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Identification of potential candidate for India specific HPV-16 variant vaccine development: *In-silico* and *in-vivo* approach

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Cervical cancer is one of the most common gynecological cancers in world, but in India it is the most common cancer among women. Persistence infection with high-risk human papillomavirus (HR-HPV) is the most important risk factor. The sequence variation(s) in the most common HR-HPV type i.e. HPV-16 leads to altered biological functions with possible clinical significance in different geographical locations. Sixteen major variations (V1-V16) in full length L1 gene of HPV-16 were identified from cervical cancer tissue biopsies and showed their effect on immunogenicity. The effect of these major variations on the epitopes were predicted by *in-silico* methods and the immunogenicity of variant and respective reference DNA vaccine constructs were evaluated by administration of prepared DNA vaccine constructs in female BALB/c mice to evaluate antibody titer. In present study, L500F (V16) variation showed ~2.7 fold increase in antibody titer, whereas T379P (V8) showed ~0.4 fold decrease in antibody titer after final injection. These results showed a promising roadmap for the development of DNA based vaccine and for the generation of effective response need to study more prevalent variants of the HPV in the Indian population.

Biography

Mausumi Bharadwaj completed her PhD from CSIR-Indian Institute of Chemical Biology, Kolkata. After a brief Post-doctoral fellowship in Chicago Medical School, USA, she joined as an Assistant Professor in research in Department of Pathology and Infectious Disease in University of New Mexico School of Medicine, Albuquerque, USA. In 2003, she joined as a scientist (Asst. Director) to ICPO (ICMR), Noida. She handled several international research projects as PI specially Global HPV Lab Net & HPV Vaccine Program of WHO, Geneva, Switzerland; Indo-German project for India specific HPV vaccine development with German Cancer Center, Heidelberg, Germany. She has published more than 60 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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