



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 pathology address label included in the kit to the outside of the transport container.

Necessary Information

A pathology/diagnostic report and a brief history are required.

Specimen Required

Specimen Type: Formalin-fixed, paraffin-embedded tissue block

Supplies: Pathology Packaging Kit (T554)

Specimen Volume: Entire block

Specimen Type: Slides

Slides: 4 Unstained glass, positively-charged slides with 5 (+ or - 1)-microns formalin-fixed, paraffin-embedded tissue

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 Cytology smears Nonformalin fixed tissue	Reject
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Nonparaffin embedded tissue Noncharged slides ProbeOn slides	
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Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

JC virus is the etiologic agent of progressive multifocal leukoencephalopathy (PML), a rare, demyelinating, fatal disorder of the central nervous system that occurs on a background of immune deficiency. PML is an infrequent complication of a wide variety of conditions, including lymphoproliferative disorders (Hodgkin disease, 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 (ISH) 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.

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 Jun;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 Oct;18(4):490-496
3. Aksamit AJ: Nonradioactive in situ hybridization in progressive multifocal leukoencephalopathy. *Mayo Clin Proc*. 1993 Sept;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 Nov;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 Jun 1;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 Jul 1:137(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
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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