. *Ann Neurol.* 2000;47(3):297-305
2. Gadoth A, Kryzer TJ, Fryer J, McKeon A, Lennon VA, Pittock SJ. Microtubule-associated protein 1B: Novel paraneoplastic biomarker. *Ann Neurol.* 2017;81(2):266-277. doi:10.1002/ana.24872
3. Jitprapaikulsan J, Klein CJ, Pittock SJ, et al. Phenotypic presentations of paraneoplastic neuropathies associated with MAP1B-IgG. *J Neurol Neurosurg Psychiatry.* 2020;91(3):328-330. doi:10.1136/jnnp-2019-322175

Performance

Method Description

Test strips are incubated with appropriately diluted sample, prepared to meet the assay's required end-dilution for each specimen type. Samples and controls are added directly to the strips, ensuring they are fully covered with dilution buffer, then mixed gently and incubated for 60 minutes at room temperature on a rocking platform. After incubation, the strips undergo a series of wash steps using diluted wash buffer, followed by a 30-minute incubation with a ready-to-use alkaline phosphatase-labeled IgG conjugate. The strips are washed again using the same procedure, then incubated with a ready-to-use substrate solution for 20 minutes at room temperature. The reaction is stopped by rinsing with distilled water through several wash cycles. Strips are then placed on absorbent material and allowed to dry fully, generally requiring at least two hours. Results are interpreted only after the strips have dried completely, and dried strips are stored protected from light. (Package insert: PCA-2 line assay. ravo Diagnostika GmbH; 05/2023)

Test Definition: MP1BC

Microtubule-Associated Protein 1B (MAP1B)
Antibody, Immunoblot, Spinal Fluid
(Non-Orderable)

PDF Report

No

Day(s) Performed

Varies

Report Available

4 days

Specimen Retention Time

2 days

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

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 was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

84182

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
MP1BC	MAP1B Immunoblot, CSF	In Process

Result ID	Test Result Name	Result LOINC® Value
621405	MAP1B Immunoblot, CSF	In Process