

NEW ALLELE

Alerts

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A novel HLA-A allele detected by sequence-based typing: A*68:66

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Key words: haplotype-specific sequence-based typing; human leukocyte antigen; single nucleotide polymorphism

The novel allele *HLA-A*68:66* differs from *HLA-A*68:01:01:01* by a synonymous single nucleotide exchange at position 102 (C→T) and three non-synonymous exchanges at position 257 (G→A), position 259 (A→G) and position 261 (C→G) in exon 2.

We identified the new HLA-A allele *A*68:66* by sequence-based typing (SBT) of human leukocyte antigen (HLA) class I of a European Caucasian organ transplant recipient. The patients' entire HLA class I typing results were *A*31:01, *68:66; B*07:02, *51:01* and *C*07:02/07:50, *15:02*. Typing of HLA class II was performed using polymerase chain reaction sequence-specific oligonucleotides (PCR-SSO) and sequence-specific primer (PCR-SSP) typing system resulting in *DRB1*11, *12* and *DQB1*03:01*.

After haplotype-specific amplification (1) of exons 2, 3 and 4 using a commercial PCR-SBT system (Protrans, Ketch, Germany), sequencing was performed on a 3500xL Genetic Analyzer (Applied Biosystems, Weiterstadt, Germany) resulting in the identification of the new allele. *HLA-A*68:66* differs from the *HLA-A*68:01:01:01* allele by a synonymous single nucleotide polymorphism (SNP) at position 102 in exon 2 (C→T) as well as by three non-synonymous SNPs at position 257 (G→A), position 259 (A→G) and position 261 (C→G) in exon 2 (Figure 1). The non-synonymous SNPs resulted in an amino acid exchange of codon 62 (arginine to glutamine, R→Q) and codon 63 (asparagine to glutamic acid, N→E).

Sequencing results have been submitted to the IMGT/HLA database (2) and the name *A*68:66* has been officially assigned by the WHO Nomenclature Committee (3) in

September 2010. The nucleotide sequence is available in the EMBL-Bank and the NCBI GenBank under the accession number HQ201391.

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Conflict of interest

The authors declare no conflict of interest.

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	Exon 2																				
Prot Position	1												15	...	60	61	62	63	64	65	
Nuc Position	72												117				258				
A*01:01:01:01	GGC	TCC	CAC	TCC	ATG	AGG	TAT	TTC	TTC	ACA	TCC	GTG	TCC	CGG	CCC	TGG	GAC	CAG	GAG	ACA	CGG
A*68:01:01:01	---	---	---	---	---	---	---	---	-A-	--C	---	---	---	---	---	---	---	-G-	A-C	---	---
A*68:66	*--	---	---	---	---	---	---	---	-A-	--T	---	---	---	---	---	---	---	---	---	---	---

Figure 1 Nucleotide alignment of the exon 2 (codons 1–15 and 60–65) of the novel human leukocyte antigen-A*68:66 allele in comparison with the *A*68:01:01:01* allele. The new allele differs synonymously from the *HLA-A*68:01:01:01* allele at position 102 in exon 2 (C→T) as well as non-synonymously at position 257 (G→A), position 259 (A→G) and position 261 (C→G) in exon 2. The non-synonymous single nucleotide polymorphisms (SNPs) resulted in an amino acid exchange of codon 62 (arginine to glutamine, R→Q) and codon 63 (asparagine to glutamic acid, N→E).