

## Interaction of human polyomaviruses with cells of the hematopoietic system



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Primary contact with the human polyomaviruses (huPyV) is followed by life-long persistence of viral DNA in the kidney, the CNS and as recently detected in hematopoietic cells. Under impairment of immune competence limited activation of virus infection can be followed by prolonged virus multiplication, severe destruction of tissue and disease. Although virus load in persistently infected immunodeficient individuals appears to be enhanced, the question whether localization and dissemination of huPyV infection to hematopoietic cells is influenced by changes of immune competence and plays a role in viral pathogenesis is not yet answered. The aim of our studies is therefore to characterize the type of association of huPyVs with blood cells, compare the distribution in blood specimens of immunocompetent and immunoimpaired individuals and answer the question for the type of virus/Host interaction in specific blood cell subpopulations. Presence of virus DNA, virus load and cellular localization was evaluated by molecular techniques. Interestingly, in healthy individuals the amount of virus DNA is highly variable compared to that in risk group patients, and virus DNA in lymphoid subpopulations is individually distributed. The data confirm that immune impairment and activation of polyomavirus infection can be associated with changes of virus load and localization of free virus in the blood. Presence of virus DNA in blood cells obviously is not only dependent on severe impairment of the immune system, but is also a natural event in persistent infection that might be subject to immunomodulation.