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Lot No.: A12-4 B12-0 C09-2



CTS Collaborative Transplant Study

WORKING INSTRUCTION

HLA-A*/-B*/-Cw* CTS-PCR-SSP TRAY KITS

LOCUS- AND LOT-SPECIFIC MANUAL

To be applied to the following product:

| Product No. | Description | |
|-------------|--------------------------------------|---|
| 120 | HLA-A*/-B*/-Cw* CTS-PCR-SSP TRAY KIT |   |

HLA-A TYPING

Main differences between lot A12-4 (the current lot) and lot A12-3

- The primer composition of mix 1, 3 and 9 has been changed. However, there are no differences in mix specificities or PCR product sizes.

HLA-B TYPING

Main differences between lot B11-3 and lot B11-2

- Mix 20 has been modified. The allele specificity has changed. As a consequence of that, the amplification patterns of several HLA-B alleles (e.g. B*1506/1511/1515/ 1525/1536/1556/1576/1577) have been altered. Please specifically note the new amplification pattern of HLA-B*1511 (serologically B75). Mix 20 now generates only one (relatively small) fragment which is 140 bp and which should be carefully distinguished from the amplification control band (89 bp).

Main differences between Lot B12-0 (the current lot) and Lot B11-3:

- Almost every mix covers new alleles.
- Mix 10 has been altered to distinguish the B*37 alleles (including B*3706) from the common B*5108 allele. Mix 10 no longer detects B*0832, B*3538/87, B*4406, B*5108/20/36/44N.
- Mix 25 now also detects B*4406.

HLA-C TYPING

Main differences between lot C09-2 (the current lot) and lot C09-1

- The mixes 3, 4 and 5 have been modified to cover new HLA-C alleles published by the IMGT/HLA Database Release 2.21.0.
- The total number of mixes remains unchanged.

Introduction

- Intended use: This kit reveals a low/intermediate resolution typing of HLA-A, HLA-B and HLA-C by the PCR-SSP method.
- Allele coverage: IMGT/HLA Sequence Database Release 2.16.0, January 2007 for HLA-A (except for HLA-A*0318/0323 and A*110202/24); IMGT/HLA Sequence Database Release 2.24.0, January 2009 for HLA-B (except for HLA-B*0826, B*1322, B*1408, B*3817, B*3930/34/36 and B*5145); IMGT/HLA Sequence Database Release 2.21.0, April 2008 for HLA-C (except for HLA-Cw*0114 and Cw*0816). The alleles which are not covered are considered to be rare and can be detected by e. g. sequencing (you may contact us for further information on this topic).
- This manual is only valid for Lot No. **A12-4 B12-0 C09-2**.
- This manual should be used together with the Main Manual (General Information) '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 | 4 |
| 2. | Materials, Reagents and Equipment not supplied | 4 |
| 3. | Sample Requirements, PCR and Gel Electrophoresis | 4 |
| 4. | Result Evaluation | 4 |
| 5. | Interpretation Hints | 4 |
| 6. | Troubleshooting | 7 |
| 7. | Precaution | 7 |
| 8. | Contact | 7 |
| Appendix | Table 1 (HLA-A) | 8 |
| | Table 2 (HLA-B) | 10 |
| | Table 3 (HLA-C) | 15 |
| | Table 4 (HLA-A) | 17 |
| | Table 5 (HLA-B) | 19 |
| | Table 6 (HLA-C) | 25 |

1. Kit Composition

- Number of PCR primer mixes per test: 96, of which:
 - 24 allele-specific mixes for HLA-A typing
 - 48 allele-specific mixes for HLA-B typing
 - 23 allele-specific mixes for HLA-C typing
 - 1 negative control mix
- Number of tests per tray: 1
- Number of trays per kit: 10
- The primer mixes are aliquoted and lyophilized in thin-walled, green PCR-trays.
- PCR buffer: 3 ml of 7.5% 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 base pair size of the PCR product against the Primer Mix Specificity Table(s) (Appendix / Table 1, 2 and 3) to confirm the correct product size.
- 4.2 Use the Typing Table(s) (Appendix / Table 4, 5 and 6) to make the allele assignments 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 also 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

HLA-A Locus:

- The following mixes will give **short** PCR products (< 200 bp): **mixes 17, 20, 23 and 24**. These PCR products might be difficult to be distinguished from the 89 bp amplification control (internal positive control) PCR product. In general, the allele-specific product will give a much stronger signal than that of the amplification control and will not migrate as far into the gel as the amplification control band. If you are not sure whether the (strong) signal represents an allele-specific product or just the amplification control, you might let the gel run for an additional 15 minutes at a lower voltage. By this way, the allele-specific band can be separated from the amplification control band and you will be able to clearly see a double signal at this position: a strong allele-specific band and - compared to that - a weaker shorter amplification control band. Since mix 5 corresponds to the frequent allele A*23, mix 17 to A*31 and mix 23 to A*02, it is recommended to always start the interpretation by checking these reactions very carefully first!
- Some mixes contain specific primers which may give rise to **PCR fragments of two or more different sizes** simultaneously (see Table 1). Please pay special attention to the following critical situations:
 - Mix 8** will amplify A*2501/02-06 at 400 bp. In addition, mix 8 will amplify A*3001-04/06-19 and A*0252 at 550 bp.
 - Mix 11** will amplify A*021701/02, A*2304, A*2403/10/18/22/33, A*2907 and A*9208 at 245 bp. A*2403 (serologically A2403) will be amplified only in mix 11 with a strong specific band. In addition, mix 11 will amplify A*3401/05 at 580 bp.
 - Mix 16** will amplify A*3001-04/06-11/13-17/19 at 570 bp and A*0112/19, A*0310, A*3202 at 720 bp.
 - Mix 18** will amplify A*3201-03/05-14, A*2303, A*2913, A*3107/08/10 at 410 bp. In addition, mix 18 will amplify A*2418 and A*3204 at 515 bp.
 - Mix 24** will amplify A*8001 at 170 bp and A*4301 at 445 bp.

HLA-B Locus:

- The following mixes will give **short** allele-specific PCR products (<200 bp): **mixes 5, 9, 20, 43, and 47**. These PCR products might be difficult to be distinguished from the 89 bp amplification control (internal positive control) PCR product. In general, the allele-specific product will give a much stronger signal than that of the amplification control and will not migrate as far into the gel as the amplification control band. If you are not sure whether the (strong) signal represents an allele-specific product or just the amplification control, you might let the gel run for an additional 15 minutes at a lower voltage. By this way, the allele-specific band can be separated from the amplification control band and you will be able to clearly see a double signal at this position: a strong allele-specific band and - compared to that - a weaker shorter amplification control band. Since three of these mixes correspond to quite frequent alleles (B*18 and B*35 = mix 5; B*27 = mix 9; B*15(62) = mix 43), it is recommended to start your evaluation by checking these four reactions very carefully first!
- Some HLA-B* mixes will amplify **two or even three fragments of different sizes** (e. g. mixes 9, 10, 15, 19, 25 and 35). Mixes with 2 fragments of almost the same size are not mentioned here.
- **Mix 7**
Some HLA-A specificities will cause a positive reaction with this mix
- **Mix 9**
All HLA-B*27 specificities except B*2712, 2716, 2718, 2723, 2726, 2729, 2731, 2739 and B* 2744

will amplify the **short** fragment at 155 bp. All B*27 specificities except B* 2706, 2707, 2711, 2720, 2721, 2724, 2727, 2733, 2734, 2735, 2743 as well as B*47010101-05 will give an **additional** positive signal at 525 bp.

- **Special notes to HLA-B*07**

The common HLA-B*07 alleles react positively with mix 1 and mix 28. Some HLA-B*07 alleles may cause additional weakly positive reactions with mix 24, especially if high amounts of Taq polymerase or high DNA-concentrations are used.

- **Special notes to HLA-B* 13**

B*1301 reacts positively with **mix 3**, whereas **B*1302** is amplified by **mix 3 and mix 34**.

The rare alleles **B*1303 and B*1304** can only be detected by **mix 34**.

Mix 34 may show **different PCR products for B*13**:

- **B*1304** will amplify **a smaller and a larger fragment** (425bp and 485bp).

- **B*130201/03/08Q/09/14-16/18/19** amplify **a smaller fragment** (425bp).

- **B*1310** amplifies **a larger fragment** (485bp).

HLA-C Locus:

- HLA-Cw*08 positive individuals give an allele-specific amplification band which is 165 bp long (mix 13). This band may be difficult to distinguish from the amplification control (internal positive control) band (89 bp). In general, the HLA-Cw*08-specific product will give a much stronger signal than that of the control band and it will not have migrated as far into the gel as the control band. By letting the gel run for additional 15 minutes at a lower voltage, the specific band will be separated from the amplification control band, and you will be able to clearly see a double signal at this position: a strong HLA-Cw*08-specific band and a weaker shorter amplification control band.
- The most common HLA-Cw*07 alleles will be detected by **two** PCR-SSP mixes, mix 11 and mix 12. HLA-Cw*0704/0711/0712/0745 are amplified by mix 11 with usual intensity and weakly by mix 12.
- PCR-SSP mix no. 5, 6, 12, 16 and 20 will also detect some HLA-B specificities (most of them are considered to be rare). Please take this into consideration when interpreting your results.

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:

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Hien Tran, M.D.

Table 1: Sizes of the PCR products and allele specificities for each HLA-A* CTS-PCR-SSP primer mix (**Lot-No A12-4**) based on IMGT/HLA Sequence Database Release 2.16.0, January 2007

Amplification Control (Internal Positive Control): 89 base pairs (bp)

| Position on Tray | Primer mix | Allele specificity | Serology | Product size (bp) |
|------------------|-------------|---|--|-------------------|
| H1 | MIX 1 A12-4 | A*01010101-04N/06-20 | A1, Null, - | 650 |
| G1 | MIX 2 A12-0 | A*1117, A*3601-04 | -, A36 | 580 |
| F1 | MIX 3 A12-4 | A*02010101-22/24-3501/36-47/49/51/53N/54/56-59/61-63/66-79/81-87/89-97/99, A*9201/02/04/06-09 | A2, A203, -, A210, Null | 455 |
| E1 | MIX 4 A12-2 | A*03010101-09/11N-17/19-22/25/26, A*1125, A*3204, A*3602: | A3, Null, - | see below |
| | | A*0305/06, A*1125 | - | 555 |
| | | A*03010101-04/07-09/11N-17/19-22/25/26, A*3204, A*3602 | A3, Null, - | 580 |
| D1 | MIX 5 A12-0 | A*2301-14, A*2424, A*2907 | A23(9), -, Null | 195 |
| C1 | MIX 6 A12-0 | A*0246/48/70, A*2301/02/04-08N/10-14, A*24020101-07/09N-11N/13-15/17-20/22/23/25-28/30/32-41/43-66/68, A*3108: | -, A23(9), Null, A24(9), Low A24, A9 | see below |
| | | A*2417/41/62, A*3108 | - | 435 |
| | | A*0246/48/70, A*2301/02/04-08N/10-14, A*24020101-07/09N-11N/13-15/17-20/22/23/25-28/30/32-41/43-66/68 | -, A23(9), Null, A24(9), Low A24, A9 | 470 |
| B1 | MIX 7 A12-0 | A*24020101-0206/0208-0211/0213-0302/05/07-11N/14/15/17/20/21/23/25-27/29-31/33-43/45N-47/48N?/49-59/62-64/66-68 | A24(9), Low A24, Null, A9, - | 510 |
| A1 | MIX 8 A12-0 | A*0252, A*250101/0102w/02-06, A*300101-04/06-19: | -, A25(10), A10, A30(19) | see below |
| | | A*0252, A*300101-04/06-19 | -, A30(19) | 555 |
| | | A*250101/0102w/02-06 | A25(10), A10, - | 405 |
| H2 | MIX 9 A12-4 | A*250101-06, A*260101-18/20-30/32-34, A*3401-08, A*6601-06: | A25(10), A10, -, A26(10), Null, A34(10), A66(10) | see below |
| | | A*260701/0702 | A26(10) | 450 |
| | | A*250101-06, A*260101-06/08-18/20-30/32-34, A*3401-08, A*6601-06 | A25(10), A10, -, A26(10), Null, A34(10), A66(10) | 445 |
| G2 | MIX10 A12-0 | A*260101/0103-32/34, A*4301: | A26(10), -, A10, Null, A43 | see below |
| | | A*2603/06/21/30 | A26(10), - | 410 |
| | | A*260101/0103-02/04/05/0701-20/22-29/31/32/34, A*4301 | A26(10), -, A10, Null, A43 | 410 |
| F2 | MIX11 A12-0 | A*021701/1702, A*2304, A*240301/0302/10/18/22/33, A*2907, A*3401/05, A*9208: | A2, -, Low A24, A9, A34(10) | see below |
| | | A*3401/05 | A34(10), - | 585 |
| | | A*021701/1702, A*2304, A*240301/0302/10/18/22/33, A*2907, A*9208 | A2, -, Low A24, A9 | 245 |

| Position on Tray | Primer mix | Allele specificity | Serology | Product size (bp) |
|------------------|-------------|---|------------------------------------|-------------------|
| E2 | MIX12 A12-0 | A*2502, A*2613/19/33, A*3401/05/06, A*6601/02/04/06 | A10, -, A34(10), A66(10) | 415 |
| D2 | MIX13 A12-2 | A*0324, A*1110, A*3402-04/07/08 | -, A34(10) | 385 |
| C2 | MIX14 A12-0 | A*0212/13/19/27/37/38/44/49/54, A*0302w/10, A*110101-0201/03-16/18-22/23w/26-29, A*2419/28/44, A*6809/26/28 | A2, -, A3, A11, Null, A69(28) | 520 |
| B2 | MIX15 A12-0 | A*2303, A*29010101-12/14-16, A*3107/08/10, A*3203, A*7410 | -, A29(19), Null | 430 |
| A2 | Mix16 A12-0 | A*0112/19, A*0310, A*300101-04/06-11/13-17/19, A*3202: | -, A30(19), A32(19) | see below |
| | | A*0112/19, A*0310, A*3202 | -, A32(19) | 725 |
| | | A*300101-04/06-11/13-17/19 | A30(19), - | 570 |
| H3 | MIX17 A12-0 | A*2914, A*310102-07/09-15 | -, A31(19), Null | 185 |
| G3 | MIX18 A12-0 | A*2303, A*2418/48N?, A*2913, A*3107/08/10, A*3201-14: | -, Null, A32(19) | see below |
| | | A*2303, A*2913, A*3107/08/10, A*3201-03/05-14 | -, A32(19) | 410 |
| | | A*2418/48N?, A*3204 | -, Null | 520 |
| F3 | MIX19 A12-0 | A*0265, A*3301/0301-09, A*7404 | -, A33(19) | 470 |
| E3 | MIX20 A12-0 | A*7401-09/11/12N | A74(19), A19, -, Null | 160 |
| D3 | MIX21 A12-3 | A*020109/50, A*2505, A*680101-36, A*6901 | A2, -, A68(28), A28, A69(28), Null | 645 |
| C3 | MIX22 A12-0 | A*0234-3502/56/62/78, A*6901, A*9203 | -, A69(28) | 390 |
| B3 | MIX23 A12-0 | A*02010101-0108/0110/0111/0112w/02-22/24-3501/3502w/36-77/79-97/99, A*240206, A*3007w/13w/16w, A*9201-04/06-09: | A2, A203, -, A210, Null, A24(9) | see below |
| | | A*0250 | - | 205/225 |
| | | A*02010101-0108/0110/0111/0112w/02-22/24-3501/36-44/47/49/51-54/57-60/62-77/79-91/93-97/99, A*9201/02/04/06-09 | A2, A203, -, A210, Null | 135 |
| | | A*02010101-0108/0110/0111/0112w/02-07/09-19/21/22/24-3501/3502w/36-49/51-54/57-61/63-77/79-97/99, A*240206, A*3007w, A*9201/02/04/06-09 | A2, A203, -, A210, Null, A24(9) | 165 |
| | | A*02010101-0102/0104-0108/0110/0111/0112w/02-10/12-22/24-34/36-47/49/51-68/70-77/79/80/82N-86/88N/89/91-97/99, A*3013w/16w, A*9201-04/06-09 | A2, A203, -, A210, Null | 190 |
| A3 | MIX24 A12-0 | A*4301, A*8001: | A43, A80 | see below |
| | | A*8001 | A80 | 170 |
| | | A*4301 | A43 | 445 |

w = weak

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

bold: mixes which result in PCR fragments of different sizes (the specificities are first indicated all in one row, then split into groups in the following rows depending on the fragment size)

Table 2: Sizes of the PCR products and allele specificities of each HLA-B* CTS- PCR-SSP primer mix (**Lot-No B12-0**)

based on IMGT/HLA Sequence Database Release 2.24.0, January 2009

Amplification control (internal positive control): 89 base pairs (bp)

| Position on tray | Primer Mix | Allele specificity | Serology | Product size (bp) |
|------------------|------------|---|--|-------------------|
| H4 | Mix 1 | B*070201-07/08/09-1802/20-32/34-39/41-52/55-59/61-68, B*3566, B*4025, B*420501/0502w, B*4606, B*4806, B*8101-04N, Cw*0223, Cw*0738 | B7, B703, -, Null, B81 | see below |
| | | B*070201-07/08/09-12/14-1802/20-32/34-39/41-52/55-59/61-68, B*3566, B*4025, B*420501/0502w, B*4806, B*8101-04N | B7, B703, -, Null, B81 | 625 |
| | | B*0713, B*4606, Cw*0223, Cw*0738 | - | 610 |
| G4 | Mix 2 | B*0729, B*080101-02/03/04-25/27-38, B*3912, B*4449, B*9542 | -, B8, Null, B39(16) | see below |
| | | B*0809 | - | 540 |
| | | B*0729, B*080101-02/03/04-08N/10-25/27-38, B*3912, B*4449, B*9542 | -, B8, Null, B39(16) | 555 |
| F4 | Mix 3 | B*1301-0204/06-21/23 | B13, -, Null | 580 |
| E4 | Mix 4 | B*180101-15/17N-25/27/28/30-32, B*352002 | B18, -, Null, B35 | 460 |
| D4 | Mix 5 | B*0765, B*0832, B*180101-08/10-15/17N-32, B*350101-0801/0803-18/2001-24/28-45/48/50-55/57-62/64-72/74-94, B*3711/14, B*391901/1902, B*5606, B*7801-05 | -, B18, Null, B35, B78 | 135 |
| C4 | Mix 6 | B*350101-0402/05-0902/11/1401-15/17-19/21/23-25/27/29/30/32-38/40N-42/45-50/52-58/62/64-66/6801/6802/70/71/74/75/77/78/81/84/89-94, B*530101-06/08/10-16 | -, B35, Null, B53 | 400 |
| B4 | Mix 7 | A*250101-08, A*260101-06/08-18/20/21/23-30/33-37, A*340101/0102/05/06, A*6601-08, A*68020101-0202/15/18N/23/27/28/31/34/40/44, B*0712/14w/1801/1802w, B*1502/13/21/44/80w/88/89, B*350101-0103/0104w/0105-0403/06-0802/0803w/0901/0902/11/12w/1401-15/18-21/23-27/29/33-36/38/39w/40N-42/45-50/52-57/59w/61w/62/64/65Q/70/71/74/76-78/81-85/88/90-94, B*3708, B*3942w, B*4068, B*4406w/12w, B*5104/42w/46w/56w, B*530101-13/15/16, B*5609/11/12w, B*8301w, B*9512w/21/39/44 | A25(10), A10, -, A26(10), Null, A34(10), A66(10), A68(28), B75(15), B77(15), B35, B44(12), B51(5), B53 | 375 |
| A4 | Mix 8 | B*1513, B*2730w, B*4406w/25w/50w, B*5104/42w/46w/56w, B*530101-02/04-06/08/10/15/16, B*5705, B*580101/0102/04/05/09-13/17N/19 | B77(15), -, B44(12), B51(5), B53, B58(17), Null | 325 |
| H5 | Mix 9 | B*2701-21/23-45, B*47010101-05 | B27, B2708, -, B47 | see below |
| | | B*2702-11/13-15/17/19-21/24/25/27/28/30/32-38/40-43/45 | B27, B2708, - | 155 |
| | | B*2701-0510/08-10/12-19/23/25/26/28-32/36-40/42/44/45, B*47010101-05 | B27, B2708, -, B47 | 525 |
| G5 | Mix 10 | B*370101-06/08-14 | B37, -, Null | see below |
| | | B*370101-0104/3703N-06/08-14 | B37, -, Null | 380 |
| | | B*3702 | - | 500 |

| Position on tray | Primer Mix | Allele specificity | Serology | Product size (bp) |
|------------------|------------|---|---|-------------------|
| F5 | Mix 11 | A*2496, B*3710, B*380101-16, B*511301/1302, B*5214, B*5304/07, B*5820, B*5903 | -, B38(16), B16 | 390 |
| E5 | Mix 12 | B*0745w, B*1548w/69, B*3535, B*39010101-20/22-29/31/32w/35/37-42/44-46, B*670101-02, B*9508w/36w | -, B62(15), B3901, B3902, B39(16), B16, Null, B67 | 515 |
| D5 | Mix 13 | B*670101/0102 | B67 | 545 |
| C5 | Mix 14 | B*400101-04/060101-11/13-16/18-20/22N-25/27/29-38/40/42-45/47-50/52-62/64-70/7201-91/94, B*4416/21/31/6401/6402, B*47010101-05 | B60(40), B61(40), B40, -, Null, B47 | 635 |
| B5 | Mix 15 | B*0727w/50w, B*0804w/17, B*1321, B*1507/33/45/55w/68/78, B*1814w/21w/22w, B*3572w, B*3707/09/12, B*400101-0602/09-12/1401-16/18-24/25w/27/29-40/42-60/62-67/69-74/76/78-86/88-94, B*4101-08, B*4431/53/54, B*480101/0102/0301-05/07-19, B*9507/16/26/41/50 | -, B62(15), B15, B60(40), B61(40), B40, B4005, Null, B41, B48 | see below |
| | | B*0727w/50, B*0804/17, B*1507/45/55w/68, B*1814w/22w, B*3572w, B*3707/09, B*400201-03/05/09/15/16/18/19/27/29/31/32/35/37/39/40/45/50/56-58/71/78/80/82/85/89-91/94, B*4102/04, B*4454, B*480101/0102/04/05/07-16/18/19, B*9526 | -, B62(15), B61(40), B40, B4005, B41, B48 | 375 |
| | | B*0727w/50, B*0804/17, B*1321, B*1533/78, B*1821, B*3707/09/12, B*400101-0602/09-12/1401-16/18-24/25/27/29-34/36-40/42-60/62-67/69/70/7201-74/76/78-81/83-86/88-94, B*4101-08, B*4431/53, B*480101/0102/0301-05/07-11/13/15-19, B*9507/16/41/50 | -, B15, B60(40), B61(40), B40, B4005, Null, B41, B48 | 475 |
| A5 | Mix 16 | B*2724/36, B*400101-0106/07/22N/23/25/30/31/33/34/36/38/42/43/45-48/51/52/54/55/59-63/65-67/69/73/74/76/79-81/84/87/88/92 | -, B60(40), Null | 685 |
| H6 | Mix 17 | B*1546/53, B*3519/47/63, B*3706, B*400201-0602/08/09/11/13-16/18-20/24/26-29/32/35/37/39/40/44/50/53/56-58/64/68/70-7202/75/77/78/82/83/86/89-91/94, B*4101-08, B*44020101-05/07/09-30/32-39/41-43/45-51/53-56N/58N/59/61N-65, B*4501-09, B*47010101-05, B*490101-02/04/05, B*5001/02/04, B*9506/43 | B72(70), -, B35, B61(40), B40, B4005, B41, B44(12), B12, Null, B45(12), B47, B49(21), B50(21) | 575 |
| G6 | Mix 18 | B*2718/29, B*3702, B*47010101-05 | -, B47 | 420 |
| F6 | Mix 19 | B*0712/14w/1801/1802w, B*1562/80w, B*2719w/24/30w/36, B*3525/26/49, B*3942w, B*4012/46, B*4440w/44w, B*480101-04/06/07/09/11/15-19, B*5609/11/12w, B*8101-04N, B*8301w, B*9524 | -, B48, B81, Null | |
| | | B*0712/14w/1801/1802w, B*1562/80w, B*2719w/30w, B*3525/26/49, B*3942w, B*4440w/44w, B*4802/17, B*5609/11/12w, B*8301w | - | 430 |
| | | B*2724/36, B*4012/46, B*480101/0102/0301-04/06/07/09/11/15-19, B*8101-04N, B*9524 | -, B48, B81, Null | 575 |
| E6 | Mix 20 | B*1502/08/1101-1103/13/15/21/31/44/55/76/88/89, B*3546, B*9512/21/39/44/48 | B75(15), B77(15), B62(15), - | 140 |

| Position on tray | Primer Mix | Allele specificity | Serology | Product size (bp) |
|------------------|------------|--|--|-------------------|
| D6 | Mix 21 | B*0709/11/17, B*0828/35/37, B*1503/18/23/29/47/49/51/52/54/61/62/64/68/69/72/74/80/91/93/98, B*2741, B*3525/26/49, B*3907/43, B*4209, B*4802/14, B*5514/23/32, B*5603/09/18, B*9503/08/14/15/19/23/24/27/31/32/34/51, Cw*0746 | B7, -, B72(70), B71(70), B15, B22 | 495 |
| C6 | Mix 22 | B*4101-07, B*4202/09 | B41, -, B42 | 790 |
| B6 | Mix 23 | B*0704/19/25, B*4201/02/04-09, B*4506, B*5520, B*5613, B*8201/02, B*8301 | B7, -, B42 | see below |
| | | B*0704/19/25, B*4201/02/04-09, B*4506, B*5520, B*5613, B*8201/02, B*8301 | B7, -, B42 | 550 |
| | | B*0704/19/25, B*4201/02/04-06/08/09, B*4506, B*5520, B*5613, B*8201/02, B*8301 | B7, -, B42 | 540 |
| A6 | Mix 24 | B*070201w-04w/07w-10w/12w/14w-16w/1801w-31w/33w/35w-38w/41w-52w/54w- 64w/66w-68w, B*0807w, B*1510w/37w/99w, B*2706w/21w/34w, B*3929w, B*4009w/18w/24w/31w-33w/42w/44w, B*4104w, B*44020101-05/07/09/11-13/16/19N- 30/32-42/44-56N/58N/59/61N/63-65, B*4808w, B*5527w, B*8301w | B7, B703, -, Null, B71(70), B27, B61(40), B44(12), B12 | 490 |
| H7 | Mix 25 | B*0720, B*1514/91, B*3545/71, B*4406/09/34/46, B*4501-03/05-07/09, B*4617, B*5002, B*5123/42, B*8201/02, B*8301, B*9531 | -, B76(15), B44(12), B12, B45(12) | see below |
| | | B*4406/34, B*5123/42 | B44(12), - | 715 |
| | | B*0720, B*1514/91, B*3545/71, B*4409/46, B*4501-03/05-07/09, B*4617, B*5002, B*8201/02, B*8301, B*9531 | -, B76(15), B12, B45(12) | 545 |
| G7 | Mix 26 | B*1546/53, B*4005/15/16/23/26/28/32/51, B*490101/02/04/05, B*5001/02/04, B*9506/43 | B72(70), -, B4005, B61(40), B49(21), B50(21), B45(12) | 605 |
| F7 | Mix 27 | B*1309, B*1542/73/86, B*3560, B*3917, B*4048/71, B*4501/03-08, B*4611/18, B*5001/02/04, B*5401-03/05N/07/08N/10/13/16/17, B*550101-03/05/07/09- 12/15/16/18/19/21/22/24-26/29-31/33/34, B*5601/02/04/08/10/13/14/16/17/19N/20/23/24, B*8201/02, Cw*0312/19, Cw*1215, Cw*1507 | -, B45(12), B50(21), B54(22), Null, B55(22), B22, B56(22) | 390 |

| Position on tray | Primer Mix | Allele specificity | Serology | Product size (bp) |
|------------------|---------------|---|---|-------------------|
| E7 | Mix 28 | B*070201-0207/04-07/09w/10/11w/12/15/1801-26/29-31/33-36/39-49N/51-68, B*1576w, B*3576w, B*4201/02/04-06/08/09, B*4506, B*5401-05N/06w/07w/08N/09w/10-13/14w/16/17, B*550101-05/07-17/19-22/23w/24-26/27w/28-31/32w/33/34, B*5601/02/03w/04-07/09w/10/11w/12/13/15/16/18w/19N-21/22w/24, B*670101/0102, B*8101-04N, B*8201/02, B*9501w | B7, -, Null, B42, B54(22), B55(22), B22, B56(22), B67, B81 | see below |
| | | B*070201-0207/04-07/09w/10/11w/12/15/1801-26/29-31/33-36/39-49N/51-68, B*1576w, B*3576w, B*4201/02/04-06/08/09w, B*5404/06w/07w/09w/11/14w, B*550104/04/08/13/14/17/20/23w/27w/28/32w/34, B*5603w/0501-06/09w/11w/12/15/18w/21/22w, B*670101/0102, B*8101-04N, B*9501w | B7, -, Null, B42, B55(22), B22, B67, B81 | 410 |
| | | B*4506, B*5401-03/05N/07?/08N/10/12/13/16/17, B*550101-03/05/07/09-12/15/16/19/21/22/24-26/29-31/33/34, B*5601/02/04/07/10/13/16/19N/20/24, B*8201/02 | -, B54(22), Null, B55(22), B22, B56(22) | 420 |
| D7 | Mix 29 | B*5401-05N/07/08N/10-17, B*5507 | B54(22), -, Null | 430 |
| C7 | Mix 30 | B*0720w/24/60, B*1576, B*3576, B*4506w, B*5403/06, B*5508, B*5601-07/09/11/13/15/16/20-22/24, B*8201w/02w, B*8301w, B*9501 | -, B56(22), B22 | 560 |
| B7 | Mix 31 | B*4418, B*490101/0102/03, B*5115/62, B*5412, B*5901/04 | -, B49(21), B59 | 390 |
| A7 | Mix 32 | B*1571, B*1815/19/21/30, B*270401/0402/06/10/15/18/20/21/24/25/40, B*3707, B*4005/15/16/23/26/28/32/51, B*4614, B*490101/02-05, B*5001/02/04 | -, B27, B4005, B61(40), B49(21), B50(21), B45(12) | 715 |
| H8 | Mix 33 | B*460101-05/07N-18, B*5614, B*6702 | B46, -, Null | 470 |
| G8 | Mix 34 | B*130201-04/08Q-10/14-16/18/19, B*15010101-02/04-08/1101-16/19-21/24-28/31-36/38-40/42-45/50/55-57/60/63/65-67/70/71/75-79N/81-85/87-89/92/94N-97, B*3546, B*4408/57/60, B*460101-03/05-18, B*5202, B*570101/0103/04/06/08/10/11/13-15/18/19, B*9501/02/04/05/07/09-13/16-18/20-22/25/26/28/29/35-42/44-49N | B13, -, B62(15), Null, B75(15), B76(15), B77(15), B63(15), B15, B44(12), B46, B57(17) | see below |
| | | B*130201-04/08Q/09/14-16/18/19, B*1504/42/83, B*4611/18, B*5202, B*9537 | B13, -, B62(15) | 430 |
| | | B*1304/10, B*15010101-02/04-08/1101-16/19-21/24-28/31-36/38-40/43-45/50/55-57/60/63/65-67/70/71/75-79N/81/82/84/85/87-89/92/94N-97, B*3546, B*4408/57/60, B*460101-03/05-10/12-17, B*570101/0103/04/06/08/10/11/13-15/18/19, B*9501/02/04/05/07/09-13/16-18/20-22/25/26/28/29/35/36/38-42/44-49N | -, B62(15), Null, B75(15), B76(15), B77(15), B63(15), B15, B44(12), B46, B57(17) | 485 |
| F8 | Mix 35 | B*570101-10/12-19, B*5814 | B57(17), - | see below |
| | | B*570101-04/06-10/12-19, B*5814 | B57(17), - | 360 |
| | | B*5704/05 | B57(17), - | 405 |
| Position | Primer | Allele specificity | Serology | Product |

| on tray | Mix | | | size (bp) |
|---------|--------|--|--|-----------|
| E8 | Mix 36 | B*5714, B*580101-02/04-20 | -, B58(17), Null | 485 |
| D8 | Mix 37 | B*1513/16w/67w/95w, B*2730w, B*4406w/18w/25w/50w, B*490101w/0102w/03w-05w, B*510101-05/07-2402/26-40/42w/43/44N/46w/48-53/55/56w/57/58/60/61/63, B*520101-14, B*530101-02/04-06/08/10/15/16, B*5412, B*5621, B*5705, B*580101/0102/04/05/08-13/17N/19, B*5901-04 | B77(15), B63(15), -, B44(12), B49(21), B51(5), B5102, B5103, Null, B52(5), B53, B58(17), B59 | 325 |
| C8 | Mix 38 | B*350402, B*510101-0103/0105-0203/03-06/08-0902/11N/12/1302/14/16-21/23/26-41N/43/46/48-61/63, B*7801-0202/04 | B35, B51(5), B5102, B5103, Null, -, B52(5), B78 | 445 |
| B8 | Mix 39 | B*070503, B*1509, B*350402, B*510101-0103/0105-0203/03-0902/11N/12/1302/14/16-23/26-41N/43/44N/46/48-61/63, B*550104, B*560501-06/21, B*7801-04 | B7, B70, B35, B51(5), B5102, B5103, Null, -, B52(5), B55(22), B78 | 455 |
| A8 | Mix 40 | B*150102, B*400106/26/28, B*4462, B*5107w, B*520101-05/07-13, B*7805/06 | B62(15), B60(40), -, B51(5), B52(5) | 445 |
| H9 | Mix 41 | B*070503, B*150102/09, B*350402, B*400106/26/28, B*550104, B*560501-06, B*7801-06 | B7, B62(15), B70, B35, B60(40), -, B55(22), B78 | 405 |
| G9 | Mix 42 | B*1509/10/18/21/23/37/51/72/80/90/99, B*3526/82/85, B*3932/33, B*5122, B*7803, B*9508/15/19/33/34 | B70, B71(70), B75(15), - | 570 |
| F9 | Mix 43 | B*1309, B*15010101-02/04-08/1101-12/14/15/19-21/25-28/30-35/38-40/42/44/45/48/50/55/56/58/60/63/65/66/70/71/73/75-79N/81-86/88/92/94N/96/97, B*3546, B*4021, B*5712, B*9501/02/04/05/07/10-13/16-18/20-22/25/26/28/29/35-42/44-50 | -, B62(15), Null, B75(15), B76(15), B15 | 130 |
| E9 | Mix 44 | B*1512/14/19, B*4408/57/60, B*4617, B*5707 | B76(15), B44(12), - | 645 |
| D9 | Mix 45 | B*1516-1702/67/95, B*5713, B*5806/08/19 | B63(15), - | 525 |
| C9 | Mix 46 | B*1401-04/07N/09 | B64(14), B65(14), -, Null | 400 |
| B9 | Mix 47 | B*140201-03/05-0602/09, B*3526, B*3805, B*3904 | B65(14), -, B39(16) | 185 |
| A9 | Mix 48 | B*7301 | B73 | 295 |

w = weak

bold: mixes which result in PCR fragments of different sizes (the specificities are first indicated all in one row, then split into different groups in the subsequent rows depending on their fragment size)

Table 3: Sizes of the PCR products and allele specificities of each **HLA-Cw*** CTS-PCR-SSP Primer Mix (Lot-No C09-2) based on IMGT/HLA Sequence Database Release 2.21.0, April 2008

Amplification control (internal positive control): 89 base pairs (bp)

| Position on tray | Primer mix | Allele specificity | Serology | Product size (bp) |
|------------------|------------|--|----------------------------|-------------------|
| H10 | Mix 1 | Cw*010201-13/15-20, 'B*3907? | -, Cw1 | 245 |
| G10 | Mix 2 | Cw*020201-11/12w/13-21, Cw*0432, Cw*0608, Cw*1701-04, Cw*1803 | Cw2, - | 530 |
| F10 | Mix 3 | Cw*030201-15/17-40/42-48 | Cw10(w3), Cw9(w3), -, Null | 570 |
| E10 | Mix 4 | Cw*030201-06/08-13/15-24/26-44/46-48, Cw*0411/29, Cw*140201/0203-03/05-09 | Cw10(w3), Cw9(w3), -, Null | 440 |
| D10 | Mix 5 | B*1596, Cw*030201-0203/0401-10/14/17/19/23-29/33-3802/40/42/44/46-48 | -, Cw10(w3) | 530 |
| C10 | Mix 6 | B*6702, Cw*04010101-0105/03-14/1502-20/23-32, Cw*1210 | -, Cw4, Null | 470 |
| B10 | Mix 7 | Cw*041501 | - | 540 |
| A10 | Mix 8 | Cw*050101/0103/0104/03-19, Cw*0810 | Cw5, -, Null | 425 |
| H11 | Mix 9 | Cw*0113, Cw*050101-0104/03-11/13-17/19, Cw*0741w, Cw*0802/04/05/07/12/13/15: | -, Cw5, Null, Cw8 | see below |
| | | Cw*050101-0104/03-11/13-17/19, Cw*0802/04/05/07/12/15 | -, Cw5, Null, Cw8 | 590 |
| | | Cw*0113, Cw*0741w, Cw*0802/04/05/07/12/13/15 | -, Cw8 | 465 |
| G11 | Mix 10 | Cw*06020101-14/15?/16N/17, Cw*0731 | Cw6, -, Null | 305 |
| F11 | Mix 11 | Cw*070101-21/22w/23-25/2701-32N/35-40/42-54 | Cw7, -, Null | 715 |
| E11 | Mix 12 | B*0751, Cw*070101-03/0401w/0402w/05-10/11w/12w/13-19/21/22w/23-29/31-33N/35-40/42-44/45w/46-54, Cw*0814 | -, Cw7, Null | 670 |
| D11 | Mix 13 | Cw*080101-09/11/12/14/15 | Cw8, - | 165 |
| C11 | Mix 14 | Cw*0104w, Cw*120201-0203/08/10/16/18/19: | - | see below |
| | | Cw*1219 | - | 370 |
| | | Cw*0104w, Cw*120201-0203/08/10/16/18 | - | 460 |
| B11 | Mix 15 | Cw*0104, Cw*120201-030102/0303-0306/0402-08/10-13/15-18/20/21 | - | 420 |
| A11 | Mix 16 | B*0713/15, B*6702, Cw*0212, Cw*0315/27/3801/3802, Cw*0403w/06w/16w, Cw*0603w, Cw*0726, Cw*0805, Cw*120201-0306/0401w/0402w/06-08/10-15/18-20, Cw*1503w/16w, Cw*1701w-04w | - | 230 |
| H12 | Mix 17 | Cw*0205, Cw*0516, Cw*06020101-10/12-14/15?/16N/17, Cw*120401-05/09, Cw*1602/09 | -, Cw6, Null | 330 |

| Position on tray | Primer mix | Allele specificity | Serology | Product size (bp) |
|------------------|------------|--|-------------------|-------------------|
| G12 | Mix 18 | Cw*020201-0206/04-11/12w/13-15/17/19-21, Cw*0508, Cw*06020101-03/07-10/12-17, Cw*120401-05/21, Cw*1803 | Cw2, -, Cw6, Null | 510 |
| F12 | Mix 19 | Cw*041501, Cw*140201-0203/0204w/03-09 | -, Null | 565 |
| E12 | Mix 20 | B*350802, Cw*0510, Cw*150201-13/15-21 | B35, - | 435 |
| D12 | Mix 21 | Cw*160101-02/0401/06-08/09/10/11 | - | 470 |
| C12 | Mix 22 | Cw*1701-04: | - | see below |
| | | Cw*1701-04 | - | 915 |
| | | Cw*1704 | - | 605 |
| B12 | Mix 23 | Cw*1801-03, Cw*0708 | - | 555 |
| A12 | Mix 24 | Negative Control | - | - |

w = weak

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

bold: mixes which result in PCR fragments of different sizes (the specificities are first indicated all in one row, then split into different groups in the subsequent rows depending on their fragment size)

Table 4: Amplification patterns for all detectable HLA-A specificities (Lot-No A12-4) based on IMGT/HLA Sequence Database Release 2.16.0, January 2007

| 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 |
|--|-------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| A*01010101-04N/06-11N/13-18N/20 | A1, Null, - | + | | | | | | | | | | | | | | | | | | | | | | | |
| A*0112/19 | - | + | | | | | | | | | | | | | | | + | | | | | | | | |
| A*02010101-0108/0110/0111/02-11/14-16/18/2001-22/24-26/28-33/36/39-43N/45/47/51/53N/57-59/61/63/66-69/71-77/79/81-87/89-97/99, A*9201/02/04/06/07/09 | A2, A203, -, A210 | | | + | | | | | | | | | | | | | | | | | | | | + | |
| A*020109 | A2 | | | + | | | | | | | | | | | | | | | | | | + | | | |
| A*020112 | A2 | | | + | | | | | | | | | | | | | | | | | | | | | W |
| A*0212/13/19/27/37/38/44/49/54 | A2, - | | | + | | | | | | | | | | | + | | | | | | | | | | + |
| A*021701/1702, A*9208 | A2, - | | | + | | | | | | | | + | | | | | | | | | | | | | + |
| A*0234/3501/56/62 | - | | | + | | | | | | | | | | | | | | | | | | | | + | + |
| A*023502 | - | | | | | | | | | | | | | | | | | | | | | | + | | W |
| A*9203 | - | | | | | | | | | | | | | | | | | | | | | | + | | + |
| A*0246/70 | - | | | + | | | | + | | | | | | | | | | | | | | | | | + |
| A*0248 | - | | | | | | | + | | | | | | | | | | | | | | | | | + |
| A*0250 | - | | | | | | | | | | | | | | | | | | | | | + | | | + |
| A*0252 | - | | | | | | | | | + | | | | | | | | | | | | | | | + |
| A*0255/60/64/80/88N | - | | | | | | | | | | | | | | | | | | | | | | | | + |
| A*0265 | - | | | | | | | | | | | | | | | | | | | | + | | | | + |
| A*0278 | - | | | + | | | | | | | | | | | | | | | | | | | | + | |
| A*03010101-0105/03N-09/11N-17/19-22/25/26, A*1125 | A3, Null, - | | | | + | | | | | | | | | | | | | | | | | | | | |
| A*0302 | A3 | | | + | | | | | | | | | | | | | | | | | | | | | |
| A*0310 | - | | | | | | | | | | | | | | | | + | | | | | | | | |
| A*0324 | - | | | | | | | | | | | | | | + | | | | | | | | | | |
| A*110101-0201/03-09/11-16/18-22/26-29 | A11, - | | | | | | | | | | | | | | | | | | | | | | | | |
| A*1110 | - | | | | | | | | | | | | | | | | | | | | | | | | |
| A*1117, A*3601/03/04 | -, A36 | | + | | | | | | | | | | | | | | | | | | | | | | |
| A*1123 | - | | | | | | | | | | | | | | | | | | | | | | | | |
| A*2301/02/05-08N/10-14 | A23(9), - | | | | | + | + | | | | | | | | | | | | | | | | | | |
| A*2303 | - | | | | | + | | | | | | | | | | | + | | | | | | | | |
| A*2304 | - | | | | | + | + | | | | | + | | | | | | | | | | | | | |
| A*2309, A*2424 | - | | | | | + | | | | | | | | | | | | | | | | | | | |
| A*24020101-0205/0208-0211/0213/05/07/09N/11N/14/15/17/20/23/25-27/30/34-41/43/45N-47/49-59/62-64/66/68 | A24(9), - | | | | | | + | + | | | | | | | | | | | | | | | | | |
| A*240206 | A24(9) | | | | | | + | + | | | | | | | | | | | | | | | | | + |
| A*240207/0212/04/06/13/32/60N/61/65 | A24(9), - | | | | | | + | | | | | | | | | | | | | | | | | | |
| A*240301/0302/10/33 | Low A24, A9, - | | | | | | + | + | | | | + | | | | | | | | | | | | | |
| A*2408/21/29/31/42/67 | A24(9), - | | | | | | | + | | | | | | | | | | | | | | | | | |
| A*2418 | - | | | | | | + | | | | | + | | | | | | | | | | | | | + |
| A*2419/28/44 | - | | | | | | + | | | | | | | | + | | | | | | | | | | |
| A*2422 | - | | | | | | + | | | | | + | | | | | | | | | | | | | |
| A*2448N | Null | | | | | | + | ? | | | | | | | | | | | | | | | | | ? |
| A*250101/03/04/06 | A25(10), - | | | | | | | | + | + | | | | | | | | | | | | | | | |
| A*250102 | A25(10) | | | | | | | | W | + | | | | | | | | | | | | | | | |

| 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 |
|------------------------------------|------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| A*2502 | A10 | | | | | | | | + | + | | | + | | | | | | | | | | | | |
| A*2505 | - | | | | | | | | + | + | | | | | | | | | | | | + | | | |
| A*260101/0103-12/14-18/20-30/32/34 | A26(10), -, A10 | | | | | | | | | + | + | | | | | | | | | | | | | | |
| A*260102, A*6603/05 | A26(10), A10, - | | | | | | | | | + | | | | | | | | | | | | | | | |
| A*2613 | - | | | | | | | | | + | + | | + | | | | | | | | | | | | |
| A*2619 | - | | | | | | | | | | | + | + | | | | | | | | | | | | |
| A*2631 | - | | | | | | | | | | + | | | | | | | | | | | | | | |
| A*2633, A*3406, A*6601/02/04/06 | -, A66(10) | | | | | | | | | + | | | + | | | | | | | | | | | | |
| A*29010101-06/08N-12/15/16, A*7410 | A29(19), Null, - | | | | | | | | | | | | | | | + | | | | | | | | | |
| A*2907 | - | | | | | + | | | | | | + | | | | + | | | | | | | | | |
| A*2913, A*3201/05-14 | -, A32(19) | | | | | | | | | | | | | | | | | | | + | | | | | |
| A*2914 | - | | | | | | | | | | | | | | | + | | + | | | | | | | |
| A*300101-04/06/08-11/14L/15/17/19 | A30(19), - | | | | | | | | | + | | | | | | | + | | | | | | | | |
| A*3007/13/16 | - | | | | | | | | | + | | | | | | | + | | | | | | | w | |
| A*3012/18 | - | | | | | | | | | + | | | | | | | | | | | | | | | |
| A*310102-06/09/11-15 | A31(19), - | | | | | | | | | | | | | | | | | | + | | | | | | |
| A*3107/10 | - | | | | | | | | | | | | | | | + | | + | | | | | | | |
| A*3108 | - | | | | | | + | | | | | | | | | + | | | | + | | | | | |
| A*3202 | A32(19) | | | | | | | | | | | | | | | | + | | | + | | | | | |
| A*3203 | - | | | | | | | | | | | | | | | + | | | | + | | | | | |
| A*3204 | - | | | | + | | | | | | | | | | | | | | | + | | | | | |
| A*3301/0301-09 | A33(19), - | | | | | | | | | | | | | | | | | | | | + | | | | |
| A*3401/05 | A34(10), - | | | | | | | | | + | | + | + | | | | | | | | | | | | |
| A*3402-04/07/08 | A34(10), - | | | | | | | | | + | | | | + | | | | | | | | | | | |
| A*3602 | - | | + | | + | | | | | | | | | | | | | | | | | | | | |
| A*4301 | A43 | | | | | | | | | | + | | | | | | | | | | | | | | + |
| A*680101-08/10-25/27/29-36 | A68(28), A28, - | | | | | | | | | | | | | | | | | | | | | + | | | |
| A*6809/26/28 | A69(28), - | | | | | | | | | | | | | | + | | | | | | | + | | | |
| A*6901 | A69(28) | | | | | | | | | | | | | | | | | | | | | + | + | | |
| A*7401-03/05-09/11/12N | A74(19), A19, - | | | | | | | | | | | | | | | | | | | | + | | | | |
| A*7404 | - | | | | | | | | | | | | | | | | | | | | + | + | | | |
| A*8001 | A80 | | | | | | | | | | | | | | | | | | | | | | | | + |

w = weak

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

Table 5: Amplification patterns for all **HLA-B** alleles detected by the **HLA-B*** CTS-PCR-SSP reagents (**Lot-No B12-0**) based on IMGT/HLA Sequence Database Release 2.24.0, January 2009

| Allele | Serology | Mix |
|---|---|-----------------|
| A*250101-08, A*260101-06/08-18/20/21/23-30/33-37, A*340101/0102/05/06, A*6601-08, A*68020101-0202/15/18N/23/27/28/31/34/40/44, B*5309 | A25(10), A10, -, A26(10), A34(10), A66(10), A68(28) | 7 |
| B*070201-0207/07/10/15/21-23/26/30/31/35/36/41-44/46-49N/51/52/55-59/61-64/66-68 | B7, - | 1+24w+28 |
| B*0703/08/16/28/37/38 | B703, - | 1+24w |
| B*0704/25 | B7, - | 1+23+24w+28 |
| B*070501/0502/06/34/39 | B7, - | 1+28 |
| B*070503 | B7 | 1+28+39+41 |
| B*0709 | B7 | 1+21+24w+28w |
| B*0711 | B7 | 1+21+28w |
| B*0712/1801 | - | 1+7+19+24w+28 |
| B*0713/32, Cw*0223, Cw*0738 | - | 1 |
| B*0714 | - | 1+7w+19w+24w |
| B*0717 | - | 1+21 |
| B*071802 | - | 1+7w+19w+24w+28 |
| B*0719 | - | 23+24w+28 |
| B*0720 | - | 1+24w+25+28+30w |
| B*0724 | - | 1+24w+28+30 |
| B*0727/50 | - | 1+15w+24w |
| B*0729 | - | 1+2+24w+28 |
| B*0733/54 | - | 24w+28 |
| B*0740/53, B*5504/13/17/28 | -, B55(22) | 28 |
| B*0745 | - | 1+12w+24w+28 |
| B*0760 | - | 24w+28+30 |
| B*0765 | - | 1+5+28 |
| B*080101-03/05/06/08N-16/18-25/27/29-31/33/34/36/38 | B8, - | 2 |
| B*0804 | - | 2+15w |
| B*0807 | - | 2+24w |
| B*0817 | - | 2+15 |
| B*0828/35/37 | - | 2+21 |
| B*0832 | - | 2+5 |
| B*1301/06/07N/11-13/17/20/23 | B13, - | 3 |
| B*130201-0204/08Q/10/14-16/18/19 | B13, - | 3+34 |
| B*1303/04, B*1524/36/43/57/87, B*5711, B*9509 | -, B62(15) | 34 |
| B*1309 | - | 3+27+34+43 |
| B*1321 | - | 3+15 |
| B*1401/04/07N | B64(14), - | 46 |
| B*140201-03/09 | B65(14), - | 46+47 |
| B*1405-0602 | - | 47 |
| B*15010101/010102N/0103-0108/04-06/20/25-28/32/34/35/38-40/50/56/60/63/65/66/70/75/77/79N/81-85/92/94N/96/97, B*9502/04/05/10/11N/13/17/18/20/22/25/28/29/35/37/38/40/45-47/49N | B62(15), Null, B15, - | 34+43 |
| B*150102 | B62(15) | 34+40+41+43 |
| B*1502/44/88, B*9512/21/39/44 | B75(15), - | 7+20+34+43 |

| Allele | Serology | Mix |
|---|---------------------|-----------------|
| B*1503/29/47/49/52/54/61/64/74/93/98, B*3943, B*9503/14/23/27/32/51, Cw*0746 | B72(70), B15, - | 21 |
| B*1507/33/45/78, B*9507/16/26/41 | B62(15), B15, - | 15+34+43 |
| B*1508/1101-1103/15/31, B*9548 | B75(15), B62(15), - | 20+34+43 |
| B*1509 | B70 | 39+41+42 |
| B*1510/37/99 | B71(70), - | 24w+42 |
| B*1512/19 | B76(15) | 34+43+44 |
| B*1513 | B77(15) | 7+8+20+34+37 |
| B*1514 | B76(15) | 25+34+43+44 |
| B*1516/67/95 | B63(15) | 34+37w+45 |
| B*15170101-1702 | B63(15) | 45 |
| B*1518/23/51/72, B*9515/19/34 | B71(70), - | 21+42 |
| B*1521 | B75(15) | 7+20+34+42+43 |
| B*1524/36/43/57/87, B*1303/04, B*5711, B*9509 | B62(15), - | 34 |
| B*1530/58 | B62(15), - | 43 |
| B*1542 | - | 27+34+43 |
| B*1546/53, B*9506/43 | B72(70), - | 17+26 |
| B*1548 | B62(15) | 12w+43 |
| B*1555 | - | 15w+20+34+43 |
| B*1562, B*4802, B*9524 | - | 19+21 |
| B*1568, B*4814 | - | 15+21 |
| B*1569, B*3907 | - | 12+21 |
| B*1571 | - | 32+34+43 |
| B*1573/86 | - | 27+43 |
| B*1576 | - | 20+28w+30+34+43 |
| B*1580 | - | 7w+19w+21+42 |
| B*1589 | - | 7+20+34 |
| B*1590, B*3933, B*9533 | - | 42 |
| B*1591, B*9531 | - | 21+25 |
| B*180101-08/10-13/17N/18/20/23N-25/27/28/31/32 | B18, - | 4+5 |
| B*1809 | - | 4 |
| B*1814/22 | - | 4+5+15w |
| B*1815/19/30 | - | 4+5+32 |
| B*1821 | - | 4+5+15w+32 |
| B*1826/29, B*3510/13/16/22/28/31/43/44/51/67/69/79/80/86/87 | -, B35 | 5 |
| B*2701-03/0502-0510/07-09/11-14/16/17/23/26-28/31-33/35/37-39/42-45 | B27, B2708, - | 9 |
| B*270401/0402/10/15/20/25/40 | B27, - | 9+32 |
| B*2706/21 | B27, - | 9+24w+32 |
| B*2718 | - | 9+18+32 |
| B*2719 | - | 9+19w |
| B*2724 | - | 9+16+19+32 |
| B*2729 | - | 9+18 |
| B*2730 | - | 8w+9+19w+37w |
| B*2734 | - | 9+24w |
| B*2736 | - | 9+16+19 |
| B*2741 | - | 9+21 |
| B*350101-0103/0105-0401/06-0801/0901/0902/11/1401-15/18/21/23/24/29/33/34/36/38/40N-42/48/50/52-55/57/62/64/65Q/70/74/77/78/81/84/90-94 | -, B35 | 5+6+7 |

| Allele | Serology | Mix |
|--|-------------------------------|----------------|
| B*350104/0803 | - | 5+6+7w |
| B*350402 | B35 | 5+6+7+38+39+41 |
| B*350403/2001/83/88 | B35, - | 5+7 |
| B*3505/17/30/32/37/58/6801/6802/75/89 | B35, - | 5+6 |
| B*350802/27/56, B*5303/11-13 | B35, - | 6+7 |
| B*3512/39/59/61 | B35 | 5+7w |
| B*3519/47 | B35, - | 6+7+17 |
| B*352002 | B35 | 4+5+7 |
| B*3525/49 | - | 6+7+19+21 |
| B*3526 | - | 7+19+21+42+47 |
| B*3535 | - | 5+6+7+12 |
| B*3545/71 | - | 5+6+7+25 |
| B*3546 | - | 6+7+20+34+43 |
| B*3560 | - | 5+27 |
| B*3563, B*4410/14/15/17/43 | - | 17 |
| B*3566 | - | 1+5+6 |
| B*3572 | - | 5+15w |
| B*3576 | - | 5+7+28w+30 |
| B*3582/85 | - | 5+7+42 |
| B*370101-0104/03N-05/13 | B37, - | 10 |
| B*3702 | - | 10+18 |
| B*3706 | - | 10+17 |
| B*3707 | - | 15+32 |
| B*3708 | - | 7+10 |
| B*3709/12 | - | 10+15 |
| B*3710 | - | 10+11 |
| B*3711/14 | - | 5+10 |
| B*380101-04/06-16, A*2496 | -, B38(16), B16 | 11 |
| B*3805 | - | 11+47 |
| B*39010101-03/05-0602/08-11/1301-16/18/20/22-28/31/35/37-41/44-46 | B3901, B3902, B39(16), B16, - | 12 |
| B*3904 | B39(16) | 12+47 |
| B*3907, B*1569 | - | 12+21 |
| B*3912 | B39(16) | 2+12 |
| B*3917 | - | 12+27 |
| B*391901/1902 | - | 5+12 |
| B*3929 | - | 12+24w |
| B*3932 | - | 12w+42 |
| B*3942 | - | 7w+12+19w |
| B*400101-0105/22N/30/34/36/38/43/45/47/52/54/55/59/60/62/65-67/69/73/74/76/79-81/84/88 | B60(40), - | 14+15+16 |
| B*400106 | B60(40) | 14+15+16+40+41 |
| B*400201-04/060101-0602/11/1401-1403/19/20/27/29/35/37/40/50/53/56-58/64/70/7201/7202/78/82/83/86/89-91/94 | B61(40), B40, - | 14+15+17 |
| B*4005 | B4005 | 15+17+26+32 |
| B*4007/61/87 | - | 14+16 |
| B*4008/13/75/77 | - | 14+17 |
| B*4009/18/24/44 | B61(40), - | 14+15+17+24w |
| B*4010/49/85, B*4431 | B60(40), - | 14+15 |
| B*4012, B*480101/0102/0301-04/07/09/11/15-19 | -, B48 | 15+19 |
| B*4015/16 | -, B61(40) | 14+15+17+26+32 |
| B*4021, B*9550 | - | 15+43 |

| Allele | Serology | Mix |
|---|------------|--------------------|
| B*4023 | - | 14+15+16+26+32 |
| B*4025 | - | 1+14+15w+16 |
| B*4026/28 | - | 17+26+32+40+41 |
| B*4031/33/42 | - | 14+15+16+24w |
| B*4032 | - | 14+15+17+24w+26+32 |
| B*4039, B*4108 | - | 15+17 |
| B*4046 | - | 15+16+19 |
| B*4048 | - | 14+15+16+27 |
| B*4051 | - | 15+16+26+32 |
| B*4063/92 | - | 15+16 |
| B*4068 | - | 7+14+17 |
| B*4071 | - | 15+17+27 |
| B*4093, B*4805/10/12/13 | -, B48 | 15 |
| B*4101-0302/05-07 | B41, - | 15+17+22 |
| B*4104 | - | 15+17+22+24w |
| B*4201/04/06/08, B*5520 | B42, - | 23+28 |
| B*4202 | B42 | 22+23+28 |
| B*420501 | - | 1+23+28 |
| B*420502 | - | 1w+23+28 |
| B*4207 | - | 23 |
| B*4209 | - | 21+22+23+28w |
| B*44020101-05/07/11/13/19N/20/22-24/26-30/32/33/35-39/41/42/45/47/48/51/55/56N/58N/59/61N/63/65 | B44(12), - | 17+24 |
| B*4406 | B44(12) | 7w+8w+25+37w |
| B*4408/57/60 | B44(12), - | 34+44 |
| B*4409/34/46 | B12, - | 17+24+25 |
| B*4410/14/15/17/43, B*3563 | - | 17 |
| B*4412 | - | 7w+17+24 |
| B*4416/21/6401/6402 | - | 14+17+24 |
| B*4418, B*490102 | - | 17+31+37w |
| B*4425/50 | - | 8w+17+24+37w |
| B*4440/44 | - | 19w+24 |
| B*4449 | - | 2+17+24 |
| B*4452N | - | 24 |
| B*4453/54 | - | 15+17+24 |
| B*4462 | - | 17+40 |
| B*4501/03/05/07 | B45(12), - | 17+25+27 |
| B*4502/09 | - | 17+25 |
| B*4504/08 | - | 17+27 |
| B*4506 | - | 17+23+25+27+28+30w |
| B*460101-03/05/07N-10/12/13/15N/16 | B46, - | 33+34 |
| B*4604 | - | 33 |
| B*4606 | - | 1+34 |
| B*4611/18 | - | 27+33+34 |
| B*4614 | - | 32+33+34 |
| B*4617 | - | 25+33+34+44 |
| B*47010101-05 | B47, - | 9+14+17+18 |
| B*480101/0102/0301-04/07/09/11/15-19, B*4012 | B48, '- | 15+19 |
| B*4802, B*1562, B*9524 | - | 19+21 |
| B*4805/10/12/13, B*4093 | B48, '- | 15 |
| B*4806 | - | 1+19 |

| Allele | Serology | Mix |
|--|--|-----------------|
| B*4808 | - | 15+24w |
| B*490101 | B49(21) | 17+26+31+32+37w |
| B*490102, B*4418 | B49(21), '- | 17+31+37w |
| B*4902 | - | 17+26+32 |
| B*4903 | - | 31+32+37w |
| B*4904/05 | - | 17+26+32+37w |
| B*5001/04 | B50(21), - | 17+26+27+32 |
| B*5002 | B45(12) | 17+25+26+27+32 |
| B*510101-0103/0105-0203/03/05/08-0902/11N/12/14/16-21/26-40/43/48-53/55/57/58/60/61/63 | B51(5), B5102, B5103, -, B52(5) | 37+38+39 |
| B*510104/0204/10/2401/2402, B*520601/0602, B*5902 | B51(5), B5102, - | 37 |
| B*5104 | B51(5), - | 7+8+37+38+39 |
| B*5106/41N/54/59 | B5, - | 38+39 |
| B*5107 | B51(5) | 37+39+40w |
| B*511301, B*5214, B*5903 | - | 11+37 |
| B*511302 | - | 11+37+38+39 |
| B*5115, B*5901/04 | -, B59 | 31+37 |
| B*5122 | - | 37+39+42 |
| B*5123 | - | 25+37+38+39 |
| B*5142 | - | 7w+8w+25+37w |
| B*5144N | | 37+39 |
| B*5146/56 | - | 7w+8w+37w+38+39 |
| B*5162 | - | 31 |
| B*520101-0104/03-05/07-13 | B52(5), - | 37+40 |
| B*5202 | - | 34+37+40 |
| B*520601/0602, B*510104/0204/10/2401/2402, B*5902 | B51(5), B5102, - | 37 |
| B*530101-02/05/06/08/10/15/16 | B53, - | 6+7+8+37 |
| B*5303/11-13,'B*350802/27/56 | -, B35 | 6+7 |
| B*5304 | - | 6+7+8+11+37 |
| B*5307 | - | 7+11 |
| B*5314 | - | 6 |
| B*5401/02/05N/08N/10/13/16/17, B*5507 | B54(22), - | 27+28+29 |
| B*5403 | - | 27+28+29+30 |
| B*5404/11 | - | 28+29 |
| B*5406 | - | 28w+30 |
| B*5407 | - | 27+28w+29 |
| B*5409 | - | 28w |
| B*5412 | - | 28+29+31+37 |
| B*5414 | - | 28w+29 |
| B*5415 | - | 29 |
| B*550101-0103/0201-03/05/09-12/15/16/19/21/22/24-26/29-31/33/34, B*5610/19N | B55(22), -, B22 | 27+28 |
| B*550104 | B55(22) | 27+28+39+41 |
| B*5504/13/17/28, B*0740/53 | B55(22), - | 28 |
| B*5507,'B*5401/02/05N/08N/10/13/16/17 | , -, B54(22) | 27+28+29 |
| B*5508, B*5607/15/22 | - | 28+30 |
| B*5514 | - | 21+28 |
| B*5518, B*5608/17/23, Cw*0312/19, Cw*1215, Cw*1507 | - | 27 |
| B*5523 | - | 21+28w |
| B*5527 | - | 24w+28w |
| B*5532 | - | 21+28w |

| Allele | Serology | Mix |
|---|---------------------|----------------------|
| B*5601/02/04/16/20/24 | B56(22), - | 27+28+30 |
| B*5603 | B22 | 21+28w+30 |
| B*560501/0502 | - | 28+30+39+41 |
| B*5606 | - | 5+28+30+39+41 |
| B*5607/15,B*5508 | - | 28+30 |
| B*5608/17/23, B*5518Cw*0312/19, Cw*1215, Cw*1507 | - | 27 |
| B*5609 | - | 7+19+21+28w+30 |
| B*5610/19N,'B*550101-0103/0201-03/05/09-12/15/16/19/21/22/24-26/29-31/33/34 | -, B22, B55(22) | 27+28 |
| B*5611 | - | 7+19+28w+30 |
| B*5612 | - | 7w+19w+28 |
| B*5613 | - | 23+27+28+30 |
| B*5614 | - | 27+33 |
| B*5618 | - | 21+28w |
| B*5622 | - | 28w+30 |
| B*570101/0103/04/06/08/10/15/18/19 | B57(17), - | 34+35 |
| B*570102/02-0302/09/16/17 | B57(17), - | 35 |
| B*5705 | - | 8+35+37 |
| B*5707 | - | 35+44 |
| B*5712 | - | 35+43 |
| B*5713 | - | 34+35+45 |
| B*5714 | - | 34+35+36 |
| B*580101/0102/04/05/09-13/17N | B58(17), - | 8+36+37 |
| B*5802/07/15/16/18 | B58(17), - | 36 |
| B*5806 | - | 36+45 |
| B*5808 | - | 36+37+45 |
| B*5814 | - | 35+36 |
| B*5818 | - | 21+28w |
| B*5819 | - | 8+36+37+45 |
| B*5820 | - | 11+36 |
| B*5901/04, 'B*5115 | B59, '- | 31+37 |
| B*5902,'B*510104/0204/10/2401/2402, B*520601/0602 | -, B51(5), B5102, - | 37 |
| B*5903,'B*511301, B*5214 | - | 11+37 |
| B*670101/0102 | B67 | 12+13+28 |
| B*6702 | - | 12+33 |
| B*7301 | B73 | 48 |
| B*7801-0202/04 | B78, - | 5+38+39+41 |
| B*7803 | - | 5+39+41+42 |
| B*7805 | - | 5+40+41 |
| B*7806 | - | 40+41 |
| B*8101-04N | B81, - | 1+19+28 |
| B*8201/02 | - | 23+25+27+28+30w |
| B*8301 | - | 7w+19w+23+24w+25+30w |
| B*9501 | - | 28w+30+34+43 |
| B*9508 | - | 12w+21+42 |
| B*9536 | - | 12w+34+43 |
| B*9542 | - | 2+34+43 |

w = weak

Table 6: Amplification patterns of HLA-Cw alleles detected by the HLA-Cw* CTS-PCR-SSP primer mixes (Lot-No C09-2) based on IMGT/HLA Sequence Database Release 2.21.0, April 2008.

| 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 | | |
|--|-------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|--|
| B*0713/15 | - | | | | | | | | | | | | | | | | + | | | | | | | | | |
| B*0751 | - | | | | | | | | | | | | + | | | | | | | | | | | | | |
| B*1596 | - | | | | | + | | | | | | | | | | | | | | | | | | | | |
| B*350802 | B35, - | | | | | | | | | | | | | | | | | | | | | + | | | | |
| B*3907 | -, Cw1 | ? | | | | | | | | | | | | | | | | | | | | | | | | |
| B*6702 | - | | | | | | + | | | | | | | | | | | + | | | | | | | | |
| Cw*010201-03/05-12/15-20 | -, Cw1 | + | | | | | | | | | | | | | | | | | | | | | | | | |
| Cw*0104 | - | + | | | | | | | | | | | | | | w | + | | | | | | | | | |
| Cw*0113 | - | + | | | | | | | | | + | | | | | | | | | | | | | | | |
| Cw*020201-0206/04/06-11/13-15/17/19-21 | Cw2, - | | + | | | | | | | | | | | | | | | | | | + | | | | | |
| Cw*0203/16/18 | - | | + | | | | | | | | | | | | | | | | | | | | | | | |
| Cw*0205 | - | | + | | | | | | | | | | | | | | | | + | + | | | | | | |
| Cw*0212 | - | | w | | | | | | | | | | | | | | | + | | w | | | | | | |
| Cw*030201-0203/0401-06/08-10/17/19/23/24/26/28/29/33-37/40/42/44/46-48 | Cw10(w3), - | | | + | + | + | | | | | | | | | | | | | | | | | | | | |
| Cw*030301-0305/1101-13/18/20N-22Q/30-32/39/43 | Cw9(3), - | | | + | + | | | | | | | | | | | | | | | | | | | | | |
| Cw*0307/14/25 | - | | | + | | + | | | | | | | | | | | | | | | | | | | | |
| Cw*0315 | - | | | + | + | | | | | | | | | | | | | + | | | | | | | | |
| Cw*0316/41 | - | | | + | + | | | | | | | | | | | | | | | | | | | | | |
| Cw*0327/3801/3802 | - | | | + | + | + | | | | | | | | | | | | + | | | | | | | | |
| Cw*0345 | - | | | + | | | | | | | | | | | | | | | | | | | | | | |
| Cw*04010101-0105/0401-05/07-10/12-14/1502/17-20/23-28/30/31 | Cw4, - | | | | | | + | | | | | | | | | | | | | | | | | | | |
| Cw*0403/06/16 | - | | | | | | + | | | | | | | | | | | w | | | | | | | | |
| Cw*0411/29 | - | | | | + | | + | | | | | | | | | | | | | | | | | | | |
| Cw*041501 | - | | | | | | | | + | | | | | | | | | | | | | | + | | | |
| Cw*0432 | - | | | + | | | + | | | | | | | | | | | | | | | | | | | |
| Cw*050101/0103/0104/03-07N/09/11/13-15/17/19 | Cw5, - | | | | | | | | | + | + | | | | | | | | | | | | | | | |
| Cw*050102, Cw*0741, Cw*0813 | Cw5, - | | | | | | | | | | + | | | | | | | | | | | | | | | |
| Cw*0508 | - | | | | | | | | | + | + | | | | | | | | | + | | | | | | |
| Cw*0510 | - | | | | | | | | | + | + | | | | | | | | | | | | + | | | |
| Cw*0512/18, Cw*0810 | - | | | | | | | | | + | | | | | | | | | | | | | | | | |
| Cw*0516 | - | | | | | | | | | + | + | | | | | | | | + | | | | | | | |
| Cw*06020101-0203/07/09/10/12-14/16-17 | Cw6, - | | | | | | | | | | + | | | | | | | | + | + | | | | | | |
| Cw*0603 | - | | | | | | | | | | + | | | | | | | w | + | + | | | | | | |
| Cw*0604-06 | - | | | | | | | | | | + | | | | | | | | + | + | | | | | | |
| Cw*0608 | - | | | + | | | | | | | + | | | | | | | | + | + | | | | | | |
| Cw*0611 | - | | | | | | | | | | + | | | | | | | | + | + | | | | | | |
| Cw*0615 | Cw6 | | | | | | | | | | ? | | | | | | | | ? | + | | | | | | |
| Cw*070101-03/05-07/09/10/13-19/21/23-25/2701-29/32N/35-40/42-54 | Cw7, - | | | | | | | | | | | + | + | | | | | | | | | | | | | |
| Cw*070401/02/11/12/45 | - | | | | | | | | | | | + | w | | | | | | | | | | | | | |
| Cw*0708 | - | | | | | | | | | | | + | + | | | | | | | | | | | | + | |
| Cw*0720/30 | - | | | | | | | | | | | + | | | | | | | | | | | | | | |
| Cw*0722 | - | | | | | | | | | | | w | w | | | | | | | | | | | | | |
| Cw*0726 | - | | | | | | | | | | | + | + | | | | | | + | | | | | | | |
| Cw*0731 | - | | | | | | | | | | | + | + | + | | | | | | | | | | | | |
| Cw*0733N | - | | | | | | | | | | | + | | | | | | | | | | | | | | |
| Cw*0741 | - | | | | | | | | | | w | | | | | | | | | | | | | | | |
| Cw*080101/0102/03/06/08/09/11 | Cw8, - | | | | | | | | | | | | | | | | | | | + | | | | | | |
| Cw*0802/04/07/12/15 | Cw8, - | | | | | | | | | | + | | | | | | | | | + | | | | | | |
| Cw*0805 | - | | | | | | | | | | + | | | | | | | | + | | | | | | | |
| Cw*0814 | - | | | | | | | | | | | | | | | | | | + | | | | | | | |
| Cw*120201-0203/08/18 | - | | | | | | | | | | | | | | | | | | + | + | | | | | | |
| Cw*12030101/030102/0303-0306/06/07/11-13/15/20 | - | | | | | | | | | | | | | | | | | | + | + | | | | | | |
| Cw*120302/14 | - | | | | | | | | | | | | | | | | | | + | | | | | | | |
| Cw*120401 | - | | | | | | | | | | | | | | | | | | w | + | + | | | | | |
| Cw*120402 | - | | | | | | | | | | | | | | | | | | + | w | + | + | | | | |
| Cw*1205 | - | | | | | | | | | | | | | | | | | | + | + | + | | | | | |
| Cw*1209 | - | | | | | | | | | | | | | | | | | | + | | | | | | | |
| Cw*1210 | - | | | | | | + | | | | | | | | | | | + | + | + | | | | | | |
| Cw*1216 | - | | | | | | | | | | | | | | | | | + | + | | | | | | | |
| Cw*1217 | - | | | | | | | | | | | | | | | | | | + | | | | | | | |
| Cw*1219 | - | | | | | | | | | | | | | | | | | + | + | | | | | | | |
| Cw*1221 | - | | | | | | | | | | | | | | | | | + | | | | | | | | |
| Cw*140201/0203-03/05-09 | - | | | | + | | | | | | | | | | | | | | | | | + | | | | |
| Cw*140202 | - | | | | | | | | | | | | | | | | | | | | | + | | | | |
| Cw*140204 | - | | | | | | | | | | | | | | | | | | | | | w | | | | |
| Cw*150201-0204/04-13/15/17-21 | B35, - | | | | | | | | | | | | | | | | | | | | | | + | | | |
| Cw*1503/16 | - | | | | | | | | | | | | | | | | | | w | | | | + | | | |
| Cw*160101-0103/0401/06-08/10/11 | - | | | | | | | | | | | | | | | | | | | | | | | + | | |
| Cw*1602/09 | - | | | | | | | | | | | | | | | | | | | + | | | | + | | |
| Cw*1701-04 | - | | | + | | | | | | | | | | | | | | | w | | | | | | + | |
| Cw*1801/02 | - | | | | | | | | | | | | | | | | | | | | | | | | + | |
| Cw*1803 | - | | | + | | | | | | | | | | | | | | | | | | | | | + | |

w = weak
 ? = nucleotide sequence information not available for the primer matching sequence
bold: mixes which result in PCR fragments of different sizes (the specificities are first indicated all in one row, then split into different groups in the subsequent rows depending on their fragment size)