

Human BK polyomavirus, also known as Polyomavirus hominis type 1, is a small animal tumorigenic virus. It penetrates into the host cell by caveolin-mediated endocytosis and then through the ER pathway to get into the nucleus where the virus replicates and expresses viral proteins. BKV primary infection typically occurs during childhood and is mostly asymptomatic, it is only occasionally accompanied by mild respiratory or urinary tract illnesses associated with viruria. After primary infection the virus occurs mainly in the kidney and urinary tract and in immunocompetent individuals remains in nonreplicative state. Healthy individuals have no health problems and it persists as a lifelong infection.

In immunosuppressed individuals, particularly renal and bone marrow transplant patients, causing viruria, viremia, ureteral stenosis and serious nephropathy, this can lead to graft failure. The prevalence of this virus in the world is significant, scientific publications indicate that up to 80% of the human population has specific antibodies. Any small amounts of the virus prevalence reported in some publications are probably caused by using various sensitive detection methods and different types of samples.