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Evaluation of next generation measles vectored HPV L1 vaccine immune response in non-human primates

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Human papilloma viruses (HPVs) are the primary etiologic agent of cervical carcinoma. Every year approximately half a million new cervical cancer cases are registered worldwide, particularly in developing countries where the access to screening programs is prohibited due to high costs. The development of prophylactic HPV vaccines represents an important opportunity to prevent cervical cancer whilst a therapeutic immunization would be valuable in treating pre-malignant and malignant disease. At present, first-generation of commercial HPV vaccines composed of L1 virus-like particles (VLPs) are expensive to produce and deliver. Live attenuated Measles virus (MV) vaccines have a well-established safety and efficacy record and are inexpensively delivered to the majority of developing countries. Furthermore, recombinant MV viruses produced by reverse genetics represent an attractive platform to generate candidates HPV vaccines to meet the needs of the developing world, due to low cost production and high efficiency, safety and stability. Here we present immunogenicity data of a combined vaccine based on recombinant MV expressing HPV antigens. Specifically, live attenuated Edmonston Zagreb strain of MV is used as viral vector to carry heterologous gene encoding the major capsid protein L1 of HPV type 16 and HPV type 18. Rescued recombinant attenuated MVEZ-HPV viruses, produced at high titer in MRC5 cell line, were used first to immunize transgenic CD46IFNAR mice susceptible to MV infection and then immunogenicity was assessed in Rhesus monkey. Specific neutralizing antibodies against HPV were assayed in various groups including alum adjuvant recombinant protein vaccine produced in *Pichia pastoris* KM71 strain.

Biography

Gaurav Gupta is working as Deputy General Manager with the role of Head Virology & Biotechnology at Vaccine Technology Centre, Zydus Cadila, Ahmedabad, India. He has over 11 years of industrial and 2 years of academic experience in research, development and commercialization of classical viral and genetically engineered vaccines. He has worked for Biomed and Panacea Biotech until March 2009. He is leading vaccines research, development and operations based at Ahmedabad, India and Catania, Italy for live, killed and genetic engineered vaccines. Currently 9 of his vaccines are in advance stages of Phase II/III trials. He has about 20 publications and filed 3 patents.

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