

Abstract

Human papillomaviruses (HPV) are small non-enveloped DNA viruses that can cause malignancies in the human population. They are often associated with carcinomas in anogenital area in both men and women, but also with part of head and neck cancer. In infected cells, the HPV genome is present as a circular molecule of DNA, called an episom. Certain circumstances result into the occurrence of a linearization of the HPV genome and a subsequent integration in the human chromosome. The integration plays a role in the cell behavior and contributes to immortalization and tumor transformation. The HPV genome integration is influenced by various viral or cell factors that affect the HPV genome stability in the cell. Interaction between viral and cell protein can often lead to activation of DNA damage response, that virus exploits for replication of viral genome. Viral genome integration is also more likely to occur in certain HPV types. Another factor is the area of infection, where the neoplastic progression was studied.