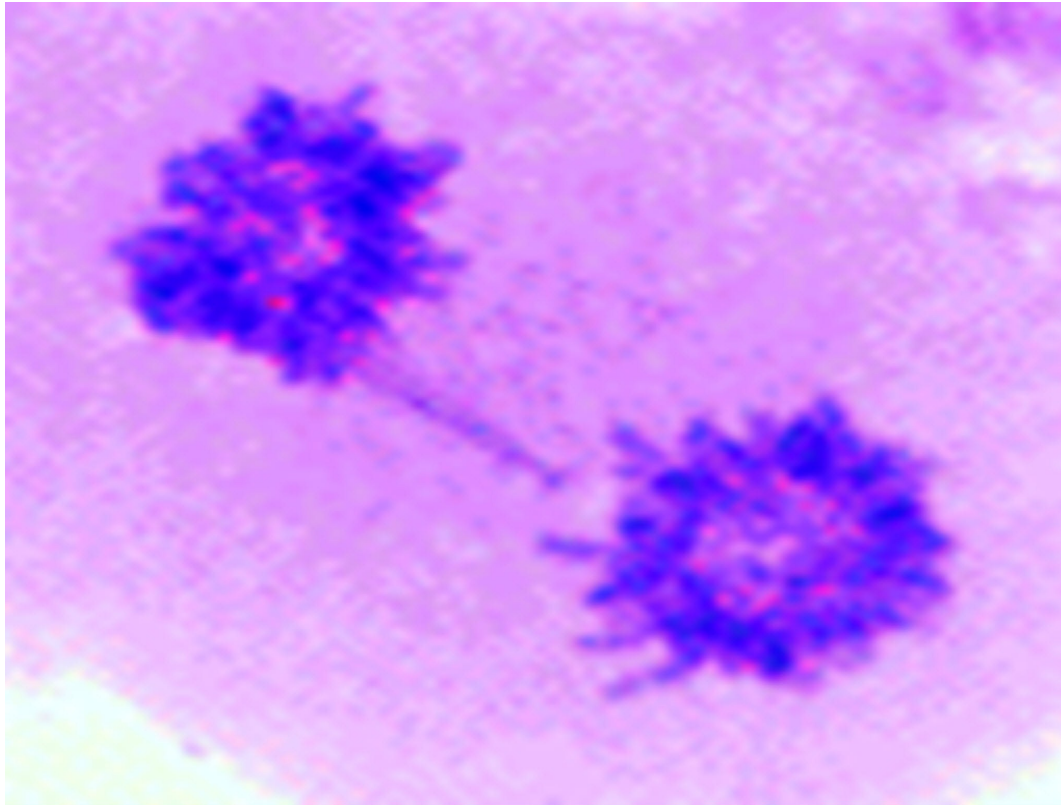
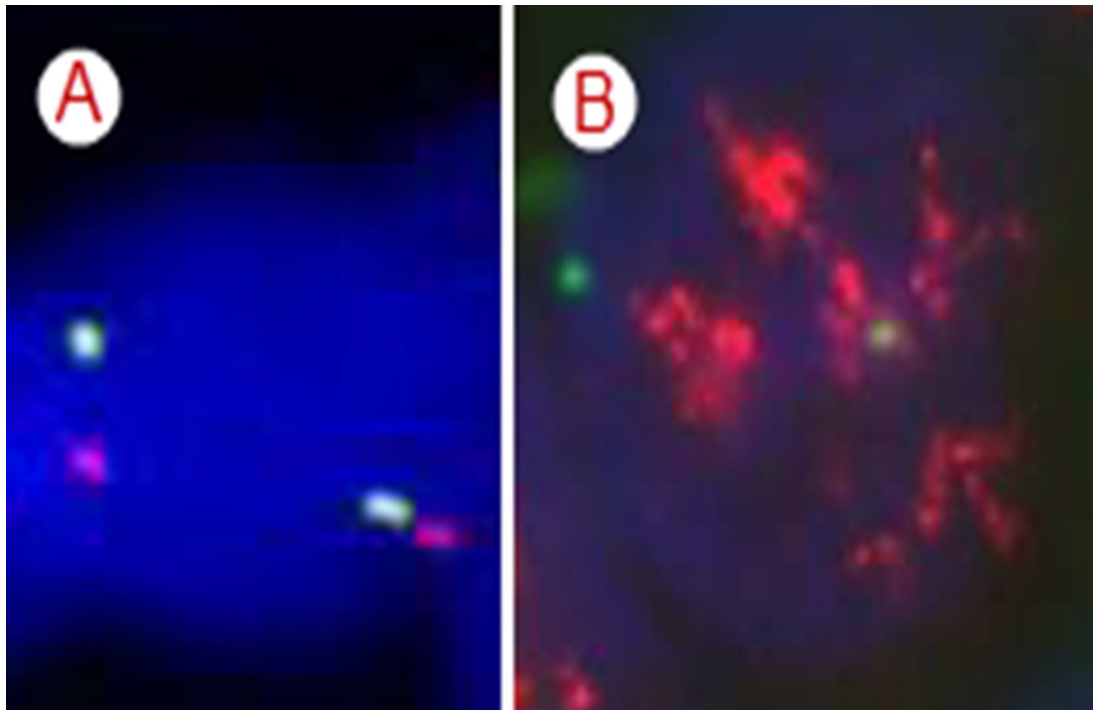


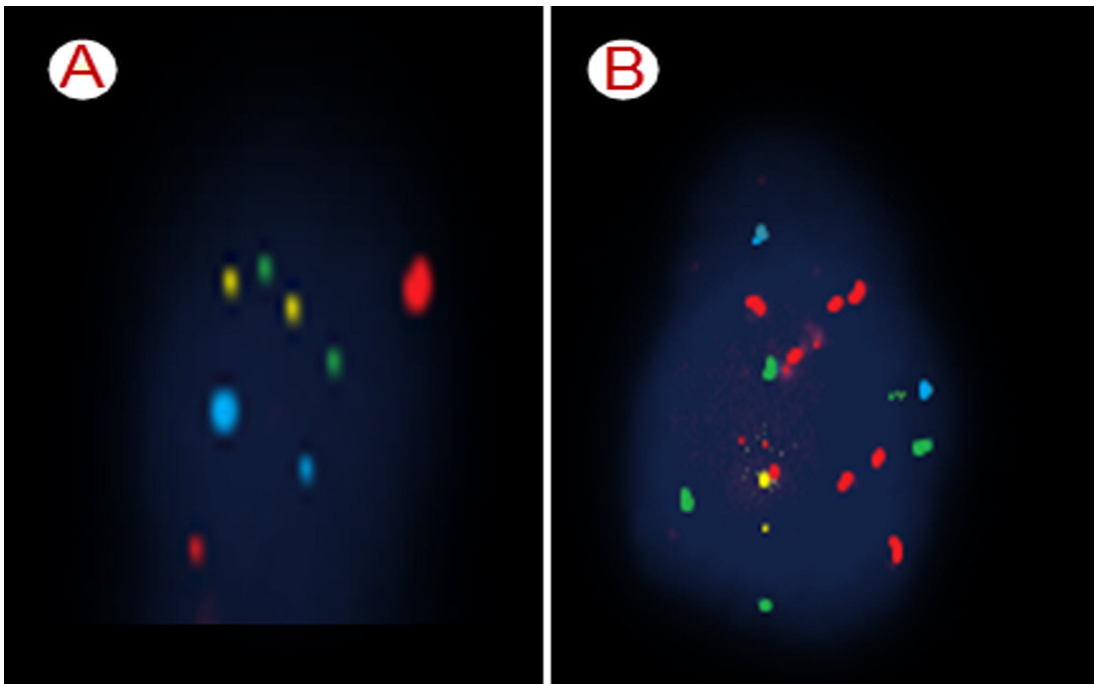
# 13 Applied Molecular Genetics



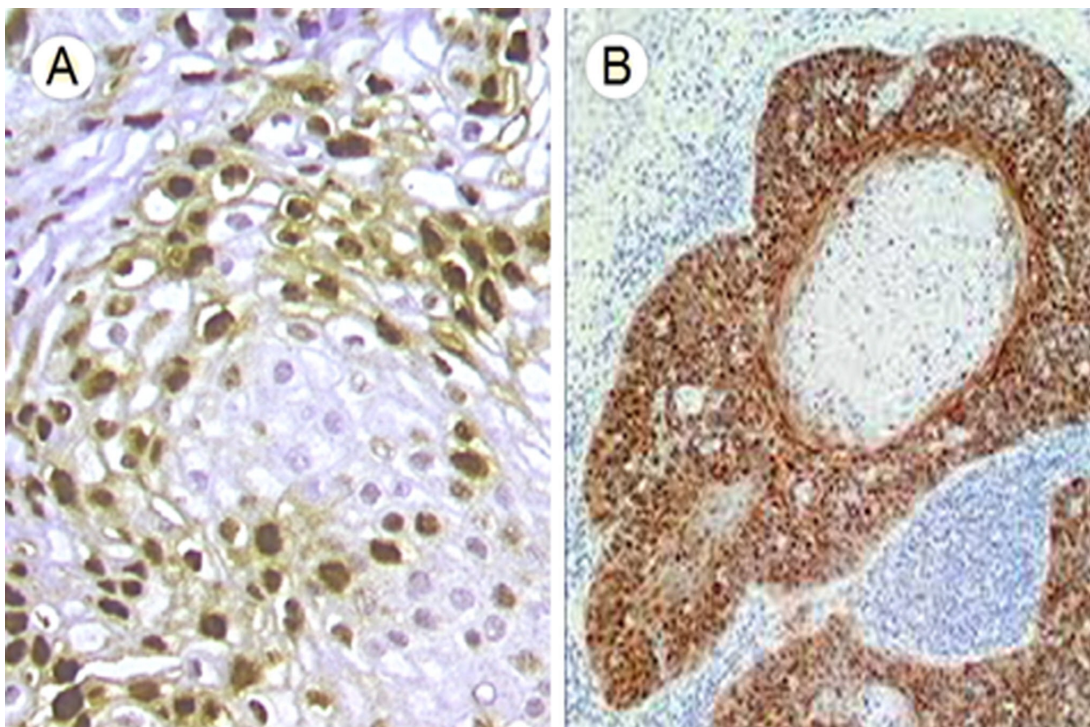
**P17-1** Chromosomal bridge between sticky ends of chromosomes at anaphase



**P 17-2** FISH analysis for a case of breast cancer using HER-2 locus specific identifies probe (LSI) and CEP17 probe labeling centromeric region of chromosome 17. **A.** It shows 2 Her-2 orange signals and 2 CEP17 green signals denoting non-amplified Her-2 gene. **B.** It shows amplification of Her-2 gene as demonstrated by clusters of orange signals with normal copy number of chromosome 17 as demonstrated by 2 orange signals.



**P 17-3** FISH analysis of increased chromosome number (polysomy) in bladder cancer. **A.** Normal urothelial cell showing 2 red dots (chromosome 3), 2 green (chromosome 7), 2 blue (chromosome 17) and 2 yellow (chromosome 9). **B.** Malignant cell showing polysomy of chromosome number 3 and 7 as demonstrated by 10 red dots and 5 green dots respectively. Chromosome 17 shows normal copy number as demonstrated by 2 blue signals. There is no deletion of 9p21 as demonstrated by presence of 2 yellow signals.



**P 17-4** Nasopharyngeal carcinoma associated with HPV infection. **A.** Demonstration of HPV by chromogen in situ hybridization (CISH). **B.** Immunohistochemical expression of cell cycle protein p16 nuclear reactivity co-existing with HPV infection.