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PII: S0168-1702(16)30725-0
DOI: http://dx.doi.org/doi:10.1016/j.virusres.2016.11.013
Reference: VIRUS 97002

To appear in: *Virus Research*

Received date: 8-11-2016
Accepted date: 10-11-2016

Please cite this article as: Tommasino, Massimo, The biology of beta human papillomaviruses.Virus Research http://dx.doi.org/10.1016/j.virusres.2016.11.013

The biology of beta human papillomaviruses

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Highlights

- Beta human papillomavirus (HPV) types are suspected to be involved in skin carcinogenesis
- E6 and E7 oncoproteins from some beta HPV types are able to interfere with the regulation of key pathways/events associated with cellular transformation
- Beta HPV types may act only at early stages of carcinogenesis, by potentiating the deleterious effects of other carcinogens, such as UV radiation
- Some beta HPV types may have a mucosal tropism

Summary

The beta genus comprises more than 50 beta human papillomavirus (HPV) types that are suspected to be involved, together with ultraviolet (UV) irradiation, in the development of non-melanoma skin cancer (NMSC), the most common form of human cancer. Two members of the genus beta, HPV5 and HPV8, were first identified in patients with a genetic disorder, epidermodysplasia verruciformis (EV), that confers high susceptibility to beta HPV infection and NMSC development. The fact that organ transplant recipients (OTRs) with an impaired immune system have an elevated risk of NMSC raised the hypothesis that beta HPV types may also be involved in skin