

Epidemiology and the Etiology of HPV Induced Cervical cancer: A Cohort Study in Eastern Uttar Pradesh, India

Jagat Kumar Roy, Shikha Srivastava, Biswa Pratim Das Purkayastha and Anand Prakash

Cytogenetics Laboratory, Department of Zoology, Institute of Science,
Banaras Hindu University, India

A part from the numerous risk factors associated, HPV alone accounts for more than 95% of cervical cancer. Epidemiological studies in 2424 women in eastern Uttar Pradesh from differing socio-demographic strata showed HPV16 to be most prevalent (63.7%) strain, followed by HPV 31(6.7%). Focusing on the role of host cellular factors during tumourigenesis, identified transcription factors, BRN3A and WWOX, to be differentially expressed in a number of other tumours. Analysis of HPV positive cell lines shows that BRN3A does not interact with activated HIPK2, undergoes positive auto-regulation and remains unaltered in presence of cisplatin. Screening of sensory enhancer region of *BRN3A* led to the identification of a novel SNP at 60163379 A>G, with the frequency of G allele being 8.73%. Silencing of BRN3A in cervical cancer cell lines led to down-regulation of the factors instrumental in the process of angiogenesis, viz., VEGF, HIF-1 α , ANGPT2 and FGF-2. This brings to light the involvement of the oncoprotein, BRN3A, in neovascularization process in uterine cervix cancer cells. However, the transcription factor WWOX, showed a significantly decreased protein level despite its elevated transcript levels. Taken together, our study opens up further avenues in the exploration of HPV induced cervical carcinogenesis to delineate the interacting partners of HPV.

Biography:

Jagat Kumar Roy is a Professor of Zoology in Banaras Hindu University teaching Genetics and Developmental Biology. In research front, lab has shown involvement of Rab11, a small G-protein, in membrane morphogenesis and differentiation in *Drosophila*. Also a new tumour suppressor function has been assigned to Dcp2 in *Drosophila* besides its function of decapping of mRNA. Epidemiology of HPV in human cervix cancer and in understanding the role of some of the cellular factors in HPV induced cervical cancer is in progress. 13 students dis Ph D from the lab and 49 publications came including a small paper in Nature.