Abstract

Similarly to other viruses, polyomaviruses require for their successful replication enzymes and other proteins encoded by their host cells. Additionally, because of their relatively small genome with only a few genes, polyomaviruses utilize for their efficient replication cellular regulation mechanisms. One of these regulations are posttranslational modifications of histones, which form nucleosomes together with viral DNA. The spectrum of these modifications is very wide, but in case of polyomaviruses, almost only ones studied are histone acetylations and methylations. Second possible regulation is a methylation of cytosine in CpG dinucleotides, which is associated with repression of gene expression. Current knowledge however suggest that polyomaviruses do not utilise this kind of modification. Moreover, because of a relatively small amount of CpG dinucleotides present in their genomes, they seem to avoid it. The goal of this work is to describe the individual types of these modifications and show their possible importance in the infectious cycle of polyomaviruses.

Key words: polyomavirus, epigenetics, histone modification, DNA methylation, CpG dinucleotides