

Gradients in Distribution of HLA – DRB1* Alleles in Castes and Tribes of South India

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ABSTRACT In the present study 520 individuals comprising eleven different populations (castes and tribes) from the states of Tamil Nadu and Kerala, South India were genotyped for HLA –DRB1* allele profile by PCR-SSP method. HLA DRB1*15 (subtype of DR2) was the allele consistently showing higher frequency in all populations studied. HLA DRB1*15 revealed a highest frequency in Kani tribe (45.19%) and the lowest frequency in Narikkuravars (Gypsies) (1.02%). The other predominant alleles based on their order of frequencies observed in each population were DRB1*10, 07 and 15 among Iyers; DRB1*07, 04, 15 and 08 among Kallars; DRB1*03 and 10 among Vanniyars and Vettuva Gounders; DRB1* 07 and 10 among Sourashtrans; DRB1*07 and 04 among Pallars; DRB1*04, 03, 07 and 11 among Narikkuravars; DRB1*03 among Paliyar and Kani tribes; DRB1*13, 10, 04, 14 among Nairs; DRB1*10, 01, 13 and 11 among Namboothiris of Kerala. Alleles such as DRB1*01, 08, 09, 11, 12, 14 and 16 were either present in low frequencies or completely absent in many of the south Indian populations studied. Predominantly Caucasian allele DRB1*01 was present in higher frequencies in Namboothiris (12.85%) and Narikkuravars (8.53%) only. Allele DRB1*01 frequency in all other populations is significantly low. However, alleles DRB1*07 was present in many populations with higher frequencies (highest in Kallars with 23.58%). This could have been due to the higher prevalence of HIV/TB infectious and the presence of ancestral haplotype 57.1 in Indian populations. Implications of this differential distribution of these HLA-DRB1*alleles in different castes and tribes of South India are discussed in the context of high prevalence of infectious diseases such as AIDS and TB.