MAYO CLINIC LABORATORIES

Test Definition: ROC

Rubeola (Measles) Ab, IgG,IgM, CSF

Overview

Useful For

Diagnosis of central nervous system infection with rubeola (measles) virus 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 a Microbiology Test Request (T244) with the specimen.

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK

Specimen Minimum Volume

0.1 mL

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. 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 which 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;3:260-269

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 from a patient is tested at dilutions beginning at 1:5 and at various levels through 1:2560. A drop of each dilution is reacted with measles-infected substrate slides and specific antibody assayed by the indirect immunofluorescence test.(Sever JL, Krebs H, Ley A, et al: Diagnosis of subacute panencephalitis. The value and availability of measles antibody determinations. JAMA. 1974;228:604-606; package insert: Measles Virus Antigen Substrate Slide. MBL BION; 9/1/2019)

PDF Report

No

Specimen Retention Time

14 days

Performing Laboratory Location

Rochester

Fees & Codes

Test Classification

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

CPT Code Information

86765 x 2

LOINC® Information

Test ID	Test Order Name	Order LOINC Value

ROC	Rubeola (Measles) Ab, IgG,IgM, CSF	90254-4

Result ID	Reporting Name	LOINC®
5741	Rubeola (Measles) Ab, IgG	22501-1
5742	Rubeola (Measles) Ab, IgM	22505-2