

BK Virus Qualitative/Quantitative Real-Time PCR

BK Virus (BKV) is a polyomavirus which causes a mild to asymptomatic respiratory infection and establishes latency in renal cells and lymphocytes. Upon immunosuppression, reactivation can cause a variety of conditions, including hematuria, hemorrhagic cystitis, ureteric stenosis, interstitial nephritis, pneumonitis, encephalitis, retinitis, and various tumors. Renal transplant patients are the highest at-risk group for BKV reactivation with renal dysfunction and potential graft loss. Shedding of large quantities of the virus in urine is common and does not always indicate pathogenesis. A better measure of the potential for nephropathy is viral load monitoring in the blood. Plasma is the preferred specimen for detection of viremia, and an elevated viremia in conjunction with high urine levels is often indicative of renal nephropathy. Real-time PCR provides a rapid and sensitive method to determine the presence of target-specific amplifiable nucleic acids in all samples intended for PCR¹⁻³. For more information, call the lab at 513-636-9820.

Reporting Units:

Qualitative: Positive/Negative

Quantitative: Copies/mL (or Copies/µg DNA for tissues)

Unacceptable Specimens:

- Frozen whole blood
- Swabs in gel or charcoal media

Shipping Conditions:

- Ambient if sent within 24 hours
- On cold packs if sent >24 hours after collection

Testing Schedule:

Testing for BK Virus is performed Mon-Fri on first shift, and once on weekends (first shift). For testing outside of this schedule, call the lab at 513-636-9820. **TAT:** 1-3 days

CPT Codes:

Qualitative: 87798

Quantitative: 87799

Contact Information:

Cincinnati Children's Division of Pathology
 Molecular and Genomic Pathology Services (MGPS)

Phone: 513-636-9820

Fax: 513-517-7099

Email: pathology@cchmc.org

Website: cincinnatichildrens.org/pathology

For pricing or billing questions, call 513-636-4261.

Shipping Address:

Cincinnati Children's Hospital Medical Center
 Attn: Molecular and Genomic Pathology Services (MGPS)
 240 Albert Sabin Way, R2.001
 Cincinnati, OH 45229

References:

1. Watzinger F, Suda M, Preuner S, et al. Real-time quantitative PCR assays for detection and monitoring of pathogenic human viruses in immunocompromised pediatric patients. *J Clin Microbiol.* 42:5189-5198. 2004.
2. Nicleleit V, Hirsch H, Zeller M, et al. BK-virus nephropathy in renal transplants – tubular necrosis, MHC-class II expression and rejection in a puzzling game. *Nephrol Dial Transplant.* 15:324-332. 2000.
3. Herman J, Van Ranst M, Snoeck R, et al. Polyomavirus infection in pediatric renal transplant recipients: Evaluation using quantitative real-time PCR technique. *Pediatric Transplantation.* 8:485-492. 2004.

Sample Type	Qualitative	Quantitative	Volume Needed	Collection Container
Cerebrospinal Fluid (CSF)	√	√	1mL	Sterile Container
Plasma*	√	√	1mL	Lavender Top (EDTA)
Serum	√	√	1mL	Gold Top (SST)
Tissue**	√	√	0.3 g	Sterile Container
Urine	√	√	1mL	Sterile Container

* EDTA is preferred, sodium heparin is acceptable.

** Wrap tissue in gauze wetted slightly with sterile saline to keep moist during transport.

Clinical Lab Index:

BK QL: <https://www.testmenu.com/cincinnatichildrens/Tests/662801>

BK QN: <https://www.testmenu.com/cincinnatichildrens/Tests/662802>