

101.515-12 – including *Taq* pol., IFU-01
101.515-12u – without *Taq* pol., IFU-02

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

Lot No.: **7K5**

Lot-specific information
Olerup SSP® HLA-B*13

Product number:	101.515-12 – including <i>Taq</i> pol. 101.515-12u – without <i>Taq</i> pol.
Lot number:	7K5
Expiry date:	2024-02-01
Number of tests:	12
Number of wells per test:	30+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. 7K5.

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*13 Lot (2K0)**

- The product documentation has been updated for new alleles of IMGT 3.38.0
- The kit resolution focuses on common and well documented (CWD) alleles¹.

¹As described in section Uniquely Identified Alleles.

The HLA-B*13 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP®* HLA-B*13 lot was made (**Lot No. 2K0**).

The HLA-B*13 primer set is unchanged compared to the previous *Olerup SSP®* HLA-B*13 (**Lot No. 2K0**).

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 **31** contains Negative Control primer pairs, that will amplify the 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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PRODUCT DESCRIPTION

HLA-B*13 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*13:01 to B*13:139N alleles.

PLATE LAYOUT

Each test consists of 31 PCR reactions in a 32 well PCR plate.
Well 32 is 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	26	27	28	29	30	NC	empty

The 32 well cut PCR plate is marked with 'HLA-B*13' in silver/gray ink.

Well No. 1 is marked with the Lot No. '7K5'.

Wells 1 to 30 – HLA-B*13 high resolution primers.

Well 31 – 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*13 alleles will be amplified by some primer mixes. For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*13 alleles, i.e. **B*13:01 to B*13:139N**, recognized by the HLA Nomenclature Committee in October 2019^{1,2} will be amplified by the primers in the HLA-B*13 subtyping kit.

The HLA-B*13 kit enables separation of the confirmed HLA-B*13 alleles as listed in the IMGT/HLA database 3.26.0. 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*13 alleles is listed below.

The HLA-B*13 kit also enables identification of many null and alternatively expressed alleles.

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Lot-specific information

The following HLA-B*13 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix
B*13:02:06, 13:14	15
B*13:15, 13:33	16
B*13:27, 13:49N	17
B*13:34, 13:38	19

¹HLA-B alleles listed on the IMGT/HLA web page 2019-October-17, release 3.38.0, 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>.

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ALLELE CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
B*13:01:01	Confirmed	B*13:13:01	Confirmed	B*13:51	Unconfirmed	B*13:90	Unconfirmed
B*13:01:02	Unconfirmed	B*13:13:02	Unconfirmed	B*13:52	Unconfirmed	B*13:91	Unconfirmed
B*13:01:03	Unconfirmed	B*13:14	Unconfirmed	B*13:53	Unconfirmed	B*13:92	Unconfirmed
B*13:01:04	Unconfirmed	B*13:15	Unconfirmed	B*13:54	Unconfirmed	B*13:93	Unconfirmed
B*13:01:05	Unconfirmed	B*13:16	Unconfirmed	B*13:55	Confirmed	B*13:94	Unconfirmed
B*13:01:06	Unconfirmed	B*13:17	Unconfirmed	B*13:56:01N	Unconfirmed	B*13:95	Unconfirmed
B*13:01:07	Unconfirmed	B*13:18	Unconfirmed	B*13:56:02N	Unconfirmed	B*13:96	Unconfirmed
B*13:01:08	Unconfirmed	B*13:19	Unconfirmed	B*13:57	Confirmed		
B*13:01:09	Unconfirmed	B*13:20	Unconfirmed	B*13:58	Unconfirmed		
B*13:01:10	Unconfirmed	B*13:21	Unconfirmed	B*13:59	Unconfirmed		
B*13:01:11	Unconfirmed	B*13:22:01	Confirmed	B*13:60	Unconfirmed		
B*13:01:12	Confirmed	B*13:22:02	Unconfirmed	B*13:61	Unconfirmed		
B*13:02:01	Confirmed	B*13:23	Unconfirmed	B*13:62	Unconfirmed		
B*13:02:02	Confirmed	B*13:25	Unconfirmed	B*13:63N	Unconfirmed		
B*13:02:03	Unconfirmed	B*13:26:01	Unconfirmed	B*13:64	Confirmed		
B*13:02:04	Confirmed	B*13:26:02	Unconfirmed	B*13:65	Unconfirmed		
B*13:02:05	Unconfirmed	B*13:27	Unconfirmed	B*13:66	Unconfirmed		
B*13:02:06	Unconfirmed	B*13:28	Unconfirmed	B*13:67	Unconfirmed		
B*13:02:07	Unconfirmed	B*13:29	Unconfirmed	B*13:68	Unconfirmed		
B*13:02:08	Unconfirmed	B*13:30	Unconfirmed	B*13:69	Unconfirmed		
B*13:02:09	Unconfirmed	B*13:31	Unconfirmed	B*13:70	Confirmed		
B*13:02:10	Unconfirmed	B*13:32	Confirmed	B*13:71	Unconfirmed		
B*13:02:11	Confirmed	B*13:33	Unconfirmed	B*13:72	Unconfirmed		
B*13:02:12	Unconfirmed	B*13:34	Unconfirmed	B*13:73	Unconfirmed		
B*13:02:13	Unconfirmed	B*13:35	Unconfirmed	B*13:74	Unconfirmed		
B*13:02:14	Confirmed	B*13:36	Unconfirmed	B*13:75	Unconfirmed		
B*13:02:15	Confirmed	B*13:37	Unconfirmed	B*13:76N	Unconfirmed		
B*13:02:16	Unconfirmed	B*13:38	Unconfirmed	B*13:77	Unconfirmed		
B*13:02:17	Confirmed	B*13:39	Unconfirmed	B*13:78	Unconfirmed		
B*13:02:18	Unconfirmed	B*13:40	Unconfirmed	B*13:79	Unconfirmed		
B*13:03	Confirmed	B*13:41	Unconfirmed	B*13:80	Unconfirmed		
B*13:04	Confirmed	B*13:42	Unconfirmed	B*13:81	Unconfirmed		
B*13:06	Confirmed	B*13:43	Unconfirmed	B*13:82	Unconfirmed		
B*13:07N	Unconfirmed	B*13:44	Unconfirmed	B*13:83	Unconfirmed		
B*13:08	Confirmed	B*13:45	Confirmed	B*13:84	Unconfirmed		
B*13:09	Unconfirmed	B*13:46	Unconfirmed	B*13:85	Unconfirmed		
B*13:10	Confirmed	B*13:47	Confirmed	B*13:86	Unconfirmed		
B*13:11	Confirmed	B*13:48	Confirmed	B*13:87	Unconfirmed		
B*13:12:01	Confirmed	B*13:49N	Unconfirmed	B*13:88	Unconfirmed		
B*13:12:02	Unconfirmed	B*13:50	Confirmed	B*13:89	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2016-October-14, release 3.26.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-B*13 homo- and heterozygotes is available upon request.

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SPECIFICITY TABLE

HLA-B*13 SSP subtyping

Specificities and sizes of the PCR products of the 30+1 primer mixes used for
HLA-B*13 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*13 alleles ³	Other amplified HLA Class I alleles
1⁶	140 bp	800 bp	*13:01:01:01-13:04, 13:06-13:08, 13:10-13:12:01, 13:13:01-13:23, 13:25-13:38, 13:40-13:57, 13:59-13:66, 13:68-13:96, 13:99-13:139N	*44:60
2^{4,5}	95 bp	800 bp	*13:01:01:01-13:02:32, 13:07N-13:21, 13:23, 13:25-13:44, 13:47, 13:49N-13:52, 13:54-13:61, 13:63N-13:85, 13:87-13:119, 13:121-13:127, 13:129-13:130, 13:132-13:139N	*27:98, 40:91, 51:93, 56:60, C*17:36
3	245 bp	800 bp	*13:01:01:01-13:01:16, 13:07N, 13:12:01-13:13:02, 13:17, 13:20-13:23, 13:25-13:26:02, 13:28-13:29, 13:36, 13:39, 13:43, 13:50-13:52, 13:57, 13:60-13:61, 13:63N, 13:73, 13:76N-13:80, 13:83, 13:87, 13:90, 13:92, 13:95, 13:106-13:107, 13:109-13:110, 13:122, 13:129, 13:135, 13:138	*07:12, 07:14, 07:18:01-07:18:02, 07:137, 07:162-07:163, 07:199, 07:225, 07:227, 07:248, 07:350, 27:19:01:01-27:19:01:02, 27:30, 27:150, 35:15:01-35:15:02, 35:33, 35:88, 35:230, 35:341, 40:04:01-40:04:02, 40:30, 40:34, 40:59, 40:64:01:01-40:64:02, 40:68, 40:120, 40:129, 40:137, 40:160:01-40:160:02, 44:16, 44:21, 44:64:01-44:64:02, 44:124, 44:150, 48:17, 53:56, 56:60, 57:13, 57:25, 58:37, C*02:62, C*03:34, C*03:142, C*03:261, C*03:272, C*03:384, C*15:42, C*15:111, C*15:201
4	245 bp	1070 bp	*13:02:01:01-13:02:32, 13:08-13:09, 13:14-13:16, 13:18-13:19, 13:27, 13:30-13:35, 13:37-13:38, 13:40-13:42, 13:44-13:45, 13:47, 13:49N, 13:54-13:56:02N, 13:58-13:59, 13:65-13:70, 13:72, 13:74-13:75, 13:81-13:82, 13:84-13:85, 13:88-13:89, 13:91, 13:93-13:94, 13:96-13:105, 13:111-13:119, 13:121, 13:123Q-13:128, 13:130, 13:132-13:134, 13:136-13:137N, 13:139N	*07:78, 07:84, 27:14, 27:81, 27:130, 39:50, 40:06:01:01-40:06:22, 40:44, 40:53, 40:70:01-40:70:02, 40:75, 40:83, 40:86, 40:93, 40:95-40:96, 40:103, 40:109-40:110, 40:127, 40:131, 40:148, 40:159, 40:161-40:162, 40:165, 40:167, 40:177, 40:190, 40:230, 40:244, 40:256N, 40:268-40:270, 40:275, 40:294-40:295, 40:298:01-40:298:02, 40:306-40:307, 40:311, 40:313, 40:317-40:318, 40:330, 40:340-40:342, 40:348-40:350, 40:354, 40:361N-40:364, 40:366, 40:373-40:374, 40:376, 40:387-40:389, 40:408, 40:411, 40:423, 40:425, 40:427, 40:434, 40:445, 40:449, 45:10, 49:07, 50:31, 51:10, 51:16, 51:31, 51:34, 51:82, 51:93, 52:08, 52:67, 54:26, 55:09, 55:22, 55:24, 59:09, 73:01:01:01-73:02, 78:08

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5^{4,6}	125 bp	800 bp	*13:03, 13:22:01-13:22:02, 13:45, 13:48, 13:128	*07:78, 15:42, 15:73:01:01-15:73:01:02, 15:86, 15:224, 15:303, 15:485-15:486, 15:552, 35:60, 35:432, 35:446, 40:71, 44:10, 46:11, 46:18, 51:62, 51:106:01-51:106:02, 51:157, 51:223, 51:225, 51:300, 52:25:01-52:25:02, 54:01:01:01-54:03, 54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:17-54:41, 55:01:01:01-55:03, 55:05, 55:07, 55:09-55:12, 55:15-55:16, 55:18-55:19, 55:21-55:22, 55:24-55:26, 55:29-55:31, 55:33-55:40, 55:42-55:45, 55:47-55:48, 55:52-55:57, 55:59-55:67, 55:69-55:80, 55:82-55:85, 55:87-55:106, 56:01:01:01-56:01:04, 56:01:06-56:02:01:02, 56:02:03, 56:04:01:01-56:04:04, 56:07-56:08, 56:10, 56:13-56:14, 56:16-56:17, 56:19N-56:20:02, 56:23-56:30, 56:33-56:49, 56:51-56:59, 56:62-56:71, 58:73, 59:01:01:01-59:01:01:02, 59:04-59:09, 82:01:01:01-82:03, C*01:90, C*15:91, C*15:128
	155 bp		*13:16, 13:20, 13:31, 13:41, 13:48, 13:128, 13:131	*07:78, 15:42, 15:73:01:01-15:73:01:02, 15:303, 15:486, 51:62, 51:106:01-51:106:02, 51:223, 51:225, 51:300, 52:25:01-52:25:02, 54:20, 54:33, 54:40, 55:01:01:01-55:01:23, 55:03, 55:05, 55:09, 55:11, 55:15, 55:21, 55:24-55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 55:44-55:45, 55:52-55:55N, 55:59-55:60, 55:64, 55:66, 55:73-55:76, 55:78-55:79, 55:84-55:85, 55:87, 55:90-55:95, 55:97N-55:106, 56:25, 56:37, 56:43 56:66, C*01:90, C*15:91, C*15:128
	180 bp		*13:03, 13:48, 13:120	*15:73:01:01-15:73:01:02, 15:303, 15:486, 15:552, 35:432, 35:446, 40:71, 44:10, 46:11, 51:62, 51:106:01-51:106:02, 51:223, 51:225, 52:25:01-52:25:02, 54:03, 54:33, 54:40, 56:01:01:01-56:01:04, 56:01:06-56:01:12, 56:01:14-56:02:03, 56:04:01:01-56:04:04, 56:07-56:08, 56:13-56:14, 56:16-56:17, 56:20:01-56:20:02, 56:24-56:30, 56:33-56:49, 56:51-56:53, 56:55:01:02-56:59, 56:61-56:65, 56:67-56:71, 58:73, 59:04, 82:01:01:01-82:03
6⁴	105 bp	1070 bp	*13:04, 13:46, 13:56:01N-13:56:02N, 13:72, 13:127	*15:04:01:01-15:04:04, 15:16:01:01-15:16:04, 15:67, 15:95, 15:137, 15:155, 15:222, 15:254, 15:293, 15:310, 15:362, 15:408, 15:499, 15:517, 15:531, 15:550, 35:37, 35:235, 35:265, 35:276, 39:06:01-39:06:06, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 39:83, 39:90, 39:102, 39:109, 39:127, 39:129, 39:132, 39:140-39:141, 39:154, 40:86, 40:159, 40:330, 41:30, 41:50, 45:02, 45:09, 46:32, 49:04:01-49:05, 49:50, 50:09, 50:33, 51:13:01-51:13:02, 51:37, 51:63:01-51:63:02, 51:92:01-51:92:02, 51:97, 51:172, 51:216, 51:251, 52:14:01-52:14:02, 52:39, 52:75, 54:14, 55:13, 55:23, 55:32, 55:58, 55:68, 56:22, 56:50, 59:03,

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				73:01:01:01-73:02, C*05:152, C*07:463, C*07:758, C*12:183
7 ⁷	190 bp	1070 bp	*13:06, 13:53, 13:131	*07:34, 08:01:01:01-08:01:22, 08:01:24-08:05, 08:08N-08:10, 08:12:01-08:13, 08:15-08:20:02, 08:22-08:24, 08:26:01-08:27, 08:29-08:36, 08:38:01-08:39, 08:41-08:48, 08:50-08:73, 08:75-08:78, 08:80-08:86N, 08:88, 08:90-08:106, 08:108 ^w , 08:109-08:110, 08:112-08:124, 08:126-08:155, 08:157-08:164, 08:166-08:170, 08:172-08:174, 08:176-08:185, 08:187-08:199, 08:201-08:204, 08:206-08:226, 08:228-08:249, 14:13, 14:53, 15:42, 15:83:01:01-15:83:01:02, 15:86, 15:188, 15:224, 15:252, 15:485, 18:26, 18:61, 18:97, 18:168, 35:60, 35:87, 35:157 ^w , 35:276, 37:12, 37:84, 38:01:01:01-38:01:01:06, 38:01:03-38:02:05, 38:02:07-38:07, 38:09-38:21, 38:23-38:28, 38:31-38:51, 38:53-38:62, 38:64, 38:66-38:69, 38:71-38:86, 38:157-38:158, 38:160-38:162, 39:01:01:01-39:01:01:12, 39:01:03:01-39:01:18, 39:01:20-39:06:06, 39:08-39:14:01:03, 39:16, 39:18-39:20, 39:22-39:24:02, 39:26-39:28, 39:30-39:31:01:02, 39:34-39:37, 39:39:01-39:39:02, 39:41-39:42, 39:44-39:46, 39:48, 39:51-39:54, 39:56-39:73, 39:75-39:90, 39:92-39:95N, 39:97N, 39:98 ^w , 39:99-39:101, 39:103-39:108, 39:109 ^w , 39:110-39:160, 40:39, 40:51, 40:163, 40:184, 40:199, 40:424, 41:01:01:01-41:03:02, 41:05-41:09, 41:11-41:16, 41:20, 41:22-41:48, 41:49 ^w , 41:50, 41:53-41:55, 41:57-41:61, 42:01:01:01-42:02:02, 42:04-42:08, 42:10-42:15, 42:17-42:19, 42:21-42:27, 44:166, 46:18, 48:37, 51:21, 51:36, 51:101, 51:143, 51:153, 51:157, 51:280, 51:295, 51:300, 52:37, 52:71, 52:84, 54:01:01:01-54:02, 54:04-54:05N, 54:07-54:08N, 54:10-54:13, 54:17-54:25, 54:27-54:32, 54:34-54:39, 54:41, 55:01:01:01-55:05, 55:07, 55:10-55:13, 55:15-55:21, 55:25-55:26, 55:28-55:40, 55:42-55:45, 55:47-55:50, 55:52-55:57, 55:59-55:67, 55:69-55:106, 56:10, 56:12, 56:23, 56:54, 56:66, 58:20, 59:01:01:01-59:03, 59:05-59:08, 59:10N, 67:01:01-67:07, 78:07, C*01:90, C*01:116, C*07:775, C*12:282, C*14:92, C*15:24, C*15:128
8 ⁷	225 bp	1070 bp	*13:18, 13:31, 13:41, 13:128, 13:131	*07:78, 07:84, 15:04:01:01-15:04:04, 15:137, 15:303, 15:499, 15:531, 35:265, 39:33, 40:161, 46:32, 49:41, 50:47, 51:05, 51:29, 51:54, 51:61:01-51:61:02, 51:82, 51:197, 51:217, 51:279, 52:21:01-52:21:02, 52:24, 54:10, 54:20, 54:33, 54:40, 55:09, 55:21,

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				55:37, 55:52, 56:43, C*05:152, C*12:183, C*14:92
9	130 bp 230 bp	1070 bp	*13:42 *13:08	*51:38
10⁴	105 bp	800 bp	*13:01:11, 13:21, 13:71	*07:05:01:01-07:06:01:02, 07:06:03, 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, 07:222, 07:249, 07:258, 07:264, 07:269-07:270, 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, 08:01:02, 08:01:13, 08:20:01, 08:53:02, 08:79, 08:213, 15:150, 15:188, 18:189, 27:07:01-27:07:06, 27:11, 27:20, 27:24, 27:27, 27:33, 27:43, 27:125, 27:130, 27:164, 27:168, 27:180, 27:187, 27:218-27:219, 35:09:02-35:09:03, 35:18, 35:31, 35:88, 35:230, 38:63, 39:136, 40:01:01-40:01:13, 40:01:15-40:01:20, 40:01:22-40:01:25, 40:01:27, 40:01:29, 40:01:31, 40:01:33-40:01:45, 40:01:47-40:01:49, 40:01:51-40:02:09, 40:02:11-40:02:12, 40:02:14-40:02:17, 40:02:19, 40:02:21-40:02:25, 40:02:27-40:02:30, 40:04:01-40:06:04:02, 40:06:06-40:06:09, 40:06:11-40:08, 40:10:01:01-40:13, 40:14:03-40:16:01:02, 40:19, 40:21-40:23, 40:25, 40:27:01-40:27:02, 40:29-40:30, 40:34-40:35:01, 40:36-40:40, 40:43, 40:45-40:51, 40:53-40:58, 40:61-40:70:02, 40:72:02-40:76, 40:79-40:86, 40:87:02-40:88, 40:90-40:94, 40:96-40:97, 40:99-40:114:01:02, 40:115-40:119, 40:122-40:123, 40:125:01-40:130:02, 40:132-40:135, 40:137-40:157, 40:160:01-40:171, 40:173-40:179, 40:182-40:183, 40:185-40:186:02, 40:188-40:236, 40:239-40:266, 40:268-40:279, 40:281-40:283, 40:285-40:304, 40:306, 40:308-40:311, 40:313-40:329, 40:331-40:340, 40:342-40:351, 40:353:01-40:367, 40:369-40:380, 40:382-40:389, 40:392-40:413, 40:415-40:421Q, 40:423-40:428N, 40:430-40:449, 41:08, 44:31, 48:01:01:01-48:01:10, 48:03:01:01-48:07, 48:09-48:11, 48:13, 48:15-48:16, 48:18-48:22, 48:24, 48:28-48:45, 48:47-48:50, 51:01:09, 51:01:21, 51:01:25, 51:10, 51:24:02-51:24:04, 51:81, 51:217, 51:279, 52:54, 54:11, 55:04, 55:08, 55:49, 55:86, 56:20:02, 58:27, 67:03, 81:01:01:01-81:09, C*01:90, C*01:116, C*02:68, C*03:317, C*07:775, C*12:282, C*15:24, C*15:128

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	210 bp		*13:09, 13:39, 13:67	*07:177, 08:102, 08:122, 14:48, 15:53, 15:183, 15:212, 15:336, 15:345, 15:511, 18:80, 18:102, 18:107, 27:08, 27:12:01:01-27:12:01:03, 27:18, 27:26, 27:33, 27:40, 27:42, 27:44, 27:89, 27:153, 27:165 ^w , 27:204, 35:63, 35:84, 35:90, 35:150:01-35:150:02, 35:184, 35:201, 35:217, 35:317, 35:441, 40:01:01-40:01:10, 40:01:12-40:09, 40:11:01:01-40:11:02, 40:14:01-40:16:01:02, 40:18, 40:20:01:01-40:20:01:02, 40:22N-40:40, 40:42-40:46, 40:48-40:57, 40:59-40:75, 40:77-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:136, 40:138-40:148, 40:150-40:156, 40:158-40:187, 40:189-40:200, 40:202-40:214, 40:216N-40:247, 40:249-40:281, 40:283-40:291N, 40:293-40:324, 40:326-40:339, 40:341-40:350, 40:352-40:363, 40:366-40:393, 40:395-40:399N, 40:402-40:449, 41:01:01:01-41:04, 41:06-41:11, 41:13-41:21, 41:23-41:25, 41:27-41:35, 41:37-41:45N, 41:47-41:59, 41:61-41:63, 44:09, 44:46, 44:75, 44:90, 44:129, 44:131, 44:254, 44:277, 44:438N, 45:01:01:01-45:15, 45:17-45:25, 46:10, 47:02, 47:03 ^w , 50:01:01:01-50:02:01:02, 50:04-50:20, 50:31-50:69, 56:36, 73:01:01:01-73:02, C*03:504, C*07:828
11	280 bp	800 bp	*13:04, 13:10, 13:26:01-13:26:02, 13:72, 13:127	*07:09:01-07:09:02, 07:11, 07:17, 07:162, 07:235, 07:237, 07:255, 07:287, 08:28, 08:35, 08:37, 08:89, 08:107, 14:56, 15:01:01:01-15:01:04, 15:01:06-15:02:11, 15:03:01:01-15:08:02, 15:11:01-15:16:04, 15:18:01:01-15:21:01:02, 15:23-15:29:01:02, 15:31:01:01-15:36, 15:38:01-15:40:02, 15:43-15:44, 15:46-15:47:02, 15:49-15:57, 15:60-15:62, 15:64:01-15:72, 15:74-15:76, 15:78:01:01-15:82, 15:84-15:85, 15:87-15:89:02, 15:91-15:98, 15:101-15:129, 15:131-15:132, 15:134-15:136, 15:138-15:149N, 15:151-15:161, 15:163-15:167, 15:169-15:176, 15:178-15:187, 15:189-15:195, 15:197:01-15:207, 15:209N-15:215, 15:217-15:223, 15:225-15:228, 15:231-15:232, 15:234-15:242:02, 15:244-15:247, 15:249-15:251:03, 15:254-15:268, 15:270-15:272N, 15:274-15:286, 15:288-15:302N, 15:304N-15:311, 15:314-15:322, 15:325-15:328, 15:330-15:333, 15:335-15:337, 15:340-15:341, 15:343-15:355, 15:357-15:360, 15:362-15:395, 15:397-15:399, 15:401-15:402, 15:404-15:410, 15:412-15:415, 15:417-15:419, 15:421-15:422, 15:425-15:426, 15:428-15:434, 15:436-15:438, 15:440-15:444, 15:447-15:454N, 15:456-15:459, 15:461, 15:463N-15:484, 15:487N, 15:489-15:499, 15:501-15:502,

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12^{4,7}	90 bp	1070 bp	*13:11	*07:182N, 15:18:03, 15:73:01:01-15:73:01:02, 15:224, 15:486, 39:17, 40:48, 40:71, 40:377, 51:62, 56:02:01:01-56:02:03, 56:04:01:01-56:04:04, 56:10, 56:51, 56:56-56:57, 56:63, C*02:06:01, C*02:47
13^{4,7}	90 bp 160 bp 245 bp	800 bp	*13:19 *13:57 *13:12:01-13:12:02	*49:34 *35:287
14	130 bp	1070 bp	*13:13:01-13:13:02, 13:21, 13:35, 13:59, 13:71, 13:108	*08:83, 40:91, 41:37, 51:93, 51:122
15⁴	105 bp 245 bp	800 bp	*13:02:26, 13:22:01, 13:128 *13:14, 13:83	*07:78, 15:73:01:01-15:73:01:02, 15:303, 15:486, 40:48, 40:377, 49:01:14, 54:22, 56:01:03, 56:20:02, C*15:91, C*15:128 *07:149, 18:09 ^w , 27:01 ^w , 27:142 ^w , 37:10 ^w , 38:02:01:01-38:02:06, 38:02:08-38:04, 38:08, 38:15, 38:18, 38:23, 38:29, 38:35, 38:43-38:50, 38:62, 38:64, 38:72, 38:74-38:76, 38:79, 38:82, 38:84 ^w , 38:85, 38:160, 38:162, 40:96 ^w , 40:157 ^w , 40:201 ^w , 44:103 ^w , 44:130, 44:212 ^w , 44:224
16^{4,7}	90 bp 205 bp	800 bp	*13:17, 13:33, 13:57 *13:15	*15:399, 35:46, 35:207, 57:88 *14:37, 49:09, 50:58, 51:62, 51:106:01-51:106:02, 51:223, 51:225, 52:25:01-52:25:02, 56:34
17	160 bp 220 bp	1070 bp	*13:49N *13:27, 13:43	C*02:159, C*02:161
18	155 bp 205 bp 275 bp	1070 bp	*13:28 *13:32 *13:44	
19	195 bp 240 bp 315 bp 345 bp	1070 bp	*13:34 *13:76N *13:96 *13:38, 13:52	C*17:08 *39:77
20⁴	90 bp	1070 bp	*13:36	*15:399, 15:438, 35:46
21⁴	120 bp 180 bp 245 bp	1070 bp	*13:29 *13:30, 13:40 *13:103N	*44:219 *15:528N, 27:64N, 40:118N, 40:291N, 44:448N
22	135 bp	800 bp	*13:25	

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	300 bp		*13:86	*07:225, 35:02:01:01-35:02:07, 35:02:08 ^w , 35:02:09-35:02:15, 35:81, 35:83, 35:95, 35:129N, 35:146, 35:154, 35:157, 35:162, 35:172, 35:182-35:184, 35:211, 35:220, 35:258, 35:270, 35:273, 35:285, 35:309, 35:311, 35:323, 35:335, 35:339, 35:357, 35:361, 35:366-35:367, 35:372, 35:374, 35:377-35:379, 35:387, 35:391, 35:394, 35:396, 35:403, 35:407, 35:410, 35:419, 35:443, 45:12, 50:36, 53:19, 53:36, 58:65
23	130 bp	1070 bp	*13:42	*51:38
	200 bp		*13:37	
	275 bp		*13:44	
24⁶	170 bp	1070 bp	*13:16, 13:20, 13:31, 13:48, 13:62, 13:128, 13:131	*07:02:01:01-07:24, 07:26-07:47, 07:49N- 07:50, 07:52-07:154, 07:156-07:163, 07:165- 07:201N, 07:203-07:208, 07:210-07:219, 07:221-07:222, 07:224-07:225, 07:227- 07:234, 07:236-07:260, 07:262-07:300, 07:302-07:331, 07:333-07:345, 07:347- 07:358, 07:360Q-07:362, 07:364-07:385, 07:387-07:395, 08:20:01-08:20:02, 08:53:01- 08:53:02, 08:79, 08:156, 14:01:01:01-14:40, 14:42, 14:44-14:55, 14:57-14:58, 14:60- 14:86, 15:01:01:01-15:01:04, 15:01:06- 15:04:04, 15:06-15:17:04, 15:17:06-15:19, 15:21:01:01-15:21:01:02, 15:23-15:30:01:03, 15:32:01-15:40:02, 15:42-15:47:02, 15:49- 15:50, 15:53-15:54, 15:56-15:58, 15:60- 15:74, 15:76-15:82, 15:85, 15:87, 15:89:01- 15:90, 15:92-15:99, 15:101-15:104, 15:106, 15:108-15:110, 15:112-15:113, 15:115- 15:122, 15:125:01-15:129, 15:131-15:135, 15:137-15:144, 15:146-15:150, 15:152- 15:154, 15:156-15:161, 15:163-15:175, 15:177-15:178, 15:180-15:184, 15:187, 15:189-15:199, 15:201-15:217, 15:219- 15:221, 15:223, 15:225-15:234, 15:236, 15:238-15:249, 15:251:01-15:274, 15:276- 15:282, 15:284-15:311, 15:313-15:331, 15:333-15:347, 15:349:01-15:382, 15:384- 15:392, 15:394-15:395, 15:397-15:406, 15:408-15:410, 15:412-15:414, 15:416- 15:420, 15:422-15:448, 15:450-15:484, 15:486-15:498, 15:500-15:506, 15:508- 15:517, 15:519-15:538, 15:540N-15:551, 15:553-15:556, 18:15, 18:19, 18:21, 18:30, 18:57:01-18:57:02, 18:101, 18:152, 18:164, 27:04:01-27:04:06, 27:06:01:01-27:06:01:02, 27:10, 27:15, 27:18, 27:20-27:21, 27:24- 27:25, 27:40, 27:54, 27:63, 27:66N, 27:68- 27:69, 27:79, 27:86, 27:91-27:92, 27:100, 27:103, 27:105-27:109, 27:112-27:115, 27:120, 27:138, 27:149, 27:153, 27:165, 27:168, 27:173, 27:183, 27:192, 27:208, 27:210-27:211, 27:214, 35:11:01-35:11:03,

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25	160 bp 430 bp	800 bp	*13:70 *13:64
26^{4,8}	120 bp 145 bp 175 bp	800 bp	*13:50 *13:103N *13:47
27⁴	80 bp	1070 bp	*13:96
*07:345, 27:82 *27:64N, 40:118N, 40:291N, A*66:39N *39:77			

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	115 bp	*13:52	
	165 bp	*13:61	*42:25
	185 bp	*13:69	
28 ⁴	120 bp	1070 bp	*13:63N
29	255 bp	1070 bp	*13:23, 13:55
			*18:09, 27:01, 27:142, 37:10, 40:47, 40:96, 40:157, 40:201, 44:15:01:01-44:15:01:02, 44:55, 44:103, 44:188, 44:212, 49:02
30	185 bp	1070 bp	*13:07N
31 ⁹	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*13 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.

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

⁵Primer mix 2 may give rise to a weak band of about 500 bp. This band should be disregarded when interpreting HLA-B*13 SSP subtypings.

⁶Primer mixes 1, 5 and 24 may give rise to a lower yield of HLA-specific PCR product than the other B*13 primer mixes.

⁷Primer mixes 7, 8, 12, 13 and 16 may have tendencies of unspecific amplifications.

⁸In primer mix 26 the positive control band may be weaker than for other HLA-B*13 primer mixes.

⁹Primer mix 31 contains a negative control, which will amplify the majority of the 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.

The PCR product generated by the positive control primer pair is 200 base pairs.

Abbreviations

‘w’, may be weakly amplified.

101.515-12 – including *Taq* pol., IFU-01

101.515-12u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **7K5**

Lot-specific information

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	140	95	245	245	125	105	190	225	130	105	280	90
PCR product					155				230	210		
					180							
Length of int.	800	800	800	1070	800	1070	1070	1070	1070	800	800	1070
pos. control ¹												
5'-primer(s) ²	209	506	355	357	420	357	412	357	357	142	419	369
	5'-ggC 3'	5'-gCT 3'	5'-TCA 3'	5'-Tgg 3'	5'-TTA 3'	5'-Tgg 3'	5'-ATA 3'	5'-Tgg 3'	5'-Tgg 3'	5'-TCA 3'	5'-gTC 3'	5'-TAC 3'
										412		
										5'-ATA 3'		
3'-primer(s) ³	309	559	559	559	506	419	559	539	445	311	3 rd I	420
	5'-gTg 3'	5'-CTC 3'	5'-CTC 3'	5'-CTC 3'	5'-TgC 3'	5'-Cgg 3'	5'-CgT 3'	5'-TCC 3'	5'-ggA 3'	5'-ggT 3'	5'-TAT 3'	5'-gCT 3'
					527	419			548	477		
					5'-CCT 3'	5'-CgA 3'			5'-ggC 3'	5'-gCg 3'		
					538	426						
					5'-CCA 3'	5'-TCC 3'						
					559	426						
					5'-CAg 3'	5'-TCT 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.	90	130	105	90	160	155	195	90	120	135	130	170
PCR product	160		245	205	220	205	240		180	175	200	
	245					275	315		245	300	275	
							345					
Length of int.	800	1070	800	800	1070	1070	1070	1070	1070	800	1070	1070
pos. control ¹												
5'-primer(s) ²	268	419	103	144	368	209	358	209	160	209	357	527
	5'-Agg 3'	5'-gTA 3'	5'-CCT 3'	5'-gCA 3'	5'-gTT 3'	5'-ggC 3'	5'-TCT 3'	5'-ggC 3'	5'-ACT 3'	5'-ggC 3'	5'-Tgg 3'	5'-TgA 3'
	355		420	420	385	357	406		229	397		
	5'-TCA 3'		5'-TTA 3'	5'-TTA 3'	5'-ggT 3'	5'-Tgg 3'	5'-gCA 3'		5'-TAA 3'	5'-gCT 3'		
					441		700		454	520		
					5'-TAA 3'		5'-ACT 3'		5'-ACT 3'	5'-AgA 3'		
							712		520			
							5'-TCT 3'		5'-AgA 3'			
							733					
							5'-ATA 3'					
3'-primer(s) ³	317	506	309	193	559	323	559	259	309	302	445	3 rd I
	5'-ggA 3'	5'-TgA 3'	5'-gTg 3'	5'-CgT 3'	5'-CTC 3'	5'-AgC 3'	5'-CTC 3'	5'-gTT 3'	5'-gTg 3'	5'-ggC 3'	5'-ggA 3'	5'-TAT 3'
	476		486	476		523	916		3 rd I	3 rd I	515	
	5'-CCA 3'		5'-gCC 3'	5'-CCA 3'		5'-ACC 3'	5'-gAC 3'		5'-TAT 3'	5'-TAT 3'	5'-CCC 3'	
	559			583		593					593	
	5'-CCC 3'			5'-gTg 3'		5'-CgC 3'					5'-CgC 3'	
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.515-12 – including *Taq* pol., IFU-01

101.515-12u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **7K5**

Lot-specific information

Well No.	25	26	27	28	29	30
Length of spec.	160	120	80	120	255	185
PCR product	430	145	115			
		175	165			
			185			
Length of int.	800	800	1070	1070	1070	1070
pos. control ¹						
5'-primer(s) ²	209	427	628	506	97	106
	5'-ggC 3'	5'-ACT 3'	5'-CAC 3'	5'-gCT 3'	5'-TCC 3'	5'-CCA 3'
		454	649			
		5'-ACT 3'	5'-ACT 3'			
		482	700			
		5'-ggT 3'	5'-ACT 3'			
			733			
			5'-ATA 3'			
3'-primer(s) ³	329	559	774	583	309	251
	5'-ggC 3'	5'-CTC 3'	5'-ggT 3'	5'-gTA 3'	5'-gTg 3'	5'-CCC 3'
	353					
	5'-AAA 3'					
Well No.	25	26	27	28	29	30

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.

101.515-12 – including *Taq* pol., IFU-01
101.515-12u – without *Taq* pol., IFU-02

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“Instructions for Use” (IFU)

Lot No.: **7K5**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B*13 SSP subtyping kit ²																				
					Well															
				Prod. No.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					201553801	201553802	201553803	201553804	201553805	201894406	201553807	201553808	201553809	201553810	201553811	201553812	201894413	201553814	201553815	201553816
	IHWC 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	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-

101.515-12 – including *Taq* pol., IFU-01

Visit <https://labproducts.caredx.com> for

101.515-12u – without *Taq* pol., IFU-02

“Instructions for Use” (IFU)

Lot No.: 7K5

Lot-specific information

CELL LINE VALIDATION SHEET																														
HLA-B*13 SSP subtyping kit ²																														
					Well																									
					Prod. No.:	17	18	19	20	21	22	23	24	25	26	27	28	29	30											
					Prod. No.:	201553817	201553818	201894419	201553820	201894421	201777922	201777923	201553824	201553825	201894426	201894427	201553828	201553829	201553830											
	IHWC 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		-	-	-	-	-	-	-	-	-	-	-	-	-	-											

101.515-12 – including *Taq* pol., IFU-01
101.515-12u – without *Taq* pol., IFU-02

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

Lot No.: 7K5

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 9, 13, 14, 16 to 21, 23, 25 to 30 were available. The specificities of the primers in primer mixes 13, 14, 16, 20 and 29 were tested by separately adding one or two additional 5'-primers, respectively one or two additional 3'-primers. In primer solutions 9, 18, 23, 25, 28 and 30 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solutions 17, 19, 21, 26 and 27 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 13 and 22, one 5'-primer was not possible to test and in primer solutions 6, 13, 16 and 22 one or two 3'-primers were not possible to test.

In addition, the primers in primer solutions 5, 15 and 22 were tested by adding one 5'-primer and/or one 3'-primer, respectively.

101.515-12 – including *Taq* pol., IFU-01
101.515-12u – without *Taq* pol., IFU-02

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

Lot No.: **7K5**

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