

## **Linkage between prostate cancer occurrence and Y-chromosomal DYS loci in Malaysian subjects.**

### **Abstract**

Purpose: Prostate cancer differs markedly in incidence across ethnic groups. Since this disease is influenced by complex genetics, it is many genetic factors may affect the level of susceptibility to development of the disease. In this study, four Y-linked short tandem repeats (STRs), DYS388, DYS435, DYS437, and DYS439, were genotyped to compare Malaysian prostate cancer patients and normal control males. Materials and methods: A total of 175 subjects comprising 84 patients and 91 healthy individuals were recruited. Multiplex PCR was optimized to co-amplify DYS388, DYS435, DYS437, and DYS439 loci. All samples were genotyped for alleles of four DYS loci using a Genetic Analysis System. Results: Of all DYS loci, allele 10 (A) of DYS388 had a significantly lower incidence of disease in compare with other alleles of this locus, while a higher incidence of disease was found among males who had either allele 12 (C) of DYS388 or allele 14 (E) of DYS439. Moreover, a total of 47 different haplotypes comprising different alleles of four DYS loci were found among the whole study samples, of which haplotypes AABC and CAAA showed a lower and higher frequency among cases than controls, respectively. Conclusions: It is likely that Malaysian males who belong to Y-lineages with either allele 12 of DYS388, allele 14 of DYS439, or haplotype CAAA are more susceptible to develop prostate cancer, while those belonging to lineages with allele 10 of DYS388 or haplotype AABC are more resistant to the disease.

**Keyword:** Prostate cancer; Microsatellite loci; Y chromosome; Haplotypes.