

P0408

## Human Keratin 14 Driven HPV 16 E6/E7 Transgenic Mice Exhibit Hyperkeratinosis

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### Abstract

Human papillomavirus type 16 (HPV16) has been known as a major causative factor for the development of uterine cervical carcinomas. To investigate the *in vivo* activity of HPV16 expressed in squamous epithelia, transgenic mice harboring HPV16 E6/E7 with human keratin 14 (hK14) promoter were generated. Grossly, hK14 driven HPV16 E6/E7 transgenic mice exhibited multiple phenotypes, including wrinkled skin that was apparent prior to the appearance of hair in neonates, thickened ears, and loss of hair in adults. Transgenic mice with phenotype exhibiting severe wrinkled skin and a lack of hair growth died at the age of 3~4 weeks. Histological analysis revealed that in transgenic mice survived beyond the initial 3~4 weeks, HPV16 E6/E7 causes epidermal hyperplasia in multiple transgenic lineages with high incidence of transgene penetration. This epithelial hyperplasia was characterized by an expansion of the proliferating compartment and keratinocytes, and was associated with hyperkeratosis. Such activities were significantly higher in the skin of transgenic mice than that of the normal mice. Thus, these transgenic mice appeared to be useful for the expression of HPV16 E6/E7 gene and subsequent analysis on hyperkeratosis.

Key words: *HPV16 E6E7, Human Keratin 14 promoter; Hyperkeratosis, Skin cancer*