

M University Clinic Heidelberg
Department of Transplantation Immunology
Im Neuenheimer Feld 305
D-69120 Heidelberg - Germany
Phone: +49-6221-564013
Fax: +49-6221-564200
www.ctstransplant.org

Manual No.: 14
Revision: May 20, 2011
Product No.: 214 + 414
Lot No.: DR14L04-1

CTS *Collaborative Transplant Study*

WORKING INSTRUCTION
**HLA-DRB1*14 SUBTYPING
CTS-PCR-SSP MINITRAY KIT**

LOCUS- AND LOT-SPECIFIC MANUAL

To be applied to the following products:

Product No.	Description
214	HLA-DRB1*14 Subtyping CTS-PCR-SSP Minitray Kit   0197

Main differences between Lot DR14L04-1 (the current lot) and Lot DR14L04-0:

- An update with the IMGT/HLA Sequence Database of April 2011 was performed; therefore, the mix specificities have been extended by new alleles. Please also note the new HLA nomenclature.

Introduction

- Intended use: This kit reveals a high resolution typing of HLA-DRB1*14 by the PCR-SSP method.
- Allele coverage: IMGT/HLA Sequence Database 3.4.0, April 2011
- This manual is only valid for **Lot No. DR14L04-1**
- This manual should be used together with the Main Manual (General Information) the 'Working Instruction for the CTS-PCR-SSP TRAY and MINITRAY KITS' (Manual No. 100A).

Table of contents

Section	Description	Page
Cover	Introduction	1
1.	Kit Composition	3
2.	Materials, Reagents and Equipment not supplied	3
3.	Sample Requirements, PCR and Gel Electrophoresis	3
4.	Result Evaluation	3
5.	Interpretation Hints	4
6.	Troubleshooting	4
7.	Precaution	4
8.	Contact	4
Appendix	Table 1	5
	Table 2	10
	Table 3	12

1. Kit Composition

MINITRAY KIT

- Number of PCR primer mixes per test (minitray): 26 allele-specific mixes and one negative control mix.
- Number of tests (minitrays) per kit: 12
- The primer mixes are aliquoted and lyophilized in thin-walled, yellow PCR-minitrays.
- PCR buffer: 1.0 ml of 5% Mastermix (without Taq polymerase)

For storage condition, please refer to Section 1 of the ‘Working Instruction for the CTS-PCR-SSP TRAY and MINITRAY KITS’ (Manual No. 100A) supplied along with this product.

2. Materials, Reagents and Equipment not supplied

Please refer to Section 2 of the ‘Working Instruction for the CTS-PCR-SSP TRAY and MINITRAY KITS’ (Manual No. 100A) supplied along with this product.

3. Sample Requirements, PCR and Gel Electrophoresis

Please refer to Section 3 to 6 of the ‘Working Instruction for the CTS-PCR-SSP TRAY and MINITRAY KITS’ (Manual No. 100A) supplied along with this product.

4. Result Evaluation

- 4.1 Check the approximate size of the PCR product against the Primer Mix Specificity Table (Table 1) to confirm the correct product size.
- 4.2 Use the Amplification Pattern Tables (Table 2 and 3) to make the allele assignment, or use the SCORE Software (www.IHWG.org) for detailed result interpretation.

5. Interpretation Hints

The quality and quantity of DNA as well as of the Taq polymerase are extremely crucial factors. If your bands are too weak, you might try to adjust these two factors until you obtain optimal results.

Please refer to Section 7 of the 'Working Instruction for the CTS-PCR-SSP TRAY and MINITRAY KITS' (Manual No. 100A) supplied along with this product

SPECIAL NOTES

- Some **non-DRB1*14** alleles, such as DRB1*03, DRB1*11, DRB1*13 and others, share specific sequence motives with DRB1*14 specificities and therefore will react positively with some mixes (Table 3). Please take this into consideration while interpreting your reaction patterns!

6. Troubleshooting

Please refer to Section 8 of the 'Working Instruction for the CTS-PCR-SSP TRAY and MINITRAY KITS' (Manual No. 100A) supplied along with this product.

7. Precaution

Please refer to Material Safety Data Sheet for the CTS-PCR-SSP TRAY and MINITRAY KITS (Manual No. 100B) supplied along with this product.

8. Contact

If you have any particular questions concerning this kit, which are not answered in this or the Main Manual, please do not hesitate to contact me or my coworkers at:

Tel.: ++49 6221 564013

Fax: ++49 6221 564200

E-mail: hien.tran@med.uni-heidelberg.de

Hien Tran, M.D.

Table 1: Sizes of the PCR products and allele specificities of each HLA-DRB1*14 SUBTYPING CTS-PCR-SSP primer mix (Lot No. DR14L04-1) based on the IMGT/HLA Sequence Database 3.4.0, April 2011

Amplification Control (Internal Positive Control): Product size 440 base pairs (bp)

Mix	Allele	Serology	Product size (bp)
Mix 1	*11:13:01w-11:13:02w/11:17/11:52/11:89, 14:01:01-14:01:03/14:05:01-14:05:03/14:07:01-14:08/14:14/14:18/14:23:01-14:23:03/14:26/14:32:01w-14:32:02w/14:34w/14:35-14:36/14:38/14:42-14:45/14:54-14:56/14:58-14:60/14:62/14:64/14:65w/14:70/14:72/14:75/14:81w/14:82/14:86/14:88/14:90-14:92N/14:95-14:97/14:99/14:101/14:103/14:110/14:112, DRB4*01:02?	DR11, DR14, -, Undefined, DR6, Null	210 bp
Mix 2	*13:10/13:85, 14:02/14:06:01-14:06:02/14:09/14:13/14:17/14:19/14:21/14:29-14:30/14:33/14:46-14:48/14:51-14:52/14:80/14:83/14:108-14:109	DR13, -, DR14, DR6	see below
	*14:02/14:06:01-14:06:02/14:09/14:13/14:17/14:29-14:30/14:33/14:46-14:48/14:51-14:52/14:80/14:83/14:108	DR14, DR6, -	140 bp
	*13:10/13:85, 14:19/14:21/14:109	DR13, -, DR14	145 bp
Mix 3	*03:01:01:01-03:01:04/03:01:06-03:01:13/03:04:01-03:05:03/03:07-03:15/03:18-03:25/03:29-03:30/03:32-03:34/03:36/03:39-03:40/03:43-03:49/03:51-03:52/03:54-03:59/03:63-03:64, 08:04:02?/08:20, 11:01:01-11:01:06/11:01:08-11:02:01/11:03-11:04:07/11:06:01-11:16/11:18-11:21/11:23-11:29/11:31-11:36/11:38/11:40/11:42/11:44-11:47/11:49:01-11:49:02/11:51/11:53-11:55/11:57-11:59/11:61-11:65:02/11:68-11:70/11:72-11:74:02/11:76-11:82/11:84-11:87/11:89-11:94/11:96-11:103/11:105-11:106/11:108, 13:01:01-13:01:03/13:01:05-13:01:08/13:02:01-13:02:04/13:03:01-13:06/13:09-13:11:02/13:13-13:16/13:18/13:20-13:25/13:27-13:31/13:33:01-13:34/13:37/13:39/13:41-13:47/13:50:01-13:50:02/13:52/13:54-13:57/13:59/13:61:01-13:64/13:66:01-13:66:02/13:68-13:69/13:71/13:73-13:75/13:77-13:79/13:81-13:83/13:85-13:98/13:100-13:102/13:104-13:107/13:109-13:111/13:113N-13:115, 14:03:01-14:03:02/14:12:01-14:12:02/14:17/14:19/14:21/14:27/14:30/14:33/14:35/14:40/14:42/14:53/14:55/14:63-14:65/14:67/14:72/14:77-14:78/14:84-14:85/14:89/14:95/14:102/14:109	DR17, -, DR3, DR8, undefined, DR11, DR11/DR13, DR13/DR11, DR6, DR14, Null, DR1403/DR14, DR13/14	see below
	*03:01:01:01-03:01:04/03:01:06-03:01:13/03:04:01-03:05:03/03:07-03:15/03:18-03:25/03:29-03:30/03:32-03:34/03:36/03:39-03:40/03:43-03:49/03:51-03:52/03:54-03:59/03:63-03:64, 11:01:01-11:01:06/11:01:08-11:02:01/11:03-11:04:07/11:06:01-11:16/11:18-11:21/11:23-11:29/11:31-11:36/11:38/11:40/11:42/11:44-11:47/11:49:01-11:49:02/11:51/11:53-11:55/11:57-11:59/11:61-11:65:02/11:68-11:70/11:72-11:74:02/11:76-11:82/11:84-11:87/11:89-11:94/11:96-11:103/11:105-11:106/11:108, 13:01:01-13:01:03/13:01:05-13:01:08/13:02:01-13:02:04/13:03:01-13:06/13:09-13:11:02/13:13-13:16/13:18/13:20-13:25/13:27-13:31/13:34/13:39/13:41-13:46/13:50:01-13:50:02/13:52/13:54/13:56-13:57/13:59/13:61:01-13:64/13:66:01-13:66:02/13:68-13:69/13:71/13:73-13:75/13:77-13:79/13:82-13:83/13:86-13:87/13:91-13:93/13:96-13:98/13:100/13:102/13:104-13:107/13:109-13:111/13:113N-13:114, 14:17/14:21/14:30/14:33/14:35/14:42/14:53/14:64-14:65/14:72/14:95	DR17, -, DR3, DR11, DR11/DR13, DR13/DR11, Undefined, DR6, DR14, Null, DR13/14	145 bp
	*03:01:01:01-03:01:04/03:01:06/03:04:01/03:05:01-03:05:02/03:07-03:11:01/03:12-03:13:01/03:14-03:15/03:18-03:25/03:29-03:30/03:32-03:34/03:36/03:39-03:40, 11:07/11:53/11:73/11:79/11:93, 13:03:01-13:03:06/13:10/13:33:01-13:33:03/13:37/13:66:01-13:66:02/13:81/13:85/13:88-13:90/13:94-13:95/13:101/13:115, 14:19/14:21/14:109	DR17, DR3, -, DR11, DR13, DR14	215 bp
	*08:04:02?/08:20, 11:23/11:25/11:45/11:55/11:64, 13:13/13:18/13:47/13:55, 14:03:01-14:03:02/14:12:01-14:12:02/14:27/14:40/14:55/14:63/14:67/14:77-14:78/14:84-14:85/14:89/14:102	DR8, undefined, DR11, -, DR13, DR1403/DR14, DR6	225 bp
	*07:06, 08:08, 14:04/14:26/14:28/14:31/14:50/14:68/14:71/14:73/14:76/14:79/14:93/14:107	DR7, DR8, DR1404/DR14, -	see below
Mix 4	*08:08, 14:04/14:28/14:31/14:50/14:68/14:71/14:73/14:76/14:79/14:93/14:107	DR8, DR1404/DR14, -	165 bp
	*07:06, 14:26	DR7, DR14	135 bp

Mix 5	*14:01:03/14:05:01-14:05:03/14:43-14:45/14:56/14:91/14:96/14:103, DRB4*01:02?	DR14, -, Undefined	see below
	*14:05:01-14:05:03/14:43-14:45/14:56/14:91/14:96/14:103, DRB4*01:02?	DR14, -, Undefined	200 bp
	*14:01:03	DR14	145 bp
Mix 6	*03:02:01-03:03/03:27/03:29/03:38/03:53, 11:17/11:52-11:54:02, 13:15/13:19/13:26/13:53/13:57/13:76/13:85/13:104, 14:01:01-14:03:02/14:05:01-14:08/14:12:01-14:14/14:18-14:20/14:23:01-14:24/14:26-14:27/14:29/14:33/14:35-14:36/14:40-14:45/14:47-14:49/14:51/14:54/14:56/14:58-14:60/14:62-14:64/14:67/14:70/14:72/14:75/14:77-14:78/14:81-14:83/14:85-14:86/14:88-14:92N/14:94-14:99/14:101/14:106/14:108-14:110/14:112	DR18, DR3, -, DR14, DR11, DR13, DR1403/DR14, DR6, Undefined, Null	see below
	*03:02:01-03:03/03:27/03:29/03:38/03:53, 13:15/13:19/13:26/13:53/13:57/13:85/13:104, 14:02-14:03:02/14:06:01-14:06:02/14:12:01-14:13/14:18-14:20/14:24/14:27/14:29/14:40-14:41/14:47-14:49/14:51/14:63/14:67/14:77-14:78/14:81/14:83/14:85/14:89/14:94/14:98/14:106/14:108-14:109	DR18, DR3, -, DR13, DR14, DR1403/DR14, DR6	85 bp
	*03:27, 11:17/11:52-11:54:02, 13:76, 14:01:01-14:01:03/14:05:01-14:05:03/14:07:01-14:08/14:14:18/14:23:01-14:23:03/14:26/14:33/14:35-14:36/14:42-14:45/14:51/14:54/14:56/14:58-14:60/14:62/14:64/14:70/14:72/14:75/14:82/14:86/14:88/14:90-14:92N/14:95-14:97/14:99/14:101/14:110/14:112	DR3, DR14, DR11, DR13, DR6, Undefined, -, Null	225 bp
Mix 7	*03:01:01:01-03:01:04/03:01:06-03:01:13/03:04:01-03:05:03/03:07-03:15/03:18-03:25/03:29-03:30/03:32-03:34/03:36/03:39-03:40/03:43-03:49/03:51-03:52/03:54-03:59/03:63-03:64, 11:01:01-11:01:06/11:01:08-11:02:01/11:03-11:04:07/11:06:01-11:16/11:18-11:21/11:23-11:29/11:31-11:36/11:38/11:40/11:42/11:44-11:47/11:49:01-11:49:02/11:51/11:53-11:55/11:57-11:59/11:61-11:65:02/11:68-11:70/11:72-11:74:02/11:76-11:82/11:84-11:87/11:89-11:94/11:96-11:103/11:105-11:106/11:108, 13:01:01-13:01:03/13:01:05-13:01:08/13:02:01-13:02:04/13:04-13:06/13:09-13:11:02/13:14:01-13:16/13:18/13:20-13:25/13:27-13:31/13:34/13:39/13:41-13:46/13:50:01-13:50:02/13:52/13:54/13:56-13:57/13:59/13:61:01-13:64/13:66:01-13:66:02/13:68-13:69/13:71/13:73-13:75/13:77-13:79/13:82-13:83/13:86-13:87/13:91-13:93/13:96-13:98/13:100/13:102/13:104-13:107/13:109-13:111/13:113N-13:114, 14:01:01-14:01:03/14:07:01-14:07:02/14:16-14:17/14:21-14:22/14:25-14:26/14:30/14:32:01-14:33/14:35/14:38/14:42-14:43/14:49/14:53-14:55/14:58/14:60/14:62/14:64-14:65/14:69-14:70/14:72/14:74-14:75/14:82/14:86-14:88/14:90/14:92N/14:95/14:97/14:99/14:104-14:105/14:110-14:112	DR17, -, DR3, DR11, DR11/DR13, DR13/DR11, Undefined, DR6, DR14, Null, DR13/14	see below
	*03:01:01:01-03:01:04/03:01:06-03:01:13/03:04:01-03:05:03/03:07-03:15/03:18-03:25/03:29-03:30/03:32-03:34/03:36/03:39-03:40/03:43-03:49/03:51-03:52/03:54-03:59/03:63-03:64, 11:01:01-11:01:06/11:01:08-11:02:01/11:03-11:04:07/11:06:01-11:16/11:18-11:21/11:23-11:29/11:31-11:36/11:38/11:40/11:42/11:44-11:47/11:49:01-11:49:02/11:51/11:53-11:55/11:57-11:59/11:61-11:65:02/11:68-11:70/11:72-11:74:02/11:76-11:82/11:84-11:87/11:89-11:94/11:96-11:103/11:105-11:106/11:108, 13:01:01-13:01:03/13:01:05-13:01:08/13:02:01-13:02:04/13:04-13:06/13:09-13:11:02/13:14:01-13:16/13:18/13:20-13:25/13:27-13:31/13:34/13:39/13:41-13:46/13:50:01-13:50:02/13:52/13:54/13:56-13:57/13:59/13:61:01-13:64/13:66:01-13:66:02/13:68-13:69/13:71/13:73-13:75/13:77-13:79/13:82-13:83/13:86-13:87/13:91-13:93/13:96-13:98/13:100/13:102/13:104-13:107/13:109-13:111/13:113N-13:114, 14:17/14:21/14:30/14:33/14:35/14:42/14:53/14:64-14:65/14:72/14:95	DR17, -, DR3, DR11, DR11/DR13, DR13/DR11, Undefined, DR6, DR14, Null, DR13/14	145 bp
	*03:10, 13:43/13:45, 14:01:01-14:01:03/14:07:01-14:07:02/14:16/14:22/14:25-14:26/14:32:01-14:32:02/14:35/14:38/14:49/14:53-14:55/14:58/14:60/14:62/14:69-14:70/14:74-14:75/14:82/14:86-14:88/14:90/14:92N/14:97/14:99/14:104-14:105/14:110-14:112	DR3, DR13, DR14, DR6, DR13/14, -, Null	175 bp
	*14:43	DR14	230 bp
Mix 8	*03:01:01:01-03:01:10/03:01:12-03:01:13/03:02:02-03:04:02/03:05:03-03:08/03:10-03:11:02/03:12?/03:13:01-03:13:02/03:15/03:16?/03:17-03:28/03:30-03:37/03:39/03:43-03:49/03:51-03:52/03:54-03:56/03:58-03:62/03:64, 08:20, 11:02:01-11:04:07/11:06:01-11:07/11:13:01-11:13:02/11:16-11:18/11:21/11:25/11:27:01/11:34-11:36/11:38/11:40?/11:41-11:44/11:46:01-11:48/11:50/11:52/11:54:01-11:60/11:63/11:65:01-11:65:02/11:70/11:76-11:78/11:83-11:85/11:88-11:89/11:92/11:98/11:102, 13:01:01-13:01:07/13:01:09/13:04/13:06/13:08-13:11:02/13:15/13:18-13:20/13:22/13:24/13:27-13:28/13:32/13:33:02-13:33:03/13:35/13:40/13:42-13:44/13:48/13:51-13:54/13:57-13:59/13:61:01-13:61:02/13:64/13:68-13:72/13:75-13:81/13:83-13:84/13:87/13:91-13:94/13:98/13:102/13:105-13:106/13:108/13:110-13:111/13:113N-13:114, 14:01:01/14:01:02?/14:01:03/14:05:01-14:06:01/14:08/14:12:01-14:12:02/14:16-14:18/14:20?/14:21/14:23:01-14:23:03/14:26/14:29/14:32:01-14:35/14:37-14:38/14:43/14:45/14:47/14:54-14:56/14:58-14:60/14:62/14:64-14:65/14:70/14:72/14:74-14:75/14:78/14:80-14:84/14:86-14:88/14:90-14:92N/14:95-14:101/14:103-14:106/14:108/14:110-14:112, DRB3*01:14, DRB4*01:02?	DR17, -, DR18, DR3, undefined, DR11, DR11/DR13, DR14, DR6, Null	see below

	*03:01:02/03:02:02/03:05:03/03:11:02/03:13:02/03:17/03:24/03:27/03:35, 11:27:01/11:84, 13:33:02-13:33:03/13:61:01, 14:38/14:47/14:98, DRB3*01:14	DR17, DR18, DR3, DR11, -, DR13, DR14	235 bp
	*03:01:01:01-03:01:10/03:01:12-03:01:13/03:03-03:04:02/03:06-03:08/03:10-03:11:02/03:12?/03:13:01-03:13:02/03:15/03:16?/03:18-03:26/03:28/03:30-03:34/03:36-03:37/03:39/03:43-03:49/03:51-03:52/03:54-03:56/03:58-03:62/03:64, 08:20, 11:02:01-11:04:07/11:06:01-11:07/11:13:01-11:13:02/11:16-11:18/11:21/11:25/11:34-11:36/11:38/11:40?/11:41-11:44/11:46:01-11:48/11:50/11:52/11:54:01-11:60/11:63/11:65:01-11:65:02/11:70/11:76-11:78/11:83-11:85/11:88-11:89/11:92/11:98/11:102, 13:01:01-13:01:07/13:01:09/13:04/13:06/13:08-13:11:02/13:15/13:18-13:20/13:22/13:24/13:27-13:28/13:32/13:35/13:40/13:42-13:44/13:48/13:51-13:54/13:57-13:59/13:61:01-13:61:02/13:64/13:68-13:72/13:75-13:81/13:83-13:84/13:87/13:91-13:94/13:98/13:102/13:105-13:106/13:108/13:110-13:111/13:113N-13:114, 14:01:01/14:01:02?/14:01:03/14:05:01-14:06:01/14:08/14:12:01-14:12:02/14:16-14:18/14:20?/14:21/14:23:01-14:23:03/14:26/14:29/14:32:01-14:35/14:37-14:38/14:43/14:45/14:54-14:56/14:58-14:60/14:62/14:64-14:65/14:70/14:72/14:74-14:75/14:78/14:80-14:84/14:86-14:88/14:90-14:92N/14:95-14:97/14:99-14:101/14:103-14:106/14:108/14:110-14:112, DRB4*01:02?	DR17, -, DR18, DR3, undefined, DR11, DR11/DR13, DR14, DR6, Null	260 bp
Mix 9	*03:02:01-03:02:02/03:05:01-03:05:03/03:09/03:14/03:17/03:27/03:29/03:35/03:38/03:40-03:41/03:53, 11:01:01-11:01:10/11:01:12-11:01:13/11:08:01-11:12:02/11:14:01-11:15/11:19:01-11:19:02/11:20/11:23?/11:24/11:26?-11:27:01?/11:27:02/11:28:01-11:29/11:31-11:33/11:37/11:39/11:45/11:49:01/11:51/11:53/11:61-11:62/11:64/11:66/11:68-11:69/11:74:01/11:75/11:79-11:82/11:87/11:90-11:91/11:94/11:96-11:97/11:99-11:101/11:103/11:105-11:108, 13:02:01-13:02:03/13:02:05-13:03:02/13:05:01-13:05:02/13:07:01-13:07:02/13:12:01/13:13-13:14:03/13:21:01/13:23:01-13:23:02/13:25?/13:26/13:29-13:31/13:33:01?/13:33:02/13:34/13:36-13:39/13:41/13:45?/13:46-13:47/13:49-13:50:02/13:55-13:56/13:60/13:62-13:63/13:65-13:66:01/13:73-13:74/13:82/13:85-13:86/13:96-13:97/13:99-13:100/13:104/13:107, 14:02-14:03:02/14:07:01-14:07:02/14:09/14:13-14:14/14:19/14:22/14:24-14:25/14:27/14:30/14:36/14:40-14:42/14:44:01-14:44:02/14:47-14:49/14:51/14:53/14:63/14:67/14:69/14:77/14:85/14:89/14:94/14:98/14:102/14:109, DRB3*01:14	DR18, DR3, -, DR11, DR13, DR13/DR11, DR14, Undefined, DR6, DR1403/DR14, DR13/14	260 bp
Mix 10	*04:62/04:69, 14:10/14:57/14:60	DR4, -, DR14, DR4/DR6	see below
	*04:62/04:69, 14:10/14:57	DR4, -, DR14, DR4/DR6	175 bp
	*14:60	DR14	80 bp
Mix 11	*08:01:01-08:04:01/08:04:02?/08:04:03-08:04:07/08:06-08:17/08:19/08:21-08:23/08:26-08:39/08:41-08:42/08:44-08:45, 11:67, 12:04, 14:04/14:11/14:15/14:28/14:68/14:71/14:73	DR8, -, DR8/DR11, Undefined, DR12, DR1404/DR14	see below
	*08:31/08:41, 11:67, 12:04, 14:11	DR8/DR11, -, DR12, DR14	170 bp
	*08:01:01-08:04:01/08:04:02?/08:04:03-08:04:07/08:06-08:17/08:19/08:21-08:23/08:26-08:28/08:30:01-08:30:02/08:32-08:39/08:42/08:44-08:45, 11:67, 14:15	DR8, -, Undefined	215 bp
	*08:29, 14:04/14:11/14:28/14:68/14:71/14:73	DR8, DR1404/DR14, -	215 bp
Mix 12	*03:01:06/03:08/03:10/03:18, 08:09/08:21/08:35, 11:09-11:10:02/11:13:01-11:13:02/11:16-11:17/11:20/11:40/11:46:01/11:52/11:59, 13:18/13:43, 14:01:01-14:01:03/14:03:01-14:04/14:07:01-14:08/14:10-14:12:02/14:15-14:16/14:22/14:23:02/14:26-14:28/14:31-14:32:02/14:34-14:36/14:38-14:40/14:49-14:50/14:54-14:55/14:57/14:60-14:63/14:67-14:68/14:70-14:71/14:73-14:79/14:82/14:84-14:90/14:92N-14:93/14:97/14:99/14:104-14:105/14:107/14:110-14:113, DRB3*02:02:04/02:16/02:18	DR17, DR3, DR8, -, DR11, DR11/DR13, DR14, DR1403/DR14, DR1404/DR14, DR6, DR4/DR6, Null, DR52, Undefined	see below
	*03:18, 14:36	DR3, DR14	70 bp
	*03:01:06/03:08/03:10, 11:09-11:10:02/11:13:01-11:13:02/11:16-11:17/11:20/11:40/11:46:01/11:52/11:59, 13:43, 14:01:01-14:01:03/14:04/14:07:01-14:08/14:10-14:11/14:16/14:22/14:23:02/14:26/14:28/14:31-14:32:02/14:34-14:35/14:38-14:39/14:49-14:50/14:54-14:55/14:57/14:60-14:62/14:68/14:70-14:71/14:73-14:76/14:79/14:82/14:86-14:88/14:90/14:92N-14:93/14:97/14:99/14:104-14:105/14:107/14:110-14:113, DRB3*02:02:04/02:16/02:18	DR17, DR3, DR11, DR11/DR13, DR14, DR1404/DR14, DR6, DR4/DR6, -, Null, DR52, Undefined	115 bp

	*08:09/08:21/08:35, 13:18, 14:03:01-14:03:02/14:12:01-14:12:02/14:15/14:27/14:40/14:55/14:63/14:67/14:77-14:78/14:84-14:85/14:89	DR8, -, DR13, DR1403/DR14, DR6	160 bp
Mix 13	*03:12, 11:13:01w-11:13:02w/11:17/11:52/11:89, 13:03:01-13:04/13:12:01-13:13/13:21:01-13:21:02/13:30/13:32-13:33:03/13:38/13:48-13:49/13:55/13:58/13:65-13:66:02/13:75/13:81/13:88-13:90/13:93-13:95/13:101/13:108/13:115, 14:01:01-14:01:03/14:05:01-14:05:03/14:07:01-14:08/14:13-14:14/14:18/14:23:01-14:23:03/14:26/14:32:01w-14:32:02w/14:34w/14:35-14:36/14:38/14:42-14:45/14:54-14:56/14:58-14:60/14:62-14:65/14:70/14:72/14:75/14:78/14:81w/14:82/14:85-14:86/14:88/14:90-14:92N/14:95-14:97/14:99/14:101/14:103/14:110/14:112, DRB4*01:02?	DR3, DR11, DR14, -, DR13, DR13/DR11, Undefined, DR6, Null	see below
	*03:12, 13:03:01-13:04/13:12:01-13:13/13:21:01-13:21:02/13:30/13:32-13:33:03/13:38/13:48-13:49/13:55/13:58/13:65-13:66:02/13:75/13:81/13:88-13:90/13:93-13:95/13:101/13:108/13:115, 14:13/14:63/14:65/14:78/14:85	DR3, DR13, -, DR13/DR11, Undefined, DR6, DR14	170 bp
	*11:13:01w-11:13:02w/11:17/11:52/11:89, 14:01:01-14:01:03/14:05:01-14:05:03/14:07:01-14:08/14:14/14:18/14:23:01-14:23:03/14:26/14:32:01w-14:32:02w/14:34w/14:35-14:36/14:38/14:42-14:45/14:54-14:56/14:58-14:60/14:62-14:65/14:70/14:72/14:75/14:81w/14:82/14:86/14:88/14:90-14:92N/14:95-14:97/14:99/14:101/14:103/14:110/14:112, DRB4*01:02?	DR11, DR14, -, Undefined, DR6, Null	210 bp
Mix 14	*01:02:01-01:02:05/01:23/01:26/01:34, 11:01:05/11:01:10/11:04:03/11:06:02/11:13:01-11:13:02/11:17/11:52/11:54:01, 12:04/12:09, 13:01:03/13:76, 14:05:01-14:05:02/14:08/14:11/14:14/14:18/14:23:01-14:23:03/14:34/14:36/14:42-14:44:01/14:45/14:56/14:59/14:64/14:72/14:91/14:95-14:96/14:100, 15:01:03/15:02:06	DR1, -, DR11, DR14, DR12, DR13, Undefined, DR15	105 bp
Mix 15	*11:09/11:40/11:58:01/11:59/11:83/11:87, 13:05:01-13:05:02/13:18/13:26/13:42/13:50:02/13:63, 14:27, 16:08	DR11, -, DR13, DR14, DR6, DR16	130 bp
Mix 16	*03:20, 11:16/11:20/11:40/11:59, 12:05/12:14-12:15, 13:01:01-13:02:05/13:08/13:15-13:16/13:19-13:20/13:27-13:29/13:31-13:32/13:34-13:36/13:39-13:41/13:43/13:51/13:53/13:57/13:59/13:61:01-13:61:02/13:63-13:65/13:67/13:69/13:71-13:74/13:76/13:78-13:80/13:83/13:87/13:91-13:93/13:96/13:98-13:99/13:102-13:105/13:107/13:109/13:111-13:114, 14:16/14:28-14:29/14:57/14:99	DR3, DR11/DR13, DR12, -, Null, DR6, DR14, DR4/DR6	see below
	*11:16/11:20/11:40/11:59, 13:01:01-13:02:05/13:15-13:16/13:20/13:27-13:29/13:31-13:32/13:34-13:36/13:39-13:41/13:43/13:51/13:53/13:59/13:61:01-13:61:02/13:63/13:65/13:67/13:69/13:71/13:73-13:74/13:78-13:80/13:87/13:91-13:93/13:96/13:98-13:99/13:102-13:105/13:109/13:111-13:114	DR11/DR13, -, Null	145 bp
	*03:20, 14:29	DR3, DR14	185 bp
	*13:08/13:19/13:57/13:64/13:72/13:76/13:83/13:107, 14:16/14:57	DR13, -, DR6, DR4/DR6	140 bp
	*12:05/12:14-12:15, 14:28/14:99	DR12, DR14, -	185 bp
Mix 17	*11:16/11:20/11:40/11:59, 13:01:01-13:02:05/13:10/13:15-13:16/13:20/13:27-13:29/13:31-13:32/13:34-13:36/13:39-13:41/13:43/13:51/13:53/13:59/13:61:01/13:63/13:65/13:67/13:69/13:71/13:73-13:74/13:78-13:80/13:85/13:87/13:91-13:93/13:98-13:99/13:102-13:105/13:109/13:111-13:114, 14:19/14:21/14:109	DR11/DR13, -, Null, DR14	145 bp
Mix 18	*03:01:12/03:04:02/03:35, 13:01:05-13:01:06/13:02:03/13:26/13:60w/13:72, 14:05:01/14:05:03/14:18/14:23:03/14:37/14:43-14:45/14:56/14:91/14:96/14:100/14:103, 15:01:01:01w-15:01:03w/15:01:05w-15:01:06w/15:02:01w/15:02:04w/15:02:06w/15:04w-15:11w/15:13w-15:22w/15:24w-15:31w, 16:01:01w-16:05:02w/16:07w-16:13Nw	-, DR3, DR13, DR14, DR6, DR15, DR2, Null, DR16	115 bp
Mix 19	*14:41/14:52	DR14	see below
	*14:52	DR14	210 bp
	*14:41	DR14	135 bp

Mix 20	*03:01:01:01-03:01:06/03:01:08-03:09/03:11:01-03:12/03:13:02-03:37/03:39-03:41/03:43-03:49/03:51-03:57/03:60-03:64, 08:04:02?/08:20, 11:01:01-11:01:07/11:02:01-11:04:04/11:06:01-11:19:02/11:20-11:21/11:23-11:27:02/11:28:01/11:29/11:32-11:46:01/11:47-11:49:01/11:50-11:51/11:53-11:58:01/11:59-11:66/11:68-11:70/11:79/11:84/11:103/11:105/11:107, 13:01:01-13:01:03/13:02:01-13:02:03/13:03:01-13:03:02/13:04-13:12:01/13:13-13:16/13:18-13:21:01/13:22-13:23:01/13:24-13:38/13:40-13:42/13:44/13:46-13:53/13:55-13:61:01/13:62-13:66:01/13:68-13:76/13:80-13:88, 14:02-14:03:02/14:05:01-14:06:02/14:09/14:12:01-14:14/14:17-14:21/14:23:01-14:24/14:27/14:29-14:30/14:33/14:36-14:38/14:40-14:45/14:47/14:51/14:56/14:59/14:63/14:65/14:67/14:77-14:78/14:80-14:81/14:83-14:85/14:89/14:91/14:94-14:96/14:98/14:100-14:103/14:106, DRB3*01:14, DRB4*01:02?	DR17, -, DR18, DR3, DR8, undefined, DR11, DR11/DR13, DR14, DR13/DR11, DR6, DR1403/DR14	see below
	*03:01:01:01-03:01:06/03:01:08-03:09/03:11:01-03:12/03:14-03:37/03:39-03:41/03:43-03:49/03:51-03:57/03:60-03:64, 08:04:02?/08:20, 11:01:01-11:01:07/11:02:01-11:04:04/11:06:01-11:19:02/11:20-11:21/11:23-11:26/11:27:02/11:28:01/11:29/11:32-11:46:01/11:47-11:49:01/11:50-11:51/11:53-11:58:01/11:59-11:66/11:68-11:70/11:79/11:103/11:105/11:107, 13:01:01-13:01:03/13:02:01-13:02:03/13:03:01-13:03:02/13:04-13:12:01/13:13-13:16/13:18-13:21:01/13:22-13:23:01/13:24-13:33:01/13:34-13:38/13:40-13:42/13:44/13:46-13:53/13:55-13:60/13:62-13:66:01/13:68-13:76/13:80-13:88, 14:02-14:03:02/14:05:01-14:06:02/14:09/14:12:01-14:14/14:17-14:21/14:23:01-14:24/14:27/14:29-14:30/14:33/14:36-14:37/14:40-14:45/14:47/14:51/14:56/14:59/14:63/14:65/14:67/14:77-14:78/14:80-14:81/14:83-14:85/14:89/14:91/14:94-14:96/14:98/14:100-14:103/14:106, DRB4*01:02?	DR17, -, DR18, DR3, DR8, undefined, DR11, DR11/DR13, DR14, DR13/DR11, DR6, DR1403/DR14	180 bp
	*03:01:02/03:02:02/03:05:03/03:11:02/03:13:02/03:17/03:24/03:27/03:35, 11:27:01/11:84, 13:33:02-13:33:03/13:61:01, 14:38/14:47/14:98, DRB3*01:14	DR17, DR18, DR3, DR11, -, DR13, DR14	235 bp
Mix 21	*04:20?, 14:39/14:59/14:86/14:96, DRB3*02:15	DR4, DR14, -, Undefined	see below
	*04:20?, 14:39	DR4, DR14	230 bp
	*14:59/14:86/14:96, DRB3*02:15	DR14, -, Undefined	110 bp
Mix 22	*03:38, 11:17/11:52-11:54:02, 13:31/13:46/13:54/13:76-13:77/13:100, 14:01:01-14:01:03/14:05:01-14:05:03/14:07:01-14:08/14:14/14:18/14:23:01-14:23:03/14:26/14:33/14:35-14:36/14:42-14:45/14:48/14:51/14:54/14:56/14:58-14:60/14:62/14:64/14:70/14:72/14:75/14:82/14:86/14:88/14:90-14:92N/14:95-14:97/14:99/14:101/14:110/14:112, DRB3*01:14	-, DR14, DR11, DR13, DR6, Undefined, Null	see below
	*03:38, 13:31/13:46/13:54/13:77/13:100, 14:48, DRB3*01:14	-, DR13, DR11, DR14	175 bp
	*11:17/11:52-11:54:02, 13:76, 14:01:01-14:01:03/14:05:01-14:05:03/14:07:01-14:08/14:14/14:18/14:23:01-14:23:03/14:26/14:33/14:35-14:36/14:42-14:45/14:51/14:54/14:56/14:58-14:60/14:62/14:64/14:70/14:72/14:75/14:82/14:86/14:88/14:90-14:92N/14:95-14:97/14:99/14:101/14:110/14:112	DR14, DR11, DR13, DR6, Undefined, -, Null	225 bp
Mix 23	*08:09/08:21/08:35, 14:15/14:40/14:55/14:62/14:77/14:84	DR8, -, DR14	see below
	*14:62	DR14	100 bp
	*08:09/08:21/08:35, 14:15/14:40/14:55/14:77/14:84	DR8, -, DR14	150 bp
Mix 24	*14:45	DR14	190 bp
Mix 25	*11:13:01-11:13:02, 13:08, 14:04-14:05:01/14:07:01/14:10-14:11/14:14/14:54/14:57/14:82	DR11, DR13, DR1404/DR14, DR4/DR6, -	50 bp
Mix 26	*14:01:01	DR14	50 bp
Mix 27	Negative Control	-	none (440 bp)

w = weak

? = nucleotide sequence information not available for the primer matching sequence

bold: specificities amplified by primer which result in PCR fragments of different sizes

Table 2: Amplification patterns of HLA-DRB1*14 alleles detected by the HLA-DRB1*14 SUBTYPING CTS-PCR-SSP primer mixes (Lot No. DR14L04-1) based on the IMGT/HLA Sequence Database 3.4.0, April 2011

Allele	Serology	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
*14:01:01	DR14	1					6	7	8				12	13									22				26
*14:01:02	DR14	1					6	7	?				12	13									22				
*14:01:03	DR14	1				5	6	7	8				12	13									22				
*14:02	DR14		2				6			9												20					
*14:03:01-14:03:02/14:67/14:89	DR1403/DR14, DR6, -			3			6			9			12									20					
*14:04	DR1404/DR14				4							11	12														25
*14:05:01	DR14	1				5	6		8					13	14				18			20		22			25
*14:05:02	DR14	1				5	6		8					13	14							20		22			
*14:05:03	DR14	1				5	6		8					13					18			20		22			
*14:06:01/14:83	DR14, -		2				6		8													20					
*14:06:02	DR14		2				6															20					
*14:07:01	DR14	1					6	7		9			12	13										22			25
*14:07:02	DR14	1					6	7		9			12	13										22			
*14:08	DR14	1					6		8				12	13	14									22			
*14:09	DR14		2							9													20				
*14:10	DR14										10																25
*14:11	DR14											11	12		14												25
*14:12:01-14:12:02	DR14, -			3			6		8				12										20				
*14:13	DR14		2				6			9				13									20				
*14:14	DR14	1					6			9				13	14								20		22		25
*14:15	-											11	12												23		
*14:16	DR6							7	8								16										
*14:17	DR6		2	3				7	8														20				
*14:18/14:23:03	DR14	1					6		8					13	14					18			20		22		
*14:19	DR14		2	3			6			9									17				20				
*14:20	DR14						6		?														20				
*14:21	DR14		2	3				7	8										17				20				
*14:22	DR14							7		9			12														
*14:23:01	DR14	1					6		8					13	14								20		22		
*14:23:02	DR14	1					6		8				12	13	14								20		22		
*14:24/14:94	DR14						6			9													20				
*14:25/14:69	DR6, -							7		9																	
*14:26	DR14	1			4		6	7	8				12	13											22		
*14:27	DR14			3			6			9			12				15						20				
*14:28	DR14				4							11	12														
*14:29	DR14		2				6		8														20				
*14:30	DR6		2	3				7		9													20				
*14:31/14:50/14:76/14:79/14:93/14:107	DR14, -				4								12														
*14:32:01-14:32:02	DR14	w						7	8				12	w													
*14:33	DR6		2	3			6	7	8														20		22		
*14:34	DR14	w							8				12	w	14												
*14:35	DR14	1		3			6	7	8				12	13											22		
*14:36	DR14	1					6			9			12	13	14								20		22		
*14:37	DR14								8											18			20				
*14:38	DR14	1						7	8				12	13									20				

Allele	Serology	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
*14:39	DR14												12									21					
*14:40/14:77	DR14, -			3			6			9			12									20			23		
*14:41	DR14						6			9										19	20						
*14:42	Undefined	1		3			6	7		9				13	14						20			22			
*14:43	DR14	1				5	6	7	8					13	14				18		20		22				
*14:44:01	DR14	1				5	6			9				13	14				18		20		22				
*14:44:02	DR14	1				5	6			9				13					18		20		22				
*14:45	DR14	1				5	6		8					13	14				18		20		22		24		
*14:46	DR14		2																								
*14:47	DR14		2				6		8	9											20						
*14:48	DR14		2				6			9													22				
*14:49	DR14						6	7		9			12														
*14:51	DR14		2				6			9											20		22				
*14:52	DR14		2																	19							
*14:53	DR14			3				7		9																	
*14:54/14:82	DR14, -	1					6	7	8				12	13									22			25	
*14:55	DR14	1		3				7	8				12	13										23			
*14:56/14:91	DR14, -	1				5	6		8					13	14				18		20		22				
*14:57	DR4/DR6										10		12				16										25
*14:58	DR14	1					6	7	8					13									22				
*14:59	DR14	1					6		8					13	14						20	21	22				
*14:60	DR14	1					6	7	8		10		12	13								22					
*14:61/14:113	DR14, -												12														
*14:62	DR14	1					6	7	8				12	13									22		23		
*14:63/14:85	DR6, -			3			6			9			12	13							20						
*14:64/14:72	DR14, -	1		3			6	7	8					13	14								22				
*14:65	DR6	w		3				7	8					13							20						
*14:68/14:71/14:73	DR14, -				4							11	12														
*14:70/14:75/14:88/14:90/14:92N/14:97/ 14:110/14:112	-, Null	1					6	7	8				12	13									22				
*14:74/14:87/14:104-14:105/14:111	-							7	8				12														
*14:78	-			3			6		8				12	13								20					
*14:80	-		2						8													20					
*14:81	-	w					6		8					w								20					
*14:84	-			3					8				12									20			23		
*14:86	-	1					6	7	8				12	13								21	22				
*14:95	-	1		3			6	7	8					13	14							20		22			
*14:96	-	1				5	6		8					13	14				18		20	21	22				
*14:98	-						6		8	9												20					
*14:99	-	1					6	7	8				12	13			16						22				
*14:100	-								8						14				18			20					
*14:101	-	1					6		8					13								20		22			
*14:102	-			3						9												20					
*14:103	-	1				5			8					13					18			20					
*14:106	-						6		8													20					
*14:108	-		2				6		8																		
*14:109	-		2	3			6			9								17									

w = weak

? = nucleotide sequence information not available for the primer matching sequence

Underlined alleles = new HLA-DRB1*14 alleles that have the same amplification patterns as the previously known HLA-DRB1*14

Table 3: Amplification patterns of HLA-DRB1*14 and other HLA-DRB alleles detected by the HLA-DRB1*14 SUBTYPING CTS-PCR-SSP primer mixes (Lot No. DR14L04-1) based on the IMGT/HLA Sequence Database 3.4.0, April 2011

Allele	Serology	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
*01:02:01-01:02:05/01:23/01:26/01:34, 12:09	DR1, -, DR12														14												
*03:01:01:01-03:01:04/03:01:08-03:01:10/03:01:13/03:04:01/03:07/03:11:01-03:11:02/03:13:02/03:15/03:19/03:21-03:25/03:30/03:32-03:34/03:36/03:39/03:43-03:49/03:51-03:52/03:54-03:56/03:64, 11:02:01/11:03-11:04:02/11:04:04/11:06:01/11:07/11:18/11:21/11:25/11:34-11:36/11:38/11:42/11:44/11:47/11:55/11:57/11:63/11:65:01-11:65:02/11:70/11:84, 13:06/13:09/13:11:01-13:11:02/13:22/13:24/13:44/13:52/13:68	DR17, -, DR3, DR11, DR13, Undefined			3				7	8												20						
*03:01:05/03:06/03:26/03:28/03:31/03:37/03:60-03:62, 11:02:02/11:41/11:43/11:48/11:50/11:56/11:60, 13:70/13:84	DR17, DR3, -, DR11, DR13								8												20						
*03:01:06/03:08/03:18, 11:46:01	DR17, DR3, DR11			3				7	8				12								20						
*03:01:07/03:13:01/03:58-03:59, 11:04:05-11:04:07/11:46:02/11:58:02/11:76-11:78/11:85/11:92/11:98/11:102, 13:106/13:110	DR17, DR3, -, DR11			3				7	8																		
*03:01:11/03:57/03:63	-			3				7													20						
*03:01:12/03:04:02	-			3				7	8										18		20						
*03:02:01/03:53, 14:24/14:94	DR18, -, DR14						6			9											20						
*03:02:02/03:27, 14:98	DR18, DR3, -						6		8	9											20						
*03:03, 14:106	DR18, -						6		8												20						
*03:05:01-03:05:02/03:09/03:14/03:40, 11:01:01-11:01:04/11:01:06/11:08:01-11:08:02/11:11:01-11:12:02/11:14:01-11:15/11:19:01-11:19:02/11:24/11:27:02/11:28:01/11:29/11:32-11:33/11:45/11:49:01/11:51/11:61-11:62/11:64/11:68-11:69/11:79/11:103/11:105, 13:14:01-13:14:03/13:23:01/13:50:01/13:56/13:62/13:82/13:86	DR3, -, DR11, DR13, DR6			3				7		9											20						
*03:05:03	DR3			3				7	8	9											20						
*03:10	DR3			3				7	8				12														
*03:12	DR3			3				7	?					13							20						
*03:16	DR3								?												20						
*03:17	DR3								8	9											20						
*03:20, 13:64/13:83	DR3, DR13, -			3				7	8								16				20						
*03:29	DR3			3			6	7		9											20						
*03:35	DR3								8	9									18		20						
*03:38	-						6			9													22				
*03:41, 11:01:07/11:37/11:39/11:66/11:107, 13:07:01-13:07:02	-, DR11, DR13									9											20						
*04:20	DR4																					?					
*04:62/04:69	DR4, -										10																
*07:06	DR7				4																						
*08:01:01-08:04:01/08:04:03-08:04:07/08:06-08:07/08:10-08:17/08:19/08:22-08:23/08:26-08:34/08:36-08:39/08:41-08:42/08:44-08:45, 11:67	DR8, -, DR8/DR11, Undefined											11															

Allele	Serology	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
*08:04:02	DR8			?								?									?						
*08:08	DR8				4							11															
*08:09/08:21/08:35, 14:15	DR8, -											11	12												23		
*08:20	undefined			3					8												20						
*11:01:05	DR11			3				7		9					14						20						
*11:01:08-11:01:09/11:01:12-11:01:13/11:28:02/11:31/11:74:01/11:80-11:82/11:90-11:91/11:94/11:96-11:97/11:99-11:101/11:106/11:108, 13:23:02/13:97, 14:53	DR11, -, DR13/14			3				7		9																	
*11:01:10	DR11			3				7		9					14												
*11:01:11/11:19:03/11:27:03/11:49:02/11:72-11:73/11:74:02/11:86/11:93	DR11, -			3				7																			
*11:04:03/11:06:02	DR11			3				7	8						14						20						
*11:09	DR11			3				7		9			12			15					20						
*11:10:01-11:10:02	DR11			3				7		9			12								20						
*11:13:01-11:13:02	DR11	w		3				7	8				12	w	14						20					25	
*11:16	DR11/DR13			3				7	8				12				16	17			20						
*11:17, 14:23:02	DR14	1					6		8				12	13	14						20		22				
*11:20	DR11			3				7		9							16	17			20						
*11:23/11:26, 13:25	DR11			3				7		?											20						
*11:27:01	DR11			3				7	8	?											20						
*11:40	DR11			3				7	?				12			15	16	17			20						
*11:52, 14:08	DR11, DR14	1					6		8				12	13	14								22				
*11:53	DR11			3			6	7		9											20		22				
*11:54:01	DR11			3			6	7	8						14						20		22				
*11:54:02	DR11			3			6	7	8												20		22				
*11:58:01, 13:42	DR11, DR6			3				7	8							15					20						
*11:59	DR11			3				7	8				12			15	16	17			20						
*11:75	-									9																	
*11:83	-								8							15											
*11:87	-			3				7		9						15											
*11:88	-								8																		
*11:89	-	1		3				7	8						13												
*12:04	DR12											11			14												
*12:05/12:14-12:15	DR12																16										
*13:01:01-13:01:02/13:20/13:27-13:28/13:59/13:61:01/13:69/13:71/13:87	DR13, -			3				7	8								16	17			20						
*13:01:03	DR13			3				7	8						14		16	17			20						
*13:01:04/13:01:09	DR13, -								8								16	17									
*13:01:05-13:01:06	DR13			3				7	8								16	17	18								
*13:01:07/13:78-13:79/13:91-13:92/13:98/13:102/13:105/13:111/13:113N-13:114	-, DR13, Null			3				7	8								16	17									
*13:01:08/13:02:04/13:109	-			3				7									16	17									
*13:02:01-13:02:02/13:29/13:34/13:41/13:73-13:74	DR13			3				7		9							16	17			20						
*13:02:03	DR13			3				7		9							16	17	18		20						
*13:02:05/13:99	-									9							16	17									
*13:03:01-13:03:02/13:13/13:55	DR13, Undefined			3						9				13							20						
*13:03:03-13:03:06/13:89-13:90/13:95/13:101/13:115	DR13, -			3										13													
*13:04/13:75	DR13, Undefined			3				7	8					13							20						

Allele	Serology	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
*13:05:01-13:05:02/13:50:02	DR13, DR11			3				7	8	9						15					20						
*13:08	DR13								8								16				20					25	
*13:10, 14:21	DR13, DR14		2	3				7	8									17			20						
*13:12:01/13:38/13:49	DR13, DR6									9				13							20						
*13:12:02	-													13													
*13:15	DR13			3			6	7	8								16	17			20						
*13:16	DR13			3				7									16	17			20						
*13:18	DR13			3				7	8				12			15					20						
*13:19	DR13						6		8								16				20						
*13:21:01/13:30/13:66:01	DR13/DR11, Undefined			3				7		9				13							20						
*13:21:02/13:66:02	DR13/DR11, -			3				7						13													
*13:26	DR14						6			9						15			18		20						
*13:31	DR13			3				7		9							16	17			20		22				
*13:32	DR13								8					13			16	17			20						
*13:33:01	DR13			3						?				13							20						
*13:33:02	DR13			3					8	9				13							20						
*13:33:03/13:81	DR13, -			3					8					13							20						
*13:35/13:40/13:51/13:80	DR13, -								8								16	17			20						
*13:36	DR13									9							16	17			20						
*13:37/13:47, 14:102	DR13, Undefined, -			3						9											20						
*13:39	DR13			3				7		9							16	17									
*13:43	DR13			3				7	8				12				16	17									
*13:45	DR13			3				7		?																	
*13:46	DR11			3				7		9											20		22				
*13:48/13:58	DR13								8					13							20						
*13:53	DR13						6		8								16	17			20						
*13:54/13:77	DR14, -			3				7	8														22				
*13:57	DR13			3			6	7	8								16				20						
*13:60	DR6									9									w		20						
*13:61:02	-			3				7	8								16										
*13:63	DR13			3				7		9						15	16	17			20						
*13:65	DR13									9				13			16	17			20						
*13:67/13:103/13:112	DR13, -																16	17									
*13:72	DR13								8								16		18		20						
*13:76	DR13						6		8						14		16				20		22				
*13:85, 14:19	-, DR14		2	3			6			9											20						
*13:88	-			3										13							20						
*13:93	-			3				7	8					13			16	17									
*13:94	-			3					8					13													
*13:96/13:107	-			3				7		9							16										
*13:100	-			3				7		9													22				
*13:104	-			3			6	7		9							16	17									
*13:108	-								8					13													
*14:01:01	DR14	1					6	7	8				12	13									22				26
*14:01:02	DR14	1					6	7	?				12	13									22				
*14:01:03	DR14	1				5	6	7	8				12	13									22				
*14:02	DR14		2				6			9											20						
*14:03:01-14:03:02/14:67/14:89	DR1403/DR14, DR6, -			3			6			9			12								20						

Allele	Serology	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
*14:04	DR1404/DR14				4							11	12													25	
*14:05:01	DR14	1				5	6		8					13	14				18		20		22			25	
*14:05:02	DR14	1				5	6		8					13	14						20		22				
*14:05:03	DR14	1				5	6		8					13					18		20		22				
*14:06:01/14:83	DR14, -		2				6		8												20						
*14:06:02	DR14		2				6														20						
*14:07:01	DR14	1					6	7		9			12	13									22			25	
*14:07:02	DR14	1					6	7		9			12	13									22				
*14:09	DR14		2							9											20						
*14:10	DR14										10		12													25	
*14:11	DR14											11	12		14											25	
*14:12:01-14:12:02	DR14, -			3			6		8				12								20						
*14:13	DR14		2				6			9				13							20						
*14:14	DR14	1					6			9				13	14						20		22			25	
*14:16	DR6							7	8				12				16										
*14:17	DR6		2	3				7	8												20						
*14:18/14:23:03	DR14	1					6		8					13	14				18		20		22				
*14:20	DR14						6		?												20						
*14:22	DR14							7		9			12														
*14:23:01	DR14	1					6		8					13	14						20		22				
*14:25/14:69	DR6, -							7		9																	
*14:26	DR14	1			4		6	7	8				12	13									22				
*14:27	DR14			3			6			9			12			15					20						
*14:28	DR14				4							11	12				16										
*14:29	DR14		2				6		8								16				20						
*14:30	DR6		2	3				7		9											20						
*14:31/14:50/14:76/14:79/14:93/14:107	DR14, -				4								12														
*14:32:01-14:32:02	DR14	w						7	8				12	w													
*14:33	DR6		2	3			6	7	8												20		22				
*14:34	DR14	w							8				12	w	14												
*14:35	DR14	1		3			6	7	8				12	13									22				
*14:36	DR14	1					6			9			12	13	14						20		22				
*14:37	DR14								8										18		20						
*14:38	DR14	1						7	8				12	13							20						
*14:39	DR14												12									21					
*14:40/14:77	DR14, -			3			6			9			12								20			23			
*14:41	DR14						6			9										19	20						
*14:42	Undefined	1		3			6	7		9				13	14						20		22				
*14:43	DR14	1				5	6	7	8					13	14				18		20		22				
*14:44:01	DR14	1				5	6			9				13	14				18		20		22				
*14:44:02	DR14	1				5	6			9				13					18		20		22				
*14:45	DR14	1				5	6		8					13	14				18		20		22		24		
*14:46	DR14		2																								
*14:47	DR14		2				6		8	9											20						
*14:48	DR14		2				6			9													22				
*14:49	DR14						6	7		9			12														
*14:51	DR14		2				6			9											20		22				
*14:52	DR14		2																		19						
*14:54/14:82	DR14, -	1					6	7	8				12	13									22			25	
*14:55	DR14	1		3				7	8				12	13										23			
*14:56/14:91	DR14, -	1				5	6		8					13	14				18		20		22				

Allele	Serology	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
*14:57	DR4/DR6										10		12				16										25	
*14:58	DR14	1					6	7	8					13									22					
*14:59	DR14	1					6	7	8					13	14						20	21	22					
*14:60	DR14	1					6	7	8		10		12	13									22					
*14:61/14:113, DRB3*02:02:04/02:16/02:18	DR14, -, DR52, Undefined												12															
*14:62	DR14	1					6	7	8				12	13									22	23				
*14:63/14:85	DR6, -			3			6			9			12	13							20							
*14:64/14:72	DR14, -	1		3			6	7	8					13	14								22					
*14:65	DR6	w		3				7	8					13							20							
*14:68/14:71/14:73	DR14, -				4							11	12															
*14:70/14:75/14:88/14:90/14:92N/14:97/14:110/14:112	-, Null	1					6	7	8				12	13									22					
*14:74/14:87/14:104-14:105/14:111	-							7	8				12															
*14:78	-			3			6		8				12	13							20							
*14:80	-		2						8												20							
*14:81	-	w					6		8					w							20							
*14:84	-			3					8				12								20			23				
*14:86	-	1					6	7	8				12	13								21	22					
*14:95	-	1		3			6	7	8					13	14						20		22					
*14:96	-	1				5	6	7	8					13	14				18		20	21	22					
*14:99	-	1					6	7	8				12	13			16						22					
*14:100	-								8						14				18		20							
*14:101	-	1					6		8					13							20		22					
*14:103	-	1				5			8					13					18		20							
*14:108	-		2				6		8																			
*14:109	-		2	3			6			9								17										
*15:01:01:01-15:01:02/15:01:05-15:01:06/15:02:01/15:02:04/15:04-15:11/15:13-15:22/15:24-15:31, 16:01:01-16:05:02/16:07/16:09-16:13N	DR15, DR2, Null, -, DR16																		w									
*15:01:03/15:02:06	DR15														14				w									
*16:08	DR16															15			w									
DRB3*01:14	-								8	9											20		22					
DRB3*02:15	Undefined																					21						
DRB4*01:02	Undefined	?				?			?					?							?							

w = weak

? = nucleotide sequence information not available for the primer matching sequence

Underlined alleles = new HLA-DRB1*14 alleles that have the same amplification patterns as the previously known HLA-DRB1*14