Human neutrophil antigen HNA-1, -3, -4 and -5 allele frequencies in the Croatian population

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Background:

Human neutrophil antigens (HNA) are a group of glycoproteins expressed on the surface of human neutrophil granulocytes. Antibodies against the HNA are involved in a various clinical conditions; autoimmune and alloimmune neutropenia and transfusion-related acute lung injury. The aim of this study was to determine HNA allele frequency in the Croatian population.

Methods:

A total of 186 healthy Croatians were included in this study. DNA samples were typed for HNA-1, -3, -4 and -5 systems by using polymerase chain reactions with sequence-specific primers (PCR-SSP).

Results:

The frequencies of HNA-1a, -1b and -1c alleles were 65.1%, 79.0% and 5.4%, whereas the frequencies of HNA-3a and HNA-3b alleles were 94.1% and 5.9%. The frequencies of HNA-4a and -4b alleles were 98.4% and 1.6%, and for HNA-5a and -5b, alleles frequencies were 94.6% and 5.4% (Table 1).

Table 1: HNA-1, -3, -4 and -5 allele frequencies in the Croatian population

Total: 186			
HNA system		**n**	**%**
1	**a**	**121**	**65.1**
	b	**147**	**79.0**
	c	**10**	**5.4**
3	**a**	**175**	**94.1**
	b	**11**	**5.9**
4	**a**	**183**	**98.4**
	b	**3**	**1.6**
5	**a**	**176**	**94.6**
	b	**10**	**5.4**

Conclusions:

This was the first study to determine HNA-1, -3, -4 and -5 allele frequencies in the Croatian population. The determination of HNA antigen frequencies in population is important for estimating the risk of alloimmunization to HNA, especially to determine the risk of feto-maternal incompatibility and alloantibody production by transfusion of HNA incompatible blood components.