

HLA ALLELE FREQUENCIES OF INDIVIDUALS WHO APPLIED TO ERCIYES UNIVERSITY TISSUE TYPING LABORATORY

ÖZNUR KORKMAZ¹, RABIYA NAYIR¹, ÇAĞMAN TAN¹, MUSTAFA YAVUZ KÖKER¹

¹:ERCIYES UNIVERSITY FACULTY OF MEDICINE IMMUNOLOGY DEPARTMENT, KAYSERI,
TURKEY

Here, we present HLA-A,B,C,DRB1 and DQB1 alleles identified via low resolution in a population of Anatolia Turkey. We performed a retrospective file audit of all HLA typing done at Tissue Typing Laboratory at Erciyes University (Erü) Hospital from 2013 to 2021. Low resolution typing was used to identify alleles HLA-A,B,C,DRB1 and DQB1 from 13319 individuals. This laboratory uses commercially available HLA-SSOP kits (Immucor lifecodes) to perform HLA typings. Data were taken from Transplant Tissue HLA (TDHLA) program which was created by our department. Frequency analysis was done in Excel 2016 program. This study shows that the largest populated allele frequency distribution ever accomplished in Turkish population.

21 different HLA-A alleles were observed and the 3 most frequently observed alleles are A*02, A*24 and A*03. 34 different HLA-B alleles were observed, with the 3 most frequently observed alleles B*35, B*51 and B*44. 14 different HLA-C alleles were observed, with the 3 most frequently observed alleles C*07, C*04 and C*12. 13 different HLA-DRB1 alleles were observed and the most frequently observed 3 alleles were DRB1*11, DRB1*04 and DRB1*15 and 6 different HLA-DQB1 alleles were observed, and the most frequently observed 3 alleles were DQB1*03, DQB1*05 and DQB1*06.

Studies have been conducted on HLA allele distribution and haplotype determination in many populations around the world. In our study, it was found that the HLA allele frequency was compatible with the studies conducted in different regions of Turkey. It is known that transplantation from an HLA-matched donor reduces the risk of rejection in hematopoietic stem cell transplants and kidney transplants. Because the allelic and haplotype frequencies of HLA loci differ significantly between various human populations, the identification of HLA genotypes is a valuable tool for anthropological research aimed at clarifying genetic relationships among various ethnic groups.

Analyzing the eight years HLA data in the Erciyes University Tissue Typing Laboratory will contribute to the national donor bank data, since the ethnicity of Kayseri province is heterogeneous and it has the largest data pool in national HLA allele frequency studies. HLA sequencing of specific populations is crucial to increase their representation in global reference panels. Due to the number of individuals studied, This study provides critical information on the frequencies and distributions of HLA alleles and haplotypes in Turkish population.