

Identification of epitopes in Indian human papilloma virus 16 E6: A bioinformatics approach

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HPV-16 is reported as the cause of cervical and other related carcinomas. The early expressed protein E6 in cancer cells is found to be the target for immune therapeutic methods. The sequence of HPV-16 E6 (Accession No: ABK32509) from NCBI databank has been taken for this study. Hydrophilicity, flexibility, accessibility, turns, exposed surface, polarity and antigenic propensity scales were used for the B cell epitope prediction. MHC Class I and Class II alleles for the accession were predicted by the MHCpred 2.0 Program. The epitope sequences were also found out. Computer-based prediction program results show A0203 and DRB0101 lower IC50 than other alleles. The best peptide binding affinity was 21HLCTELQTT30 of A0203 allele. In DRB0101 allele the peptide found was 39YCKQQLRR48. Different structural features of the protein have also been predicted including glycosylation, kinase C phosphorylation, casein kinase II phosphorylation and N-myristylation sites. These computational prediction programs show four glycosylation, five kinase C phosphorylation, two casein kinase II phosphorylation, zero N-myristylation sites and seven disulphide sites. Development and approval of new vaccines are the keys for control of cancer. Epitopes and other structural features of protein prediction could be the best source of information and can help in molecular and medical studies of viral infection and development of HPV associated cancer drugs.

Biography

Ajay Kumar Singh is about to complete his Ph.D in Bioinformatics from Gautam Buddha Technical University, State Government of Uttar Pradesh (India) formerly known as Uttar Pradesh Technical University, Lucknow, INDIA. He did his M.Tech-IT (Spec. in Bioinformatics) from Indian Institute of Information Technology, Allahabad and M.Sc- Biotechnology from Kanpur, INDIA. He is also giving his dedication to serve Indian leading private University Amity University Uttar Pradesh, Lucknow campus since last 6 years as one of senior faculty. He has published 2 international papers, 4 book chapters and several oral presentations in conferences and workshops related to Bioinformatics and drug Design.

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