



# 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

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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