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HLA Polymorphism in Punjabi Population of Pakistan

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ABSTRACT High polymorphism of the human leukocyte antigen (HLA) alleles is frequently used to determine the origin and migration of human population. Furthermore, HLA-A, -B and -DR alleles specific frequencies are important to distingush the genetic structure between related enthic groups and is helpful in hematopoietic stem cell, organ transplantation and disease association. The data on HLA-A, B and DRBI* loci at a high-resolution level is limited in Punjab Population, Pakistan, therefore, the present research was designed to explore the genetic profile of patients collected from Punjab, Pakistan using HLA-A, HLA-B and HLA-DRBI* genotypes with sequence specific primers. The allelic frequencies, haplotype distribution and genetic distances were investigated to map a genetic relationship. The most common alleles and haplotypes originating in Punjabi population were HLA-02, HLA-B*40, HLA-DRB1*15, A*2602-B*08-DRB*03, and A*02-B*51-DRB1*13. The bootstrap stats was applied with the phylogenetic analysis suggesting a strong evolutionary relationship with 80 percent validation. This shows that Punjabis have heredity with Sindhis as their personal predecessor. Altogether, these findings would be helpful in the selection of transplantation procedure, planning donor registry and for anthropologic studies.