MAYO CLINIC LABORATORIES

Test Definition: ROC

Rubeola (Measles) Antibodies, IgG and IgM, Spinal Fluid

Overview

Useful For

Diagnosing central nervous system rubeola (measles) virus infection and/or subacute sclerosing panencephalitis

Method Name

Immunofluorescence Assay (IFA)

NY State Available

No

Specimen

Specimen Type

CSF

Specimen Required

Container/Tube: Sterile vial

Specimen Volume: 0.25 mL

Forms

If not ordering electronically, complete, print, and send Infectious Disease Serology Test Request (T916) with the specimen.

Specimen Minimum Volume

0.1 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK

Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

Measles is a serious and highly contagious disease that can be a leading cause of death where nutrition and sanitation are limited. Onset begins with cough, fever, and lymphadenopathy approximately 2 weeks after exposure. Diagnosis is usually made when the rash appears. Koplik spots may be seen earlier on the buccal mucosa. Complications of measles may develop in children who appear to have normal immune functions.

Persistent infection of the central nervous system with measles virus is recognized to cause the disease subacute sclerosing panencephalitis (SSPE). SSPE is a rare, late complication of measles with an incidence of approximately 1 per 100,000 cases. SSPE is a progressive, usually fatal disease that occurs most often in children between the ages of 5 and 14 years. The onset is insidious and progressive. The incubation period from acute measles to onset of neurological symptoms varies from several months to many years. One of the most useful diagnostic tests involves the measurement of measles-specific antibodies in the cerebrospinal fluid (CSF) of patients with SSPE. Levels of antibody are significantly elevated in the CSF of SSPE patients compared to those without the disease.

Reference Values

IgG: <1:5
IgM: <1:10
Reference values apply to all ages.

Interpretation

Detection of organism-specific antibodies in the cerebrospinal fluid (CSF) may suggest central nervous system infection. However, these results are unable to distinguish between intrathecal antibodies and serum antibodies introduced into the CSF at the time of lumbar puncture or from a breakdown in the blood-brain barrier. The results should be interpreted with other laboratory and clinical data prior to a diagnosis of central nervous system infection.

Patients with subacute sclerosing panencephalitis have serum antibody titers that are 10 to 100 times higher than those seen in late convalescent-phase sera. More importantly, there is pronounced local production of oligoclonal measles virus antibodies in the central nervous system.

Cautions

Detection of organism-specific antibodies in the cerebrospinal fluid (CSF) may suggest central nervous system infection. However, these results are unable to distinguish between intrathecal antibodies and serum antibodies introduced into the CSF at the time of lumbar puncture or from a breakdown in the blood-brain barrier. The results should be interpreted with other laboratory and clinical data prior to a diagnosis of central nervous system infection.

Clinical Reference

1. Gascon GG: Subacute sclerosing panencephalitis. Semin Pediatr Neurol. 1996 Dec;3(4):260-269
2. Gershon AA: Measles virus (Rubeola). In: Bennett JE, Dolin R, Blaser MJ, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. 9th ed. Elsevier; 2020:2110-2116

Performance

Method Description

Cerebrospinal fluid (CSF) from a patient is reacted with the antigen substrate. Antibodies, if present, will bind to the antigen forming stable antigen-antibody complexes. If no antibodies are present, the complexes will not be formed and CSF components will be washed away. Fluorescein labeled antihuman IgG or IgM antibody is added to the reaction site which binds with the complexes formed. This results in a positive reaction of bright apple-green fluorescence when viewed with a properly equipped fluorescence microscope. If no complexes are formed, the fluorescein labeled antibody will be washed away, exhibiting a negative result.(Package insert: Measles Virus Antigen Substrate Slide. AESKU.BION, 9/2019)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

1 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 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

86765 x 2

LOINC® Information

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Rubeola (Measles) Antibodies, IgG and IgM, Spinal Fluid

Test ID	Test Order Name	Order LOINC® Value
ROC	Rubeola (Measles) Ab, IgG,IgM, CSF	90254-4

Result ID	Test Result Name	Result LOINC® Value
5741	Rubeola (Measles) Ab, IgG	22501-1
5742	Rubeola (Measles) Ab, IgM	In Process