

101.565-12 – including *Taq* pol., IFU-01
101.565-12u – without *Taq* pol., IFU-02

Visit <https://labproducts.caredx.com> for
“Instructions for Use” (IFU)

Lot No.: **2N3**

Lot-specific information
Olerup SSP® HLA-B*38

Product number:	101.565-12 – including <i>Taq</i> polymerase 101.565-12u – without <i>Taq</i> polymerase
Lot number:	2N3
Expiry date:	2026-02-01
Number of tests:	12
Number of wells per test:	31+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. 2N3.

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*38 Lot (2L6)**

- The product documentation has been updated for new alleles of IMGT 3.47.0
- The kit resolution focuses on common and well documented (CWD) alleles¹.

¹As described in section Uniquely Identified Alleles.

The HLA-B*38 primer set, specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP®* HLA-B*38 lot was made (**Lot No. 2L6**).

The HLA-B*38 primer set is unchanged compared to the previous *Olerup SSP®* HLA-B*38 (**Lot no. 2L6**).

¹S. J. Mack, P. Cano, J. A. Hollenbach et al.
Common and well-documented HLA alleles: 2012 update to
the CWD catalogue. Tissue Antigens, 2013, 81, 194–203



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Well **32** contains Negative Control primer pairs, that will amplify a majority 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 200 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*38 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*38:01 to B*38:174 alleles.

PLATE LAYOUT

Each test consists of 32 PCR reactions in a 32 well cut PCR plate.

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	27	28	29	30	31	NC

The 32 well cut PCR plate is marked with ‘HLA-B*38’ in silver/gray ink.

Well No. 1 is marked with the Lot No. ‘2N3’.

Wells 1 to 31 – HLA-B*38 high resolution primers.

Well 32 – 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 covered with a PCR-compatible foil.

Please note: When removing each 32 well PCR plate, make sure that the remaining plates stay covered. 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*38 alleles will be amplified by some primer mixes. For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*38 alleles, i.e. **B*38:01 to B*38:174**, recognized by the HLA Nomenclature Committee in January 2022^{1,2} are amplified by the primers in the HLA-B*38 subtyping kit.

The HLA-B*38 kit enables separation of the confirmed HLA-B*38 alleles as listed in the IMGT/HLA database 3.29.0. 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*38 alleles is listed below.

The HLA-B*38 kit also enables identification of many null and alternatively expressed alleles.



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Lot-specific information

The following HLA-B*38 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix
B*38:11, 38:19	16

¹HLA-B alleles listed on the IMGT/HLA web page 2022-January-13, release 3.47.0, 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>.

ALLELES CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
B*38:01:01	Confirmed	B*38:14	Unconfirmed	B*38:44	Unconfirmed
B*38:01:02	Unconfirmed	B*38:15	Confirmed	B*38:45	Unconfirmed
B*38:01:03	Unconfirmed	B*38:16	Unconfirmed	B*38:46	Unconfirmed
B*38:01:04	Confirmed	B*38:17	Unconfirmed	B*38:47	Unconfirmed
B*38:01:05	Confirmed	B*38:18	Unconfirmed	B*38:48	Unconfirmed
B*38:01:06	Confirmed	B*38:19	Unconfirmed	B*38:49	Unconfirmed
B*38:01:07	Unconfirmed	B*38:20	Confirmed	B*38:50	Unconfirmed
B*38:01:08	Confirmed	B*38:21	Unconfirmed	B*38:51	Unconfirmed
B*38:01:09	Unconfirmed	B*38:22	Unconfirmed	B*38:52	Unconfirmed
B*38:01:10	Unconfirmed	B*38:23	Unconfirmed	B*38:53	Unconfirmed
B*38:01:11	Unconfirmed	B*38:24	Confirmed	B*38:54	Unconfirmed
B*38:01:12	Unconfirmed	B*38:25	Unconfirmed	B*38:55Q	Unconfirmed
B*38:02:01	Confirmed	B*38:26	Unconfirmed	B*38:56	Unconfirmed
B*38:02:02	Confirmed	B*38:27	Confirmed	B*38:57	Unconfirmed
B*38:02:03	Unconfirmed	B*38:28	Confirmed	B*38:58	Unconfirmed
B*38:02:04	Unconfirmed	B*38:29	Confirmed	B*38:59	Unconfirmed
B*38:02:05	Confirmed	B*38:30	Unconfirmed	B*38:60	Unconfirmed
B*38:02:06	Unconfirmed	B*38:31	Confirmed	B*38:61	Confirmed
B*38:02:07	Unconfirmed	B*38:32	Confirmed	B*38:62	Unconfirmed
B*38:03	Unconfirmed	B*38:33	Confirmed	B*38:63	Unconfirmed
B*38:04	Unconfirmed	B*38:34N	Unconfirmed	B*38:64	Confirmed
B*38:05	Unconfirmed	B*38:35	Confirmed	B*38:65	Unconfirmed
B*38:06	Confirmed	B*38:36	Confirmed	B*38:66	Unconfirmed
B*38:07	Unconfirmed	B*38:37	Confirmed	B*38:67	Unconfirmed
B*38:08	Unconfirmed	B*38:38	Unconfirmed	B*38:68Q	Unconfirmed
B*38:09	Confirmed	B*38:39	Unconfirmed		
B*38:10	Unconfirmed	B*38:40	Unconfirmed		
B*38:11	Confirmed	B*38:41	Unconfirmed		
B*38:12	Confirmed	B*38:42	Unconfirmed		
B*38:13	Confirmed	B*38:43	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2017-August-10, release 3.29.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-B*38 homo- and heterozygotes is available upon request.



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Lot-specific information
SPECIFICITY TABLE

HLA-B*38 SSP subtyping

Specificities and sizes of the PCR products of the 31+1 primer mixes used for
HLA-B*38 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*38 alleles ³	Other amplified HLA-B alleles
1	185 bp	800 bp	*38:01:01:01-38:01:07, 38:01:09-38:01:18, 38:01:20-38:02:02:02, 38:02:04-38:03, 38:07-38:24, 38:26-38:32, 38:34N-38:83N, 38:84 ^w , 38:85-38:88, 38:90-38:97, 38:160-38:174	*07:02:32, 07:85:02, 14:01:01:01-14:01:05, 14:01:07-14:01:13, 14:07N-14:08:02, 14:10, 14:12, 14:14, 14:19, 14:26, 14:32, 14:40, 14:46-14:47, 14:49, 14:53-14:55, 14:65, 14:71, 14:77-14:78N, 14:80-14:83, 14:86-14:87, 14:95, 14:97, 14:102-14:105, 14:108Q, 18:01:37 ^w , 27:07:04 ^w , 39:01:01:01-39:01:01:25, 39:01:03:01-39:01:08, 39:01:10-39:01:25, 39:01:27-39:01:29, 39:01:31-39:02:01:02, 39:03:01:01-39:03:01:03, 39:05:01:01-39:06:02:08, 39:06:04-39:09:05, 39:11, 39:14:01:01-39:15, 39:18, 39:19:02, 39:22, 39:24:01-39:24:02, 39:25N-39:30, 39:31:01:01 ^w -39:31:01:02 ^w , 39:32-39:39:01, 39:40:01N-39:44, 39:46-39:48, 39:50-39:62, 39:64-39:71, 39:73-39:75, 39:77, 39:79-39:82, 39:83:02, 39:84-39:88, 39:90-39:91, 39:93-39:95N, 39:97N-39:98, 39:100, 39:102-39:104, 39:106-39:109, 39:111-39:125, 39:127, 39:128 ^w , 39:130, 39:132, 39:134-39:142N, 39:144, 39:146N-39:161N, 39:163, 39:165-39:169, 39:171-39:174, 39:176-39:177, 39:178 ^w , 39:179, 39:182-39:183, 39:185, 39:187, 67:01:01, 67:03-67:04, 67:06-67:07
2	190 bp	800 bp	*38:01:01:01-38:02:11, 38:04-38:12, 38:15, 38:17-38:25, 38:27, 38:29-38:40, 38:42-38:45, 38:47-38:97, 38:160-38:174	*07:16, 07:27, 07:37:01-07:38, 07:50, 07:75:01:01-07:75:01:02, 07:91, 07:180, 07:207, 07:219, 07:228:01-07:228:02, 07:306, 07:453, 08:03, 08:23, 08:54:01-08:54:02, 08:110, 08:133, 08:139, 08:255, 08:271, 14:14, 14:18, 14:73, 15:03:01:01-15:03:13, 15:09:01-15:10:08, 15:18:01:01-15:18:09, 15:23, 15:29:01:01-15:29:01:02, 15:37, 15:47:01-15:47:02, 15:49, 15:51-15:52, 15:54, 15:62, 15:64:01-15:64:02, 15:68-15:69, 15:72, 15:74, 15:80, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:108, 15:114-15:115, 15:119, 15:123-15:124, 15:127, 15:131-15:134, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 15:197:01-15:198, 15:200, 15:210, 15:220:01:01-15:221, 15:226N, 15:229, 15:235, 15:238, 15:242:01-15:243, 15:251:01-15:253, 15:263, 15:266, 15:274-15:275:02, 15:281-15:282, 15:290, 15:292-15:293, 15:306-15:307, 15:311-15:314, 15:323, 15:329, 15:335, 15:337-15:338, 15:351, 15:354, 15:369, 15:376, 15:379-15:380N, 15:382, 15:388-15:389, 15:414, 15:426-15:427, 15:429, 15:433-15:436, 15:439, 15:444-15:445, 15:447-15:448,



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				15:451, 15:455, 15:475, 15:487N, 15:498, 15:502-15:503, 15:506, 15:509, 15:517, 15:526-15:527, 15:530, 15:539, 15:545, 15:548, 15:556, 15:560, 15:570-15:571, 15:573, 15:582, 15:588, 15:607, 15:610-15:611, 15:614:01:01-15:614:01:02, 15:616Q-15:617, 15:619-15:620, 15:628, 18:01:01:01-18:01:01:70, 18:01:03-18:01:22, 18:01:24-18:02:02, 18:05:01:01-18:15, 18:17N-18:28, 18:30-18:79, 18:81-18:93, 18:95-18:97, 18:99-18:101, 18:103-18:106Q, 18:108-18:124, 18:126-18:131:01:02, 18:133-18:141, 18:143-18:151, 18:153-18:170, 18:173, 18:175-18:197, 18:199-18:202, 18:204-18:219, 35:25, 35:124-35:125, 35:142, 35:162, 35:267, 35:320, 35:487, 35:494, 37:01:01:01-37:01:11, 37:01:13-37:21, 37:23-37:36, 37:38-37:59, 37:61-37:94, 37:96-37:102, 39:05:01:01-39:05:05, 39:07-39:08, 39:11, 39:13:01-39:13:02, 39:20, 39:37:01:01-39:37:01:02, 39:49, 39:55-39:56, 39:113, 39:118, 39:147N, 39:149, 39:161N, 39:163, 39:165-39:168, 39:170, 39:172, 39:174, 39:186, 40:12:01-40:12:02, 40:149, 41:22, 42:11, 44:130, 44:156, 44:221, 44:224, 44:258, 48:01:01:01-48:01:09, 48:02:01, 48:02:03-48:47, 48:49-48:53, 49:25, 50:77, 51:116, 51:176, 51:179, 51:218, 51:354, 52:16, 52:27, 52:77, 53:43:01-53:43:02, 57:58, 57:80, 58:12, 81:08, C*06:147
3	170 bp	800 bp	*38:01:01:01-38:02:11, 38:04-38:05, 38:08-38:15, 38:17-38:25, 38:27, 38:29-38:45, 38:47-38:53, 38:55Q-38:73, 38:75-38:97, 38:160-38:165N, 38:167-38:174	*07:69, 07:85:01-07:85:02, 07:180, 07:306, 08:65, 08:226, 08:228, 14:01:01:01-14:01:07, 14:01:09-14:20, 14:22-14:35, 14:37-14:41N, 14:43-14:47, 14:50-14:53, 14:55-14:56, 14:58-14:72N, 14:74-14:98, 14:100N-14:109, 15:09:01-15:10:08, 15:18:01:01-15:18:09, 15:23, 15:37, 15:51-15:52, 15:72, 15:80, 15:90, 15:93, 15:99, 15:108, 15:114-15:115, 15:119, 15:124, 15:133-15:134, 15:153, 15:161, 15:176, 15:186, 15:197:01-15:198, 15:200, 15:221, 15:226N, 15:229, 15:238, 15:243, 15:252, 15:263, 15:275:01-15:275:02, 15:290, 15:292-15:294N, 15:306-15:307, 15:311-15:314, 15:323, 15:329, 15:335, 15:337-15:338, 15:351, 15:354, 15:376, 15:380N, 15:382, 15:388, 15:414, 15:426-15:427, 15:433-15:436, 15:439, 15:445, 15:447, 15:451, 15:455, 15:487N, 15:498, 15:503, 15:506, 15:526, 15:530, 15:548, 15:563, 15:570, 15:573, 15:607, 15:611-15:612, 15:620, 18:33, 37:57, 39:01:01:01-39:01:01:25, 39:01:03:01-39:01:37, 39:03:01:01-39:07, 39:09:01:01-39:09:05, 39:11-39:12:01:02, 39:14:01:01-39:15, 39:18-39:19:02, 39:22, 39:24:01-39:38Q, 39:40:01N-39:48, 39:50-39:51, 39:53, 39:55-39:57, 39:59-39:62, 39:64-39:82, 39:84-39:87N, 39:90-39:95N, 39:97N-39:98, 39:100, 39:102-39:104, 39:106-39:109, 39:111-39:125, 39:127-39:130, 39:132-39:134, 39:136-39:142N, 39:144, 39:146N-39:153, 39:155-39:161N, 39:163,



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4 ⁴	105 bp	1070 bp	*38:01:01:01- 38:01:07, 38:01:09- 38:01:14, 38:01:16- 38:01:21, 38:05, 38:09-38:14, 38:16, 38:19-38:22, 38:24, 38:26-38:28, 38:30- 38:34N, 38:36- 38:42, 38:51-38:61, 38:63, 38:65-38:71, 38:73, 38:77-38:78, 38:80N, 38:83N, 38:86-38:88, 38:90- 38:91, 38:93-38:96, 38:161, 38:166, 38:168-38:171	39:165-39:169, 39:171-39:174, 39:176-39:179, 39:181-39:183, 39:185, 39:187
				*14:93, 49:26, 51:01:68, 52:01:10, A*23:01:18, A*25:01:08
5 ⁶	210 bp	1070 bp	*38:02:01:01-38:04, 38:08, 38:15, 38:18, 38:23, 38:29, 38:35, 38:43-38:45, 38:47- 38:50, 38:62, 38:64, 38:72, 38:74-38:76, 38:79, 38:82, 38:84- 38:85, 38:89, 38:92, 38:97, 38:160, 38:162-38:165N, 38:167, 38:172- 38:174	*07:149, 07:453, 08:02, 08:117, 08:255, 08:271, 15:115, 18:09, 37:01:02, 37:10, 44:130, 44:156, 44:221, 44:224, 44:258
6 ⁵	140 bp 175 bp	800 bp	*38:35, 38:81 *38:03, 38:34N	*07:27, 07:50, 07:400, 07:453, 08:04:01-08:04:02, 08:17, 08:54:01-08:54:02, 08:110, 08:285, 14:73, 15:03:01:01-15:03:11, 15:03:13, 15:47:01- 15:47:02, 15:54, 15:61-15:62, 15:64:01-15:64:02, 15:68-15:69, 15:91, 15:98, 15:103, 15:123, 15:127, 15:131-15:132, 15:151, 15:156, 15:158, 15:173, 15:210, 15:220:01:01-15:220:03, 15:235, 15:242:01-15:242:02, 15:251:01-15:251:03, 15:253, 15:266, 15:274, 15:281-15:282, 15:369, 15:379, 15:389, 15:397, 15:429, 15:444, 15:448, 15:475, 15:502, 15:517, 15:527, 15:539, 15:545, 15:556, 15:560, 15:571, 15:582, 15:588, 15:610, 15:614:01:01-15:614:01:02, 15:616Q-15:617, 15:628, 18:01:01:01-18:03:02, 18:05:01:01-18:06, 18:08-18:15, 18:17N-18:28, 18:30-18:32, 18:34- 18:78, 18:81-18:97, 18:99-18:101, 18:103- 18:106Q, 18:108-18:124, 18:126-18:135:01:02, 18:137-18:154N, 18:156:01:01-18:181, 18:183- 18:217, 18:219, 37:01:01:01-37:01:11, 37:01:13- 37:20, 37:23-37:25, 37:27-37:56, 37:58-37:59, 37:61-37:66, 37:68-37:78, 37:80-37:94, 37:96- 37:102, 39:02:01:01-39:02:03, 39:08, 39:13:01- 39:13:02, 39:23, 39:39:01-39:39:02, 39:49, 39:88, 39:101, 39:105, 39:110, 39:162, 39:164, 39:184, 40:12:01-40:12:02, 40:149, 41:22, 42:11, 44:130,



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7 ⁵	160 bp	800 bp	*38:03-38:04, 38:25	44:156, 44:221, 44:224, 44:258, 48:01:01:01-48:01:09, 48:02:01, 48:02:03-48:05, 48:07-48:30, 48:32-48:53, 49:25, 50:77, 52:16, 52:27, 52:77
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	185 bp	800 bp	*38:05, 38:33	*14:02:01:01-14:02:02, 14:02:04-14:02:05, 14:02:07-14:03, 14:04 ^w , 14:05-14:06:02, 14:09, 14:11, 14:13, 14:15-14:18, 14:20, 14:22-14:23, 14:25, 14:27, 14:29-14:31, 14:33-14:39, 14:41N, 14:42:02-14:45, 14:48, 14:50-14:52, 14:56-14:64, 14:67-14:70Q, 14:72N-14:76N, 14:79N, 14:84-14:85N, 14:88-14:94, 14:96, 14:98-14:101N, 14:106-14:107, 14:109, 15:189:01-15:189:02, 35:01:64, 35:03:17, 35:26, 35:29:03, 39:04, 39:129, 51:01:68, C*02:02:07, C*05:01:06
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	145 bp		*38:08, 38:18, 38:27	*07:385, 18:86, 39:102, 44:460
12^{4,7}	100 bp	800 bp	*38:09	
	135 bp		*39:172	
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15 ⁷	230 bp	1070 bp	*38:01:01:01- 38:02:11, 38:04, 38:06-38:12, 38:15- 38:25, 38:27-38:32, 38:34N-38:40, 38:42-38:83N, 38:84 ^w , 38:85-38:88, 38:90-38:97, 38:160- 38:174	58:08:01-58:08:02, 58:19, 58:46, 58:78, 58:91, 59:12, 78:01:01:02-78:03, 78:05-78:07, 78:09 *07:16, 07:27, 07:37:01-07:38, 07:50, 07:75:01:01-07:75:01:02, 07:91, 07:180, 07:207, 07:219, 07:228:01-07:228:02, 07:306, 07:453, 13:14, 13:83, 14:14, 15:68, 15:71, 15:175, 15:381, 15:446, 15:556, 15:571, 15:582, 18:01:01:01- 18:01:01:70, 18:01:03-18:01:12, 18:01:14- 18:01:22, 18:01:24-18:02:02, 18:05:01:01-18:15, 18:17N-18:24, 18:26-18:67, 18:69, 18:71-18:93, 18:95-18:106Q, 18:108-18:124, 18:126- 18:131:01:02, 18:133-18:141, 18:143-18:151, 18:153-18:170, 18:173, 18:175-18:196, 18:199- 18:202, 18:204-18:219, 27:01, 27:18, 27:23, 27:29, 27:44, 27:92, 27:119, 27:131, 35:50, 35:84, 35:162, 35:197, 35:231, 35:267, 35:269, 35:411, 35:423, 35:494, 37:01:01:01-37:36, 37:38-37:54, 37:56-37:59, 37:61, 37:62 ^w , 37:63-37:84, 37:86N- 37:98, 37:100-37:102, 39:05:01:01-39:05:05, 39:07-39:08, 39:11, 39:13:01-39:13:02, 39:20, 39:37:01:01-39:37:01:02, 39:49, 39:55-39:56, 39:113, 39:118, 39:147N, 39:149, 39:161N, 39:163, 39:165-39:168, 39:170, 39:172, 39:174, 39:186, 40:02:01:01-40:06:14, 40:06:16-40:06:22, 40:06:24-40:06:29, 40:08:01:01-40:09, 40:11:01:01-40:11:02, 40:13, 40:18-40:20:01:02, 40:24, 40:26-40:29, 40:35:01-40:35:03, 40:37, 40:39-40:40, 40:44, 40:56, 40:64:01:01-40:64:02, 40:68, 40:70:01-40:71, 40:74-40:75, 40:78, 40:82- 40:83, 40:85-40:86, 40:89-40:91, 40:93-40:99, 40:103-40:105, 40:107, 40:109, 40:111, 40:115, 40:119-40:120, 40:122, 40:127, 40:131, 40:133Q, 40:142N-40:145, 40:148-40:149, 40:157, 40:159, 40:161-40:162, 40:165, 40:167, 40:169, 40:173- 40:174, 40:176-40:177, 40:180-40:181, 40:184, 40:189-40:190, 40:200-40:203, 40:205-40:206, 40:209-40:211, 40:214, 40:220, 40:224-40:226, 40:229, 40:232, 40:243-40:244, 40:246, 40:248, 40:254-40:255, 40:266-40:271, 40:274-40:276, 40:283-40:284, 40:287, 40:289-40:297, 40:302- 40:307, 40:309, 40:311, 40:313-40:314, 40:317, 40:320, 40:322, 40:330-40:331, 40:334:01- 40:335, 40:337N, 40:340-40:341, 40:343, 40:345N, 40:347-40:351, 40:354, 40:356, 40:359, 40:361N-40:364, 40:366, 40:369, 40:371, 40:373- 40:376, 40:378, 40:384, 40:387-40:390, 40:399N, 40:405, 40:408-40:415, 40:423, 40:425, 40:427, 40:429, 40:432, 40:434-40:435, 40:437-40:438N, 40:440-40:442, 40:444-40:445, 40:451, 40:453- 40:455, 40:458-40:460, 40:464-40:465, 40:467- 40:468, 40:471-40:473, 40:476, 40:478, 40:481N- 40:482, 40:484, 40:487N-40:489, 40:492-40:494, 40:500, 40:505, 40:511N, 42:11, 44:103, 44:130- 44:131, 44:212, 44:224, 48:01:01:01-48:21, 48:23-48:47, 48:49-48:53, 49:31, 50:43, 51:57,
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17	150 bp	800 bp	*38:23	*15:554, 39:73, C*07:896
18 ⁶	160 bp	800 bp	*38:24, 38:37	
19	175 bp	1070 bp	*38:10, 38:30, 38:36, 38:50, 38:63	*07:05:01:01-07:06:05, 07:32, 07:34, 07:40, 07:53, 07:69, 07:78, 07:80, 07:90, 07:97, 07:105, 07:112, 07:123, 07:137-07:138, 07:140, 07:176, 07:182N, 07:201N, 07:206-07:207, 07:209-07:210, 07:213-07:214, 07:222, 07:249, 07:258, 07:262:01-07:262:02, 07:264, 07:270, 07:278, 07:283, 07:287, 07:293, 07:304, 07:317, 07:324, 07:327, 07:332-07:333, 07:340, 07:349, 07:352-07:353, 07:356-07:358, 07:368, 07:378, 07:387, 07:389, 07:395, 07:399, 07:407-07:408, 07:426Q, 07:434, 07:443, 08:01:01:01-08:01:22, 08:01:24-08:05, 08:08N-08:13, 08:15-08:27, 08:29-08:36, 08:38:01-08:48, 08:50-08:54:02, 08:56:01-08:73, 08:75-08:86N, 08:88, 08:90-08:106, 08:108 ^w , 08:109-08:110, 08:112-08:155, 08:157-08:199, 08:201-08:226, 08:228-08:250, 08:252N-08:254, 08:256-08:263, 08:265-08:289, 08:290 ^w , 08:292, 13:01:01:01-13:01:02, 13:01:04-13:02:16, 13:02:18-13:02:22, 13:02:24-13:03, 13:06-13:07N, 13:09, 13:11-13:23, 13:25, 13:27-13:33, 13:36-13:45, 13:47-13:50, 13:52-13:71, 13:73-13:78, 13:80-13:85, 13:86 ^w , 13:87-13:88, 13:90-13:120, 13:123Q-13:125, 13:128-13:157, 13:158 ^w , 13:160-13:171, 14:13, 14:53, 14:96, 15:09:01-15:09:02, 15:30:01:01-15:30:01:03, 15:42, 15:58, 15:73:01:01-15:73:01:02, 15:83:01:01-15:83:01:02, 15:86, 15:150, 15:188, 15:224, 15:229, 15:243, 15:252, 15:303, 15:324, 15:329, 15:361, 15:435, 15:453, 15:460, 15:485-15:486, 15:541, 15:552, 18:26, 18:61, 18:97, 18:189, 18:191, 27:07:01-27:07:06, 27:11, 27:20, 27:24, 27:27, 27:33, 27:43, 27:125, 27:130, 27:153, 27:164, 27:168, 27:180, 27:187, 27:218-27:219, 27:233, 27:251, 35:02:01:01 ^w -35:02:19 ^w , 35:04:01:01-35:04:03, 35:06, 35:09:01:01-35:09:04, 35:12:01:01-35:12:04, 35:18, 35:22:01:01-35:22:01:02, 35:31, 35:44, 35:59:01-35:60, 35:81 ^w , 35:83 ^w , 35:87-35:88, 35:95 ^w , 35:129N ^w , 35:149, 35:154 ^w , 35:157 ^w , 35:162 ^w , 35:172 ^w , 35:182 ^w -35:184 ^w , 35:201, 35:211 ^w , 35:220 ^w , 35:230, 35:233, 35:251:01-35:251:02, 35:258 ^w , 35:266, 35:270 ^w , 35:273 ^w , 35:285 ^w ,



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24⁴	95 bp	1070 bp	*38:17	*27:07:04
25	215 bp	1070 bp	*38:31	
26⁴	80 bp	1070 bp	*38:06-38:07	*08:32, 15:376, 18:72:02-18:72:03, 35:01:46, 35:03:25, 35:08:15, 39:19:01, 51:01:53, 53:43:02, 55:113, 56:45, A*03:67, C*07:209
27⁶	460 bp	1070 bp	*38:01:01:01-38:01:02, 38:01:04-38:01:12, 38:01:14-38:01:21, 38:05-38:07, 38:10-38:14, 38:16, 38:19-38:22, 38:24-38:28, 38:30-38:34N, 38:36-38:40, 38:42, 38:51-38:61, 38:65-38:66, 38:68L-38:71, 38:73, 38:77-38:78, 38:80N-38:81, 38:83N, 38:86-38:88, 38:90-38:91, 38:93-38:96, 38:161, 38:166, 38:168-38:171	*08:03, 08:78, 14:93, 15:13:02, 18:136, 18:194:01:01-18:194:01:02, 35:471, 37:34, 41:46, 41:60, 44:06, 44:18:01:01-44:18:01:02, 44:25, 44:50:01, 44:50:03, 44:95, 49:01:01:01-49:01:13, 49:01:15-49:01:22, 49:03-49:14, 49:16-49:21, 49:23-49:66, 49:68-49:69, 49:71-49:74, 49:76, 51:01:01:01-51:01:24, 51:01:26-51:01:36, 51:01:38-51:01:51, 51:01:53-51:01:96, 51:02:01:01-51:02:04, 51:02:06-51:09:02, 51:11N-51:24:01, 51:24:04-51:24:05, 51:26-51:39, 51:40:02-51:46, 51:48, 51:50-51:53, 51:55-51:60, 51:61:02-51:77, 51:79-51:80, 51:82-51:85, 51:87-51:108, 51:110N-51:122, 51:124-51:125, 51:128-51:184N, 51:186-51:200, 51:202-51:219, 51:221, 51:223-51:246, 51:248-51:278, 51:280-51:311, 51:313N-51:317, 51:319-51:323, 51:325N-51:337, 51:339-51:340, 51:342-51:358, 52:01:01:01-52:01:03, 52:01:05-52:01:06, 52:01:08-52:01:14, 52:01:16-52:01:27, 52:01:29-52:08, 52:10:01, 52:10:03-52:19, 52:21:01-52:53, 52:55-52:67, 52:69-52:96N, 52:98-52:106, 53:01:01:01-53:01:02, 53:01:04-53:02, 53:04, 53:06-53:08:01, 53:10, 53:14-53:15, 53:17:01-53:30, 53:32, 53:34-53:35, 53:37, 53:39-53:54, 53:56-53:66, 53:68, 54:12, 55:103, 56:21, 56:65, 57:01:19, 57:14:01, 58:01:01:01-58:01:04, 58:01:06-58:01:11, 58:01:13-58:02:02, 58:04-58:16:02, 58:18-58:26, 58:28:01-58:29, 58:31N-58:63, 58:65-58:74, 58:76-58:81, 58:83-58:115, 58:117-58:135, 59:01:01:01-59:07, 59:09-59:12, A*24:172:02
28⁴	120 bp	1070 bp	*38:61, 38:64	
29	280 bp	1070 bp	*38:68L	



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31	415 bp	1070 bp	*38:14, 38:26	*07:02:01:01-07:02:05, 07:02:07-07:02:66, 07:02:68-07:02:81, 07:02:83-07:12, 07:14:01-07:14:02, 07:17-07:26, 07:28-07:36, 07:39-07:49N, 07:51-07:64, 07:66-07:74, 07:76-07:80, 07:82-07:90, 07:93-07:104, 07:106-07:179, 07:181N-07:199, 07:201N-07:206, 07:208-07:216, 07:218, 07:220-07:227, 07:229:01-07:235, 07:237-07:270, 07:272N-07:298, 07:300-07:303:02, 07:305, 07:307-07:314, 07:316N, 07:318N-07:346, 07:348-07:447, 07:449-07:452, 07:454-07:457, 08:01:01:01-08:01:03, 08:01:05-08:02, 08:04:01-08:05, 08:07-08:14, 08:16-08:22, 08:24-08:35, 08:37-08:51, 08:53:01-08:53:02, 08:55-08:71, 08:73-08:109, 08:111-08:116, 08:118-08:125, 08:127-08:130, 08:132, 08:134-08:138, 08:140-08:157, 08:159-08:197, 08:199-08:216, 08:218-08:254, 08:256-08:266, 08:268-08:270Q, 08:272-08:292, 14:01:01:01-14:01:04, 14:01:06-14:02:07, 14:02:09-14:02:19, 14:02:21-14:13, 14:15-14:17, 14:19-14:59, 14:61-14:62, 14:64-14:71, 14:74-14:96, 14:98-14:109, 15:180, 39:01:01:01-39:01:01:25, 39:01:03:01-39:04, 39:06:01:01-39:06:04, 39:06:06-39:06:07, 39:09:01:01-39:09:04, 39:10:01-39:10:02, 39:12:01:01-39:12:01:02, 39:14:01:01-39:19:02, 39:22-39:24:01, 39:24:03-39:26, 39:28-39:36, 39:38Q-39:48, 39:50-39:54, 39:57-39:112, 39:114-39:117, 39:119-39:142N, 39:144-39:146N, 39:148, 39:150Q-39:160, 39:162, 39:169, 39:171, 39:173, 39:175N-39:185, 39:187, 40:43, 40:166 ² , 41:27, 41:47, 42:01:01:01-42:02:02, 42:04-42:10, 42:12-42:32, 45:06, 48:48, 50:52, 56:68, 67:01:01-67:01:03, 67:03-67:07, 81:02:01-81:02:02
32⁸	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*38 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



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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.

⁴HLA-specific PCR products shorter than 125 base pairs have a lower intensity and are less sharp than longer PCR products.

⁵Primer mixes 6, 7, 14 and 23 have a tendency giving rise to primer oligomer formation.

⁶Primer mixes 5, 18 and 27 may have a tendency of unspecific amplification.

⁷Primer mixes 12, 15 and 22 may give rise to a lower yield of HLA-specific PCR product than the other B*38 primer mixes.

⁸Primer mix 32 contains a negative control, which will amplify a majority of HLA amplicons as well as 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 and the PCR product generated by the HGH positive control primer pair is 200 base pairs.

Abbreviations

w: might be weakly amplified.

?: nucleotide sequence information not available for the primer matching sequence.



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PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	185	190	170	105	210	140	160	185	145	85	90	100
						175	195	230	205	145	145	135
										180		
Length of int. pos. control ¹	800	800	800	1070	1070	800	800	800	1070	1070	1070	800
5'-primer(s) ²	103	142	142	246	142	142	142	103	206	106	246	449
	5'-CCT 3' 5'	5'-TCT 3' 5'	5'-TCT 3' 5'	5'-gAA 3' 5'	5'-TCT 3' 5'	5'-TCT 3' 5'	5'-TCT 3' 5'	5'-CCg 3' 5'	5'-gAC 3' 5'	5'-CCA 3' 5'	5'-gAA 3' 5'	5'-CCC 3' 5'
							382	346	382	142	463	483
							5'-TgC 3' 5'	5'-ggC 3' 5'	5'-TgC 3' 5'	5'-TCA 3' 5'	5'-TgA 3' 5'	5'-gAg 3' 5'
								355		193	660	
								5'-TCA 3'		5'-CCA 3' 5'	5'-gAA 3'	
								363		206		
								5'-AAT 3'		5'-gAC 3'		
3'-primer(s) ³	246	292	272	309	309	242	259	246	309	246	296	544
	5'-TAT 3' 5'	5'-gTA 3' 5'	5'-TgC 3' 5'	5'-ATC 3' 5'	5'-gTg 3' 5'	5'-CCC 3' 5'	5'-CTC 3' 5'	5'-TAT 3' 5'	5'-ATC 3' 5'	5'-TAT 3' 5'	5'-CTA 3' 5'	5'-ggT 3' 5'
	246	292			315	272	286	544	544		343	
	5'-TAT 3' 5'	5'-gTA 3'			5'-AgT 3' 5'	5'-Tgg 3' 5'	5'-CTA 3' 5'	5'-ggT 3' 5'	5'-ggT 3'		5'-T 3'	
		292				286	544				559	
		5'-gTA 3'				5'-CTA 3' 5'	5'-ggT 3'				5'-CAT 3'	
											774	
											5'-ggT 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. PCR product	175	170	230	220	150	160	175	265	115	175	155	95
				350						210		
				425								
Length of int. pos. control ¹	800	1070	1070	1070	800	800	1070	1070	1070	1070	1070	1070
5'-primer(s) ²	405	527	103	44	355	533	412	44	463	368	412	246
	5'-CgT 3' 5'	5'-TgA 3' 5'	5'-CCT 3' 5'	5'-ggC 3' 5'	5'-CCT 3' 5'	5'-ggg 3' 5'	5'-ATA 3' 5'	5'-ggC 3' 5'	5'-TgA 3' 5'	5'-gTC 3' 5'	5'-ATA 3' 5'	5'-gAA 3' 5'
	411		103	363		547				373		
	5'-CAC 3'		5'-CCT 3' 5'	5'-AgC 3'		5'-CCC 3'				5'-gCC 3'		
	412									412		
	5'-ATA 3'									5'-ATg 3'		
3'-primer(s) ³	544	3 rd I	292	226	463	3 rd I	544	142	538	544	527	301
	5'-ggT 3' 5'	5'-TAT 3' 5'	5'-gTA 3' 5'	5'-CAC 3' 5'	5'-gCT 3' 5'	5'-TAT 3' 5'	5'-ggC 3' 5'	5'-TgC 3' 5'	5'-gTC 3' 5'	5'-ggT 3' 5'	5'-CCT 3' 5'	5'-gTC 3' 5'
			292	301								
			5'-gTA 3' 5'	5'-gTC 3'								
			292	544								
			5'-gTA 3' 5'	5'-ggT 3'								
Well No.	13	14	15	16	17	18	19	20	21	22	23	24



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Well No.	25	26	27	28	29	30	31
Length of spec. PCR product	215	80	460	120	280	195	415
Length of int. pos. control ¹	1070	1070	1070	1070	1070	1070	1070
5'-primer(s) ²	409	167	311	246	769	420	44
	5' -ggC 3' 5' -gCA 3' 5' -gAT 3' 5' -gAA 3' 5' -..A 3' 5' -TTC 3' 5' -ggC 3'						
3'-primer(s) ³	581	206	483	320	916	572	292
	5' -ATg 3' 5' -CCg 3' 5' -gTg 3' 5' -AgT 3' 5' -gAC 3' 5' -gCg 3' 5' -gTC 3'						
				337			
				5' -CTT 3'			
Well No.	25	26	27	28	29	30	31

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.



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Lot-specific information

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101.565-12u – without *Taq* pol., IFU-02

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Lot-specific information

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.

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 alleles to be amplified by primer solutions 10, 11, 16 to 18, 20, 24 to 26 and 28 to 30 were available. The specificities of the primers in primer solutions 10, 11, 16, 17, 20, 24, 26 and 30 were tested by separately adding one or more additional 5'-primers, respectively one or more additional 3'-primers. In primer solutions 18 and 29 it was only possible to test the 3'-primer, the 5'-primers were not possible to test. In primer solutions 25 and 28 it was only possible to test the 5'-primer, the 3'-primers were not possible to test. In primer solutions 7 to 9, 11 to 13 and 22 one or two of the 5'-primers were not possible to test, and in primer solutions 5 to 7 and 11 one or two of the 3'-primers were not possible to test. In addition, one or more 3'- and/or 5'-primers in primer solutions 8 and 9 were tested by separately adding one or two 5'-primers and/or 3'-primers respectively.



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Lot No.: **2N3**

Lot-specific information

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