

## DISTRIBUTION OF B-LEADER DIMORPHISM AND HLA-E IN SERBIAN POPULATION

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B-leader peptides are encoded by exon 1 of the HLA-B locus and stabilize HLA-E molecules on the cell surface. Methionine (-21M) promotes binding in comparison to threonine (-21T). Main variants HLA-E\*01:01 and HLA-E\*01:03 differ in the level of expression and affinity to B-leader peptide. In combination with M/T dimorphism, it plays a significant role in HLA-E-mediated inhibition of NK cells. The aim was to assess the diversity of B leader and HLA-E in Serbian donor population and determine frequency of the combination carried by preferable donor. Samples of 1445 Serbian donors were genotyped at DKMS Life Science Lab (Dresden, Germany) by sequencing on Illumina NovaSeq6000. High-resolution results for HLA-B were translated using the HLA-B Leader Assessment Tool (BLEAT). NMDP codes for HLA-E results were decoded by the Multiple Allele Code (MAC) Web Services. Frequency of HLA-E was 58.8% for HLA-E\*01:01 and 41.2% for HLA-E\*01:03. Genotype frequencies were: HLA-E\*01:01,- (33.84%), HLA-E\*01:01,\*01:03 (49.96%), and HLA-E\*01:03,- (16.19%). Distribution of B-leaders was: T (76%) and M (24%), genotype frequency TT (59%), TM (36%) and MM (6%). The combination HLA-E\*01:03,- and MM linked to the lowest GvHD risk due to higher binding affinity of -21M and greater expression of HLA-E\*01:03, meaning the better ability to inhibit NK cells, had frequency of 0,9%. The combination HLA-E\*01:01,- and TT associated to the highest probability of causing GvHD had frequency of 18%. This is the first study of distribution of B leader and HLA-E genotypes in the Serbian population. Obtained data could be used in future study in correlation with clinical data.

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