

HLA-B27 SUBTYPES DISTRIBUTION AMONG THE HEALTHY POPULATION IN KAZAKHSTAN

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Introduction. Human leukocyte antigen B27 (HLA-B27) is a molecule of class I major histocompatibility complex. Numerous studies showed an association of the antigen with various types of spondyloarthropathies. The strength of this association varied considerably among racial and ethnic groups.

The aim of this study was to determine the frequency of occurrence of polymorphic variants of HLA-B27 gene in individuals residing in the Republic of Kazakhstan.

Methods. For HLA-B27 polymorphism determination 842 samples of potential donors of hematopoietic stem cells was observed by PCR and HD sequencing by Protrans S4 method. DNA was isolated by column method PROTRANS DNA Box 500 and QC was done by NanoDrop UV-VIS 2000. HLA B27 polymorphism was determined by sequence specific primers PCR (SSP – PCR) by manufacturer's protocol and enzymatically purified by ExoSAP-IT® PCR Product Cleanup Affimetrix. Extracted amplicons were sequenced by Sanger's method on 3730xl Applied Biosystem DNA analyzer and purified with BigDye XTerminator® kit. Final analysis of sequence data was done by Sequence Pilot software (JSI medical systems, version 3.5.1.). Analysis of the results of the distribution group of alleles was conducted by the population genetics methods.

Results. We found different allelic variants of HLA-B27: B*27:01, B*27:02, B*27:04, B*27:05, B*27:07, B*27:40. The 63 samples (7.5%) were found as positive for HLA-B27. Most often allelic variants were B*27: 05 (4.5%) and B*27:02 (1.1%). The distribution of allelic variants in B*27:01, B *27: 04, B*27:07, B*27:40 was less than 1% (0.1-0.7%)

Conclusion. Our study showed that the incidence of HLA-B27 antigen in patients residing in the Republic of Kazakhstan was 7.5%, which corresponds to the prevalence of this antigen in the European population. The most commonly found HLA-B27 subtype was B*27:05 subtype (4.5%).