MAYO CLINIC LABORATORIES

Test Definition: JCV

JC Virus Detection by In Situ Hybridization

Overview

Useful For
Confirming a clinical and histopathologic diagnosis of progressive multifocal leukoencephalopathy

Method Name
In Situ Hybridization (ISH)

NY State Available
Yes

Specimen

Specimen Type
Special

Shipping Instructions
Attach the green "Attention Pathology" address label (T498) and the pink Immunostain Technical Only label included in the kit to the outside of the transport container.

Necessary Information
A pathology or diagnostic report (final or preliminary) and brief history are required and must accompany specimen for testing to be performed.

Specimen Required
Specimen Type: Tissue
Supplies: Pathology Packaging Kit (T554)
Submit:
Formalin-fixed, paraffin-embedded tissue block (preferred)
OR
4 Unstained glass, positively-charged slides with 5 (+ or -1)-micron formalin-fixed, paraffin-embedded tissue
Additional Information: Broken or cracked unstained slides will be rejected.

Forms
If not ordering electronically, complete, print, and send an Immunohistochemical (IHC)/In Situ Hybridization (ISH) Stains Request (T763) with the specimen.

Reject Due To

Wet/frozen tissue	Reject
Cytology	Reject

smears	
Non-formalin fixed tissue	Reject
Nonparaffin embedded tissue	Reject
Kidney/renal tissue	Reject
Noncharged, ProbeOn, and Snowcoat slides	Reject
Broken or cracked unstained slides	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Special	Ambient (preferred)		
	Refrigerated		

Clinical & Interpretive

Clinical Information

JC virus causes progressive multifocal leukoencephalopathy (PML), a rare, often fatal demyelinating disorder of the central nervous system that occurs in individuals with immune deficiency. PML is an infrequent complication of a wide variety of conditions, including lymphoproliferative disorders (Hodgkin disease and chronic lymphocytic leukemia), sarcoidosis, tuberculosis, and AIDS.

Interpretation

This test, when not accompanied by a pathology consultation request, will be answered as either positive or negative. If additional interpretation or analysis is needed, request PATHC / Pathology Consultation along with this test.

Cautions

Studies have shown potential cross reactivity between polyoma (BK) and JC virus in situ hybridization testing.(1)

Age of a cut paraffin section can affect staining quality. Stability thresholds vary widely among published literature. Best practice is for paraffin sections to be cut within 6 weeks.

The charge of glass slides can be affected by environmental factors and subsequently may alter slide staining. Sending unsuitable glass slides can result in inconsistent staining due to poor slide surface chemistry.

Best practices for storage of positively charged slides:
-Minimize time slides are stored after being unpackaged
-Limit exposure to high humidity and heat
-Minimize exposure to plastic

Broken or cracked unstained slides are not compatible with the instrumentation used in our performing laboratories and will be rejected. Additional material may be requested.

Clinical Reference

1. Fritzsche FR, Pianca S, Gaspert A, et al. Silver-enhanced in situ hybridization for detection of polyomavirus DNA in patients with BK virus nephropathy. Diagn Mol Pathol. 2011;20(2):105-110
2. Aksamit AJ, Mourrain P, Sever JL, Major EO. Progressive multifocal leukoencephalopathy: investigation of 3 cases using in situ hybridization with JC virus biotinylated DNA probe. Ann Neurol. 1985;18(4):490-496
3. Aksamit AJ. Nonradioactive in situ hybridization in progressive multifocal leukoencephalopathy. Mayo Clin Proc. 1993;68(9):899-910
4. Muaoz-Marmol AM, Mola G, Fernandez-Vasalo A, et al. JC virus early protein detection by immunohistochemistry in progressive multifocal leukoencephalopathy: a comparative study with in situ hybridization and polymerase chain reaction. J Neuropathol Exp Neurol. 2004;63(11):1124-1130
5. Vago L, Cinque P, Sala E, et al. JCV-DNA and BKV-DNA in the CNS tissue and CSF of AIDS patients and normal subjects. Study of 41 cases and review of the literature. J Acquir Immune Defic Syndr Hum Retrovirol. 1996;12(2):139-146
6. Chen H, Chen XZ, Waterboer T, et al. Viral infections and colorectal cancer: a systematic review of epidemiological studies. Int J Cancer. 2015:137(1)12-24

Performance

Method Description
In situ hybridization on sections of paraffin-embedded tissue.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Monday through Friday

Report Available
5 to 7 days

Specimen Retention Time
Until staining is complete.

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

88365-Primary
88364-If additional ISH

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
JCV	JC Virus ISH	In Process

Result ID	Test Result Name	Result LOINC® Value
71214	Interpretation	50595-8
71215	Participated in the Interpretation	No LOINC Needed
71216	Report electronically signed by	19139-5
71218	Material Received	81178-6
71596	Disclaimer	62364-5
72115	Case Number	80398-1