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Transformation of Human Vaginal Xenografts by Human Papillomavirus Type 11: Prevention of Infection with a Microbicide from the Alkyl Sulfate Chemical Family. [1]M.K. Howett, [2]D. Malamud, [1]P.A. Welsh, [1]L.R. Budgeon, [1]M.G. Ward, [1]E.B. Neely, [1]S.D. Patrick, [1]J. Weisz and [1]J.W. Kreider, [1]M.S. Hershey Medical Center, Pennsylvania State University College of Medicine, Hershey, PA, USA and [2]Biosyn, Inc., Philadelphia, PA, USA

Xenografts of human vaginal epithelium were established in two separate graft sites, the renal capsule and the subcutaneous space, by implantation into immunocompromised mice. Xenografts were uninfected or infected with cell-free extracts of human papillomavirus type 11 (HPV-11). Control tissues also included normal human vaginal epithelium. After 70-90 days in vivo, xenografts were harvested and assessed for morphologic transformation and production of HPV-11 macromolecules and virions. For subcutaneous xenografts, the vaginal lumen was maintained. A major focus in developing vaginal xenografts with an accessible lumen was their utilization in identifying and testing topical microbicides, especially microbicides with ability to inactivate human papillomaviruses (HPVs). An alkyl sulfate surfactant, sodium dodecyl sulfate (SDS), was recognized to inactivate HPVs as measured by absence of morphologic transformation and lack of virus mRNA and proteins in xenografts infected with SDS-treated virus. These experiments are the first to indicate that vaginas in immunocompromised mice serve as suitable targets for productive infection and neoplastic transformation by HPVs. Data will be presented demonstrating topical microbicidal prevention of Herpes simplex virus infection and HPV infection using the vaginal xenograft model. Efficacy and toxicity of C31G, an amphoteric surfactant, and SDS in these models will also be presented. (NIH P01 AI37829)