MAYO CLINIC LABORATORIES

Test Definition: RCVBS

Recoverin-IgG Antibody, Immunoblot, Serum

Overview

Useful For

Evaluating patients with suspected paraneoplastic retinopathy accompanying small cell carcinoma

Method Name

Immunoblot (IB)

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Collection Container/Tube:

Preferred: Red top

Acceptable: Serum gel

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions: Centrifuge and aliquot serum into a plastic vial.

Forms

If not ordering electronically, complete, print, and send a Neurology Specialty Testing Client Test Request (T732) with the specimen.

Specimen Minimum Volume

See Specimen Required

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container

Serum	Refrigerated (preferred)	28 days	
	Ambient	72 hours	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Patients with recoverin autoimmunity present with insidious onset vision change, often night-vision loss, floaters, and constricted vision, that can rapidly progress to blindness. On ophthalmologic examination, there are features of non-inflammatory retinopathy; retinal and optic nerve head pallor/atrophy, constricted visual fields and flat electroretinogram (ERG), but without anterior chamber disease, which is encountered with CRMP-5 paraneoplastic ophthalmitis. Small cell (pulmonary or extrapulmonary) or neuroendocrine carcinoma should be sought. Trials of immunotherapy could be attempted to improve vision, though generally this is not successful.

Reference Values

Negative

Interpretation

Seropositivity is consistent with a diagnosis of paraneoplastic retinopathy. Small cell carcinoma (pulmonary or extrapulmonary) and neuroendocrine carcinoma should be considered.

Cautions

A negative result does not exclude paraneoplastic retinopathy, other autoimmune retinopathy, or cancer.

Supportive Data

At Mayo Clinic,(1) recoverin-IgG antibody was detected in no controls and 2/33 suspected autoimmune/paraneoplastic retinopathy patients (6%); both were men with painless vision loss, detected 2 to 4 months before cancer detection. Patient 1, an 85 year-old smoker, progressed to light perception only bilaterally within 1 month. Small cell lung carcinoma was detected. Patient 2, a 66 year old non-smoker, had insidious progression of vision loss, ataxia, and myelopathy (and also harbored P/Q- and N-type calcium channel antibodies). Metastatic neuroendocrine carcinoma was detected. Both patients had bilateral optic nerve and retinal atrophy (non-inflammatory appearing) and flat electroretinograms. Neither patient had vision improvements despite cancer treatment and immunotherapy; both died from cancer within 2 years of diagnosis. During clinical evaluation, 25/33 retinopathy patients (including patients 1 and 2) were tested for recoverin antibody in an outside laboratory, and were reported negative in all but patient 1.

Clinical Reference

1. McKeon A, Lopez A, Lachance D, et al: Recoverin antibody: Ophthalmologic and oncologic significance. Neurology. 2016;86:(16 Supplement)

Performance

Method Description

Euroline (line-blot from Euroimmun, AG). All steps are performed at ambient temperature (18-28 degrees C) utilizing the

EUROBlot One instrument. Diluted patient serum (1:12.5) is added to test strips (strips containing recombinant antigen manufactured and purified using biochemical methods) in individual channels and incubated for 30 minutes. Positive serum samples will bind to the purified recombinant antigen and negative serum samples will not bind. Strips are washed to remove unbound serum antibodies and then incubated with anti-human IgG antibodies (alkaline phosphatase-labelled) and incubated for 30 minutes. The strips are again washed to remove unbound anti-human IgG antibodies and nitroblue tetrazolium chloride/5-bromo-4-chloro-3-indolylphosphate (NBT/BCIP) substrate is added. Alkaline phosphatase enzyme converts the soluble substrate into a colored insoluble product on the membrane to produces a black band. Strips are digitized via picture capture on the EUROBlot One instrument and evaluated with the EUROLineScan software.(Instruction manual: EUROLINE Neuronal Antigens Profile 72 (IgG). EUROIMMUN Medizinische Labordiagnostika AG)

PDF Report
No

Day(s) Performed
Monday through Friday

Report Available
4 to 6 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
RCVBS	Recoverin Immunoblot, S	83003-4

Test Definition: RCVBS

Recoverin-IgG Antibody, Immunoblot, Serum

Result ID	Test Result Name	Result LOINC® Value
610009	Recoverin Immunoblot, S	83003-4