

101.541-06 – including *Taq* pol., IFU-01
101.541-06u – without *Taq* pol., IFU-02

Visit www.olerup-ssp.com for
“Instructions for Use” (IFU)

Lot No.: **4D3**

Lot-specific information
Olerup SSP® HLA-B*37

Product number:	101.541-06 – including <i>Taq</i> polymerase 101.541-06u – without <i>Taq</i> polymerase
Lot number:	4D3
Expiry date:	2018-07-01
Number of tests:	6
Number of wells per test:	25+1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

This Product Description is only valid for Lot No. 4D3.

Complete product documentation consists of generic Instructions for Use (IFU), lot specific Product Insert, Worksheet and Certificate.

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP®
HLA-B*37 LOT (91V).**

The HLA-B*37 kit is updated for new alleles to enable separation of:

- Confirmed¹ alleles as listed in the IMGT/HLA database
- Polymorphisms in exons outside of the region encoding the peptide binding domain
- Null and Alternatively expressed alleles

A well containing Negative Control primer pairs has been added.

The format of the Product Insert and Worksheet have been changed.

Two wells have been added to HLA-B*37, wells **25 and 26**

¹As described in section Uniquely Identified Alleles.

The HLA-B*37 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP®* HLA-B*37 lot was made (**Lot No. 91V**). The kit design is based on IMGT/HLA database 3.22.0.

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As of lot series V, the Specificity Table is included in the lot-specific Product Insert, and the Interpretation Table is included in the Worksheet.

The primers of the wells detailed below has been exchanged, added or modified.

Well	5'-primer	3'-primer	rationale
24	Added	Added	Negative control moved to well 26, primer pair added for the B*37:52 allele.
25	New	New	New primer pair added for improved allelic resolution of the 37:01 and 37:02 alleles.
26	-	-	Updated negative control added from well 24.

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Well **26** contains Negative Control primer pairs, that will amplify more than 95% of the *Olerup* SSP® HLA Class I, DRB, DQB1, DPB1 and DQA1 amplicons as well as all the amplicons generated by the control primer pairs matching the human growth hormone gene.

HLA-specific PCR product sizes range from 75 to 200 base pairs.
The PCR product generated by the positive control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80	85
5'-primer¹	164	340	440	45	45	43	36
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-TAC ^{3'}
							36
							5'-TAT ^{3'}
3'-primer²	231	2nd I	507	59	58	57	47
	5'-TgC ^{3'}	5'-AAA ^{3'}	5'-TTg ^{3'}	5'-CTC ^{3'}	5'-ggC ^{3'}	5'-CTC ^{3'}	5'-ACA ^{3'}
							48
							5'-gCA ^{3'}
							48
							5'-gCC ^{3'}
							52
							5'-TgT ^{3'}
A*	+	+	+				
B*	+	+	+				
C*	+	+	+				
DRB1				+	+		
DRB3				+	+		
DRB5				+			
DQB1					+		
DPB1						+	
DQA1							+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

²The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

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Lot-specific information

PRODUCT DESCRIPTION

HLA-B*37 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*37:01 to B*37:57 alleles.

PLATE LAYOUT

Each HLA-B*37 test consists of 26 PCR reactions in a 32 well cut PCR plate. Wells 27 to 32 are empty.

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	NC	empty	empty	empty	empty	empty	empty

The 32 well PCR plate is marked with ‘HLA-B*37’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘4D3’.

Wells 1 to 25 – HLA-B*37 high resolution primers.

Well 26 – Negative Control (NC).

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.

The PCR plates are heat-sealed with a PCR-compatible foil.

Please note: When removing each 32 well PCR plate, make sure that the remaining plates stay sealed. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

INTERPRETATION

Due to the sharing of sequence motifs between HLA-B alleles, non-HLA-B*37 alleles will be amplified by primer mixes 1, 2, 4 to 9 and 11 to 25. In addition, a few HLA-A and HLA-C alleles will be amplified by primer mixes 1, 4, 8, 9, 14, 20, 23 and 24. For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*37, i.e. **B*37:01 to B*37:57**, recognized by the HLA Nomenclature Committee in October 2015^{1,2} will be amplified by the primers in the HLA-B*37 SSP kit.

The HLA-B*37 kit enables separation of the confirmed HLA-B*37 alleles as listed in the IMGT/HLA database. An HLA allele is listed as confirmed by IMGT/HLA if it has been sequenced by more than a single laboratory or from multiple sources. Current allele confirmation status for HLA-B*37 alleles is listed below.

The following HLA-B*37 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix
B*37:24, 37:27	21
B*37:26, 37:46	10

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The HLA-B*37 subtyping kit cannot distinguish the B*37:01:01 to B*37:01:11, the B*37:04:01 and 37:04:02 or the B*37:06:01-37:06:02 alleles.

¹HLA-B alleles listed on the IMGT/HLA web page 2015-October-10, release 3.22.0, www.ebi.ac.uk/imgt/hla.

²Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page <http://hla.alleles.org/alleles/deleted.html>.

ALLELE CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
B*37:01:01	Confirmed	B*37:07	Confirmed	B*37:24	Unconfirmed	B*37:42N	Confirmed
B*37:01:02	Confirmed	B*37:08	Unconfirmed	B*37:25	Unconfirmed	B*37:43	Unconfirmed
B*37:01:03	Confirmed	B*37:09	Unconfirmed	B*37:26	Unconfirmed	B*37:44	Unconfirmed
B*37:01:04	Unconfirmed	B*37:10	Confirmed	B*37:27	Unconfirmed	B*37:45	Unconfirmed
B*37:01:05	Unconfirmed	B*37:11	Unconfirmed	B*37:28	Unconfirmed	B*37:46	Unconfirmed
B*37:01:06	Unconfirmed	B*37:12	Unconfirmed	B*37:29	Unconfirmed	B*37:47	Unconfirmed
B*37:01:07	Confirmed	B*37:13	Unconfirmed	B*37:30N	Unconfirmed	B*37:48	Confirmed
B*37:01:08	Unconfirmed	B*37:14	Unconfirmed	B*37:31	Unconfirmed	B*37:49	Unconfirmed
B*37:01:09	Confirmed	B*37:15	Unconfirmed	B*37:32	Unconfirmed	B*37:50	Unconfirmed
B*37:01:10	Unconfirmed	B*37:16Q	Unconfirmed	B*37:33N	Unconfirmed	B*37:51	Unconfirmed
B*37:01:11	Unconfirmed	B*37:17	Confirmed	B*37:34	Unconfirmed	B*37:52	Confirmed
B*37:02	Unconfirmed	B*37:18	Confirmed	B*37:35	Confirmed	B*37:53	Unconfirmed
B*37:03N	Confirmed	B*37:19:01	Unconfirmed	B*37:36	Unconfirmed	B*37:54	Unconfirmed
B*37:04:01	Confirmed	B*37:19:02	Unconfirmed	B*37:37	Unconfirmed	B*37:55	Unconfirmed
B*37:04:02	Confirmed	B*37:20	Unconfirmed	B*37:38	Unconfirmed	B*37:56	Unconfirmed
B*37:05	Unconfirmed	B*37:21	Confirmed	B*37:39	Unconfirmed	B*37:57	Unconfirmed
B*37:06:01	Confirmed	B*37:22	Confirmed	B*37:40	Unconfirmed		
B*37:06:02	Unconfirmed	B*37:23	Unconfirmed	B*37:41	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2015-October-10, release 3.22.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-B*37 homo- and heterozygotes is available upon request.

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Lot-specific information
SPECIFICITY TABLE

HLA-B*37 SSP subtyping

Specificities and sizes of the PCR products of the 25+1 primer mixes used for HLA-B*37 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*37 alleles ³	Other amplified HLA-B alleles ⁴
1	210 bp	800 bp	*37:01:01-37:01:11, 37:03N-37:06:02, 37:08, 37:10-37:11, 37:13-37:18, 37:20-37:38, 37:41-37:43, 37:45-37:55, 37:57	*08:49, C*07:68, C*07:302
2⁵	95 bp 135 bp	800 bp	*37:02 *37:28	*07:197, 15:342, 27:01-27:05:15, 27:05:17-27:05:31, 27:08, 27:10, 27:12-27:13, 27:15-27:18, 27:23, 27:25-27:26, 27:28-27:29, 27:31, 27:36-27:40, 27:42, 27:44-27:45, 27:47-27:69, 27:71-27:75, 27:77, 27:79-27:80, 27:82-27:90:03, 27:92-27:101, 27:103-27:105, 27:108-27:124, 27:126, 27:128-27:129, 27:131-27:135, 27:137, 27:139-27:145, 47:04-47:05, 48:26 *07:27, 07:236, 08:126, 08:131, 08:139, 27:03, 27:05:02-27:05:20, 27:05:22-27:05:31, 27:07:01-27:07:04, 27:09-27:10, 27:13-27:14, 27:16-27:17, 27:19, 27:27-27:29, 27:32, 27:34-27:35, 27:37-27:39, 27:41, 27:43, 27:45-27:48, 27:50:01-27:51, 27:54-27:56, 27:58-27:60, 27:64N, 27:70-27:74, 27:76, 27:78, 27:80-27:82, 27:84-27:85, 27:87-27:88, 27:90:01-27:90:03, 27:92-27:94N, 27:96:01-27:99, 27:101, 27:104, 27:111, 27:116-27:118, 27:121-27:124, 27:127-27:130, 27:132-27:133, 27:135-27:137, 27:139-27:141, 27:143-27:145, 38:17
3	200 bp 235 bp	1070 bp	*37:13 *37:03N	
4	200 bp 240 bp	1070 bp	*37:13 *37:04:01-37:04:02, 37:39, 37:48	*15:32:01-15:32:02, 15:299, 18:18, 35:48, 44:209, 53:07, C*03:90, C*03:103, C*03:178, C*03:300, C*07:03, C*07:186, C*07:242, C*07:265
5	210 bp	1070 bp	*37:01:01-37:04:02, 37:06:01-37:09, 37:12-37:13, 37:15-37:21, 37:23-37:33N, 37:35-37:36, 37:38-37:57	*07:27, 07:236, 08:126, 18:54, 38:17
6	145 bp	1070 bp	*37:05, 37:11, 37:14 ^w , 37:37	*07:65, 07:133-07:134, 08:32, 08:133, 08:155, 15:46, 15:53, 15:106, 15:143, 15:202, 15:212, 15:239, 15:308, 18:01:01:01-18:08, 18:10-18:15,

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				18:17N-18:36, 18:38-18:53, 18:55-18:65, 18:68-18:116, 35:01:01:01-35:01:38, 35:01:40-35:08:01, 35:08:03-35:08:04, 35:08:06-35:24:02, 35:27-35:45, 35:47-35:48, 35:50-35:72, 35:74-35:197, 35:199-35:206, 35:208-35:209, 35:211-35:221, 35:223-35:247, 35:249-35:253, 35:255-35:270, 35:272-35:292, 35:294-35:300, 39:19:01-39:19:02, 39:69, 40:01:01-40:11:02, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:40, 40:42-40:45, 40:48-40:75, 40:77-40:92, 40:94-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:136, 40:138-40:156, 40:158-40:187, 40:189-40:200, 40:202-40:207, 40:209-40:264, 40:266-40:291N, 40:293-40:317, 41:01:01-41:04, 41:05 ^w , 41:06-41:25, 41:27-41:41, 44:09, 44:46, 44:75, 44:90, 44:129, 44:131, 45:01:01-45:15, 45:17, 46:40:01-46:40:02, 47:02, 47:03 ^w , 50:01:01-50:02, 50:04-50:05, 50:07-50:20, 50:31-50:43, 56:06, 56:45, 58:64, 78:01:01-78:09
7	130 bp 195 bp	1070 bp	*37:06:01-37:06:02, 37:42N *37:36	*40:188, 47:01:01:01-47:01:02, 47:05-47:10
8⁵	120 bp	1070 bp	*37:07	*07:02:01-07:18:02, 07:20-07:24, 07:26-07:32, 07:34-07:39, 07:41-07:47, 07:49N-07:50, 07:52, 07:54-07:59, 07:61-07:99, 07:101-07:121, 07:123-07:138, 07:140-07:154, 07:156-07:163, 07:166-07:201N, 07:203-07:208, 07:210-07:219, 07:221-07:222, 07:224-07:225, 07:227-07:234, 07:236-07:256, 08:79, 08:156, 15:138, 15:230, 15:241, 15:297, 40:15-40:16, 40:23, 40:32, 40:98, 40:158, 40:183, 40:198, 44:150, 48:05, 48:08, 48:15, C*02:23, C*03:260, C*04:77
9⁵	80 bp 125 bp 155 bp 215 bp 495 bp	1070 bp	*37:08 *37:42N *37:30N *37:22	*07:27, 07:236, 08:126, 08:131, 08:139, 18:54, 27:92, 38:17, 53:03, A*68:112:02 *15:209N
10^{5,6}	110 bp 145 bp 310 bp	1070 bp	*37:26 *37:14 *37:46	
11⁵	95 bp 215 bp	1070 bp	*37:18 *37:09	*07:04, 07:19, 07:25, 07:146, 08:01:01-08:05, 08:07-08:08N, 08:10-08:11, 08:14-08:15, 08:17-08:19N, 08:21-08:24, 08:26:01-08:39, 08:41-08:48, 08:50-08:54, 08:56:01-08:59:02, 08:61-08:69, 08:71-08:78, 08:80-08:83, 08:85-08:88, 08:90-08:106, 08:108-08:128, 08:130-08:142, 08:144-08:155, 35:87, 41:02:01-41:02:06,

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12	355 bp 205 bp	1070 bp	*37:43 *37:01:01-37:07, 37:09-37:54, 37:56-37:57	*13:23, 13:55, 15:71, 15:175, 15:204, 15:210, 15:212, 15:225, 15:344, 18:12:01-18:12:02, 27:01-27:21, 27:24-27:36, 27:38-27:91, 27:93-27:108, 27:110-27:145, 35:63, 39:101, 40:01:01-40:07, 40:09, 40:11:01-40:11:02, 40:13-40:16, 40:18-40:20, 40:22N-40:24, 40:26-40:39, 40:42-40:48, 40:50-40:57, 40:59-40:67, 40:70:01-40:105, 40:107-40:109, 40:111-40:128, 40:130:01-40:136, 40:138-40:163, 40:165, 40:167-40:190, 40:192-40:209, 40:211-40:218, 40:220-40:228, 40:230-40:231, 40:233-40:243, 40:245-40:312, 40:314-40:317, 41:01:01-41:32, 41:34-41:41, 44:15, 44:18, 44:55, 44:103, 44:131, 44:188, 44:212, 45:01:01-45:17, 48:22, 48:30, 49:01:01-49:09, 49:11-49:14, 49:16-49:23, 49:27-49:30, 49:32-49:40, 50:01:01-50:02, 50:04-50:12, 50:14, 50:16-50:20, 50:31-50:42, 52:51
13	170 bp 195 bp 255 bp	800 bp	*37:15 *37:33N *37:10	*27:94N *13:23, 13:55, 18:09, 27:01, 27:142, 40:47, 40:96, 40:157, 40:201, 44:15, 44:55, 44:103, 44:188, 44:212, 49:02
14^{5,7}	110 bp 245 bp	1070 bp	*37:47 *37:11, 37:37	*27:04:01-27:04:05, 27:06, 27:24-27:25, 27:66N, 27:68-27:69, 27:100, 27:103, 27:105, 27:109, 27:112-27:115, 27:138 *07:143, 08:62, 15:71, 15:175, 15:204, 15:210, 15:212, 15:225, 15:344, 18:01:01:01-18:01:12, 18:01:14-18:01:20, 18:01:22-18:03, 18:05-18:08, 18:10-18:15, 18:17N-18:24, 18:26-18:42, 18:44:01-18:48, 18:50-18:53, 18:55-18:66, 18:68-18:78, 18:80-18:106, 18:109-18:116, 27:08, 27:12, 27:18, 27:26, 27:33, 27:40, 27:44, 35:50, 35:63, 35:84, 35:162, 35:217, 35:231, 35:280, 39:31, 39:101, 40:01:01-40:01:04, 40:01:06-40:09, 40:11:01-40:11:02, 40:14:01-40:16, 40:18, 40:20, 40:22N-40:36, 40:38-40:39, 40:42-40:46, 40:48, 40:50-40:57, 40:59-40:75, 40:77-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:128, 40:130:01-40:134, 40:136, 40:138-40:156, 40:158-40:163, 40:165-40:187, 40:189-40:190, 40:192-40:200, 40:202-40:209, 40:211-40:218, 40:220-40:228, 40:230-40:255, 40:257-40:280, 40:282-40:291N, 40:293-40:305, 40:307-40:317, 41:01:01-41:04,

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15	135 bp	1070 bp	*37:11, 37:37	*07:65, 07:134, 08:32, 08:133, 15:202, 15:239, 15:308, 18:01:01:01-18:01:20, 18:01:22-18:08, 18:10-18:15, 18:17N- 18:36, 18:38-18:47, 18:50-18:53, 18:55- 18:65, 18:68-18:78, 18:80-18:106, 18:109- 18:116, 35:01:01:01-35:02:02, 35:02:04- 35:03:02, 35:03:04-35:08:01, 35:08:03- 35:08:04, 35:08:06-35:18, 35:20:01- 35:24:02, 35:28-35:45, 35:48, 35:50-35:55, 35:57-35:62, 35:64:01-35:72, 35:74-35:153, 35:155-35:197, 35:199-35:202, 35:204- 35:206, 35:208-35:209, 35:211-35:216N, 35:218-35:221, 35:223-35:253, 35:255- 35:270, 35:272-35:273, 35:275-35:298, 35:300, 39:19:01-39:19:02, 40:185, 40:209, 40:308, 46:40:01-46:40:02, 56:06, 56:45, 58:64, 78:01:01-78:05, 78:07-78:08
	315 bp		*37:45	
16	170 bp	1070 bp	*37:09, 37:12, 37:35, 37:56	*07:04, 07:19, 07:25, 07:146, 08:01:01- 08:01:22, 08:01:24-08:05, 08:07-08:12:03, 08:15-08:19N, 08:21-08:24, 08:26:01- 08:27, 08:29-08:39, 08:41-08:48, 08:50- 08:54, 08:56:01-08:69, 08:71-08:73, 08:75- 08:78, 08:80-08:86N, 08:88-08:110, 08:112-08:142, 08:144-08:155, 15:51, 15:83, 15:179:01-15:179:02, 15:199, 15:218Q, 18:56, 18:113, 35:38, 35:87, 35:115, 35:169, 35:260, 38:30, 40:136, 40:231, 40:279, 41:01:01-41:09, 41:11- 41:41, 42:01:01-42:02:01:02, 42:04-42:18, 42:21, 44:14, 44:17, 44:51, 44:62, 44:123, 44:166, 44:213, 44:230, 45:09, 45:14, 51:08:01-51:08:02, 51:20, 51:36, 51:44N, 51:97, 51:141, 51:153, 52:19, 53:22, 55:20, 55:56, 56:13, 57:09, 57:24, 82:01-82:03
	195 bp		*37:20	
17	165 bp 195 bp	1070 bp	*37:25 *37:20	*45:03
18	135 bp	1070 bp	*37:11, 37:14, 37:29, 37:37	*07:65, 07:134, 08:32, 08:133, 15:202, 15:239, 15:308, 18:01:01:01-18:01:20, 18:01:22-18:08, 18:10-18:15, 18:17N- 18:36, 18:38-18:47, 18:50-18:53, 18:55- 18:65, 18:68-18:78, 18:80-18:106, 18:109- 18:116, 35:01:01:01-35:03:02, 35:03:04- 35:08:01, 35:08:03-35:08:04, 35:08:06- 35:18, 35:20:01-35:24:02, 35:28-35:45, 35:48, 35:50-35:51, 35:53N-35:55, 35:57- 35:62, 35:64:01-35:72, 35:74-35:153, 35:155-35:197, 35:199-35:202,

101.541-06 – including *Taq pol.*, IFU-01
101.541-06u – without *Taq pol.*, IFU-02

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Lot No.: **4D3**

Lot-specific information

				35:204-35:206, 35:208-35:209, 35:211-35:216N, 35:218-35:253, 35:255-35:270, 35:272-35:273, 35:275-35:292, 35:294-35:298, 35:300, 39:19:01-39:19:02, 40:185, 40:209, 40:308, 46:40:01-46:40:02, 56:06, 56:45, 58:64, 78:01:01-78:05, 78:07-78:08
19	215 bp	1070 bp	*37:21	*08:62, 18:07:01-18:07:02, 18:29, 18:79, 27:23, 35:50, 35:84, 35:162, 35:217, 35:231, 35:280, 40:07-40:08, 40:13, 40:68, 40:106, 40:162, 40:220, 40:232, 51:103, 51:116, 51:151
	315 bp		*37:45	
20	195 bp 230 bp	800 bp	*37:36 *37:39, 37:48, 37:16Q	*15:32:01-15:32:02, 15:299, 35:48, 44:209, 53:07, C*03:90, C*03:103, C*03:178, C*03:300, C*07:03, C*07:186, C*07:242, C*07:265
21⁶	165 bp 195 bp 270 bp	1070 bp	*37:27 *37:33N *37:24	*27:57 *27:94N *27:122, 40:152
22	175 bp	1070 bp	*37:17	*40:153
23^{5,7}	90 bp	1070 bp	*37:19:01	*14:10, 35:59:01, 35:242, 38:20, 39:42, 39:106, 44:117, C*15:05:08, C*17:01:10
	350 bp		*37:23, 37:43	*27:69, 40:213, 51:32, 58:52
24	170 bp	1070 bp	*37:52	*54:02, C*03:278, C*06:77, C*16:86
25	375 bp	1070 bp	*37:02	*15:129, 15:342, 27:18, 27:29, 47:04-47:05, 48:21, 48:26
26⁸	Negative Control			

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-B*37 SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

101.541-06 – including *Taq* pol., IFU-01
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Lot-specific information

⁴Due to the sharing of sequence motifs between HLA-B alleles, non-HLA-B*37 alleles will be amplified by primer mixes 1, 2, 4 to 9 and 11 to 25. In addition, a few HLA-A and HLA-C alleles will be amplified by primer mixes 1, 4, 8, 9, 14, 20, 23 and 24.

⁵HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁶Primer mixes 10 and 21 may have tendencies of unspecific amplifications.

⁷Primer mix 23 has a tendency of giving rise to primer oligomer formation.

⁸Primer mix 26 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by control primer pairs. PCR product sizes range from 75 to 200 base pairs. The PCR product generated by the control primer pair is 430 base pairs.

‘w’, might be weakly amplified.

101.541-06 – including *Taq* pol., IFU-01
101.541-06u – without *Taq* pol., IFU-02

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Lot No.: **4D3**

Lot-specific information
PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	210	95	200	200	210	145	130	120	80	110	95	205
PCR product		135	235	240			195		125	145	215	
									155	310	355	
									215			
									495			
Length of int. pos. control ¹	800	800	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070
5'-primer(s) ²	368	206	142	368	142	206	149	527	126	206	363	97
	5'-gTC 3'	5'-AgA 3'	5'-TCT 3'	5'-gTC 3'	5'-TCT 3'	5'-gAA 3'	5'-ggT 3'	5'-TgA 3'	5'-ggA 3'	5'-gAC 3'	5'-AgC 3'	5'-TCC 3'
		363	368			206	206		215	3 rd I	483	
		5'-AAT 3'	5'-gTC 3'			5'-gAC 3'	5'-gAA 3'		5'-Cg 3'	5'-Agg 3'	5'-gAA 3'	
							215		261		3 rd I	
							5'-Cg 3'		5'-AAC 3'		5'-Agg 3'	
									355			
									5'-CCA 3'			
3'-primer(s) ³	538	301	337	527	311	311	301	605	301	275	538	259
	5'-gTC 3'	5'-gTC 3'	5'-CTA 3'	5'-CCT 3'	5'-ggg 3'	5'-ggT 3'	5'-gTC 3'	5'-gCT 3'	5'-gTC 3'	5'-TCA 3'	5'-gTC 3'	5'-CTC 3'
		418	527	559	311				471	311	884	259
		5'-gTC 3'	5'-CCT 3'	5'-CAg 3'	5'-ggg 3'				5'-gTT 3'	5'-ggT 3'	5'-ggT 3'	5'-CTC 3'
				583						839		
				5'-gTg 3'						5'-ATT 3'		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec.	170	110	135	170	165	135	215	195	165	175	90	170
PCR product	195	245	315	195	195		315	230	195		350	
		255							270			
Length of int. pos. control ¹	800	1070	1070	1070	1070	1070	1070	800	1070	1070	1070	1070
5'-primer(s) ²	97	97	206	385	385	206	97	149	97	520	369	97
	5'-TCC 3'	5'-TCC 3'	5'-gAC 3'	5'-ggg 3'	5'-ggg 3'	5'-gAC 3'	5'-TCC 3'	5'-ggT 3'	5'-TCC 3'	5'-CgA 3'	5'-TAC 3'	5'-TCC 3'
		704	737	409	416		737	368			3 rd I	
		5'-Tgg 3'	5'-Cgg 3'	5'-ggC 3'	5'-CCg 3'		5'-Cgg 3'	5'-gTC 3'			5'-Agg 3'	
3'-primer(s) ³	227	302	302	538	538	301	272	301	221	3rd I	419	226
	5'-CTg 3'	5'-ggC 3'	5'-ggC 3'	5'-gTC 3'	5'-gTC 3'	5'-gCT 3'	5'-TgA 3'	5'-gTC 3'	5'-ACC 3'	5'-TAT 3'	5'-CgA 3'	5'-CAC 3'
	251	774	916				916	559	251		872	
	5'-CCT 3'	5'-ggT 3'	5'-gAT 3'				5'-gAT 3'	5'-CAg 3'	5'-CCT 3'		5'-TCA 3'	
	309							563	326		884	
	5'-gTg 3'							5'-CgT 3'	5'-TgC 3'		5'-ggT 3'	
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.541-06 – including *Taq* pol., IFU-01
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Lot-specific information

Well No.	25
Length of spec. PCR product	375
Length of int. pos. control ¹	1070
5'-primer(s) ²	272 5' -CTC 3'
3'-primer(s) ³	362 5' -TAT 3'
Well No.	25

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

²The nucleotide position matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

101.541-06 – including *Taq* pol., IFU-01
101.541-06u – without *Taq* pol., IFU-02

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Lot No.: **4D3**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B*37 SSP primer set ²																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.:	201318301	201318302	201318303	201437004	201318305	201318306	201437007	201318308	201437009	201437010	201437011	201318312	201437013	201437014	201437015	201437016
IHCW cell line ¹		B*																		
1	9001 SA	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
2	9280 LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
3	9011 E4181324	*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275 GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*37:01		+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
6	9353 SM	*39:01	*51:01	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
7	9020 QBL	*18:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	-	-
8	9025 DEU	*35:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-
9	9026 YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*27:05		-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
14	9071 OLGA	*15:01	*15:20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*40:01		-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	-	-
16	9037 SWEIG007	*40:02		-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	-	-
17	9282 CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+
18	9257 32367	*14:01	*56:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*18:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	-	-
20	9059 SLE005	*40:01		-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	-	-
21	9064 AMALA	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*35:03		-	-	-	-	-	+	-	-	-	-	-	-	-	-	+	-	-
23	9124 IHL	*40:02	*56:02	-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	-	-
24	9035 JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*07:05	*51:01	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*44:02	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*42:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	+
31	9019 DUCAF	*18:01		-	-	-	-	-	+	-	-	-	-	-	-	-	+	+	-	-
32	9297 HAG	*41:02		-	-	-	-	-	+	-	-	-	-	-	+	+	-	+	-	+
33	9098 MT14B	*40:01		-	-	-	-	-	+	-	-	-	-	-	+	-	+	-	-	-
34	9104 DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*44:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*15:01	*35:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	-
37	9065 HHKB	*07:02		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
38	9099 LZL	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*08:01	*27:05	-	+	-	-	-	-	-	-	-	-	-	+	+	-	-	-	+
40	9134 WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066 TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*42:01	*50:01	-	-	-	-	-	+	-	-	-	-	-	+	+	-	+	-	+
46	9013 SCHU	*07:02		-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*51:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*35:01	*44:03	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	+	-

101.541-06 – including *Taq* pol., IFU-01
101.541-06u – without *Taq* pol., IFU-02

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Lot No.: **4D3**

Lot-specific information

CELL LINE VALIDATION SHEET																
HLA-B*37 SSP primer set²																
					Well											
					17	18	19	20	21	22	23	24	25			
					Prod. No.:	201437017	201318324	201437019	201437020	201562021	201318322	201437023	201562024	201562025		
IHCW cell line¹			B*													
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	-	-		
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	-	-		
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	-		
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	-	-		
5	9009	KAS011	*37:01		-	-	-	-	-	-	-	-	-	-		
6	9353	SM	*39:01	*51:01	-	-	-	-	-	-	-	-	-	-		
7	9020	QBL	*18:01		-	+	-	-	-	-	-	-	-	-		
8	9025	DEU	*35:01		-	+	-	-	-	-	-	-	-	-		
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-		
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-		
11	9051	PITOUT	*44:03		-	-	-	-	-	-	-	-	-	-		
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-		
13	9004	JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-		
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	-	-	-	-	-		
15	9075	DKB	*40:01		-	-	-	-	-	-	-	-	-	-		
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-		
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	-	-	-		
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	-	-		
19	9038	BM16	*18:01		-	+	-	-	-	-	-	-	-	-		
20	9059	SLE005	*40:01		-	-	-	-	-	-	-	-	-	-		
21	9064	AMALA	*15:01		-	-	-	-	-	-	-	-	-	-		
22	9056	KOSE	*35:03		-	+	-	-	-	-	-	-	-	-		
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-		
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-		
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-		
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	-	-		
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	-	-	-	-	-		
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	-	-	-	-	-		
29	9050	MOU	*44:03		-	-	-	-	-	-	-	-	-	-		
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	-	-		
31	9019	DUCAF	*18:01		-	+	-	-	-	-	-	-	-	-		
32	9297	HAG	*41:02		-	-	-	-	-	-	-	-	-	-		
33	9098	MT14B	*40:01		-	-	-	-	-	-	-	-	-	-		
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-		
35	9302	SSTO	*44:02		-	-	-	-	-	-	-	-	-	-		
36	9024	KT17	*15:01	*35:01	-	+	-	-	-	-	-	-	-	-		
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-		
38	9099	LZL	*15:01		-	-	-	-	-	-	-	-	-	-		
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	-	-	-		
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	-	-		
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-		
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-		
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-		
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-		
45	9239	SHJO	*42:01	*50:01	-	-	-	-	-	-	-	-	-	-		
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	-	-		
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	-	-		
48	9303	TER-ND	*35:01	*44:03	-	+	-	-	-	-	-	-	-	-		

¹The provided cell line HLA specificities are retrieved from the <http://www.ihwg.org/hla> web site. The specificity of an individual cell line may thus be subject to change.

101.541-06 – including *Taq* pol., IFU-01
101.541-06u – without *Taq* pol., IFU-02

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Lot No.: **4D3**

Lot-specific information

²The specificity of each primer solution in the kit has been tested against 48 well characterized cell line DNAs and where applicable, additional cell line DNAs.

No DNAs carrying the allele to be amplified by primer solutions 3, 4, 9, 10, 17 and 20 to 24 were available. The specificities of the primers in primer solutions 4, 9, 10, 20, 23 and 24 were tested by separately adding one additional 3'-primer, respectively one additional 5'-primer.

The specificity of the primers in primer solutions 4, 9, 10, 20, 23 and 24 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solutions 3 and 21 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solutions 17 and 22 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 4, 9, 10, 11, 13, 20 and 23 one, two or three of the 3'-primers were not possible to test, and in primer 7, 9, 11, 15, 16, 19 and 20 one or two of the 5'-primers were not possible to test. Additional primers in primer solutions 7, 11, 15 and 19 were tested by separately adding one 5'-primer and/or one 3'-primer.

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Lot No.: **4D3**

Lot-specific information

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