

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: 9G4

Lot-specific information

***Olerup SSP[®]* HLA-B*52**

Product number:	101.562-06 – including <i>Taq</i> polymerase 101.562-06u – without <i>Taq</i> polymerase
Lot number:	9G4
Expiry date:	2021-04-01
Number of tests:	6
Number of wells per test:	20+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. 9G4.

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*52 LOT (0G1).

The HLA-B*52 kit is updated for new alleles to enable separation of:

- Null and Alternatively expressed alleles
- The product documentation has been updated for new alleles of IMGT 3.33.0

The format of the Worksheet has been changed.

The HLA-B*52 specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP[®]* HLA-B*52 lot was made (**Lot No. 0G1**).

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

The primers of the wells detailed below have been exchanged, added or modified compared to the previous lot.

Well	5'-primer	3'-primer	rationale
3	-	Added	3'-primer added for the B*52:73 allele.
14	-	Modified	Positive control primer pair exchanged, 3'-primer modified for improved HLA-specific amplification and decreased tendency of primer oligomer formation.

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

Well **21** 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.

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

PRODUCT DESCRIPTION

HLA-B*52 SSP typing

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*52:01 to B*52:76 alleles.

PLATE LAYOUT

Each HLA-B*52 test consists of 21 PCR reactions in a 24 well cut PCR plate. Wells 22 to 24 are empty.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	NC	empty	empty	empty

The 24 well PCR plate is marked with 'HLA-B*52' in silver/gray ink.

Well No. 1 is marked with the Lot No. '9G4'.

Wells 1 to 20 – HLA-B*52 high resolution primers.

Well 21 – 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 24 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*52 alleles will be amplified by some primer mixes. For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*52, i.e. **B*52:01 to B*52:76**, recognized by the HLA Nomenclature Committee in July 2018^{1,2} will be amplified by the primers in the HLA-B*52 subtyping kit³.

The HLA-B*52 kit enables separation of the confirmed HLA-B*52 alleles as listed in the IMGT/HLA database 3.22.0. 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*52 alleles is listed below.

The HLA-B*52 kit also enables identification of null and alternatively expressed alleles.

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

The following HLA-B*52 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix
B*52:04, 52:09:01-52:09:02	2
B*52:14, 52:49N	9
B*52:20, 52:25:01	8

¹HLA-B alleles listed on the IMGT/HLA web page 2018-July-11, release 3.33.0, 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>.

³The HLA-B*52 primer set cannot separate the B*52:28-52:29 from the B*53:17:01-53:17:02 alleles. These alleles can be distinguished by the HLA-B low resolution kit and/or the HLA-B*53 high resolution kit.

The HLA-B*52 primer set cannot separate the B*52:73 from the B*78:05-B*78:06 alleles. These alleles can be distinguished by the HLA-B low resolution kit and/or the HLA-B*78 high resolution kit.

ALLELE CONFIRMATION STATUS

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

101.562-06 – including *Taq* polymerase, IFU-01
101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: 9G4

Lot-specific information

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-B*52 homo- and heterozygotes is available upon request.

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

SPECIFICITY TABLE

HLA-B*52 SSP subtyping

Specificities and sizes of the PCR products of the 20+1 primer mixes used for HLA-B*52 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*52 alleles ³	Other amplified HLA Class I alleles
1⁴	95 bp	800 bp	*52:01:01:01- 52:02:02, 52:04- 52:09:02, 52:12- 52:18, 52:20-52:27, 52:30-52:66, 52:68- 52:70, 52:72-52:73, 52:75-52:76	*07:218, 13:62, 14:01:01:01-14:40, 14:42, 14:44-14:45, 14:47-14:55, 14:57-14:58, 14:60- 14:61, 15:37-15:38:02, 15:323, 15:335, 15:364, 15:368, 15:435, 18:15, 18:19, 18:30, 18:57, 27:153, 35:21, 35:96, 35:188, 40:28, 40:51, 40:174, 49:09, 51:01:01:01-51:01:63, 51:03-51:04:02, 51:06:01-51:07:02, 51:11N- 51:14, 51:16-51:18, 51:21-51:22, 51:24:01- 51:24:05, 51:26-51:30, 51:32-51:33, 51:35, 51:37-51:39, 51:41N, 51:43, 51:45-51:46, 51:48-51:52, 51:55-51:58, 51:60-51:72, 51:74- 51:80, 51:82-51:92:02, 51:94-51:96, 51:98N- 51:107, 51:109-51:114, 51:116-51:119, 51:121, 51:123-51:138, 51:140, 51:142, 51:145, 51:147, 51:149N-51:152, 51:154- 51:156, 51:158:01-51:174:02, 51:176-51:179, 51:182-51:193, 51:195-51:196, 51:198, 51:200-51:216, 51:218-51:219, 51:221-51:227, 51:229-51:236, 53:06, 53:28, 56:05:01-56:06, 56:21, 58:08:01-58:08:02, 78:01:01:01-78:03, 78:05-78:07, 78:09, C*01:30, C*03:384, C*06:207, C*08:51, C*08:114, C*12:87, C*14:76, C*15:39, C*15:130
2	135 bp 235 bp	1070 bp	*52:04 *52:09:01-52:09:02	*08:52, 15:87, 51:185, 53:05:01-53:05:02, 53:16, 53:33, 57:60
3⁴	95 bp	1070 bp	*52:01:01:01- 52:01:31, 52:03- 52:15, 52:17, 52:19- 52:31:02, 52:33- 52:76	*13:58, 15:202, 15:239, 15:376, 18:12:01- 18:12:02, 35:10, 35:13, 35:16, 35:28, 35:69, 35:80, 35:226, 35:270, 35:318, 37:01:01:01- 37:01:05, 37:01:07-37:05, 37:07, 37:09-37:27, 37:29-37:59, 37:62-37:66, 37:68-37:71, 40:185, 40:209, 40:308, 40:350, 40:365, 44:83, 44:134, 49:03, 53:17:01-53:17:02, 53:28, 53:38, 78:05-78:06
4	140 bp	800 bp	*52:02:01-52:02:02	*15:13:01-15:13:02, 15:16:01:01-15:17:07, 15:24:01-15:24:02, 15:67, 15:87, 15:95, 15:157, 15:162, 15:168, 15:177, 15:196, 15:208, 15:216, 15:222, 15:230, 15:254, 15:268, 15:273, 15:356, 15:361-15:362, 15:396, 15:403, 15:408, 15:411, 15:418, 15:423-15:424, 15:442, 15:446, 51:104, 57:01:01:01-57:04:02, 57:05-57:11, 57:13- 57:15, 57:17-57:44, 57:46-57:50, 57:52-57:68, 57:70-57:100, 58:36
	280 bp		*52:36	

101.562-06 – including *Taq* polymerase, IFU-01
101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

5	145 bp	1070 bp	*52:21:01-52:21:02	*15:01:02, 15:277-15:278, 51:61:01-51:61:02, C*02:02:23, C*12:03:31
	190 bp		*52:03, 52:11, 52:67	*07:02:11, 07:05:03, 15:01:02, 15:09:01-15:09:02, 15:243, 15:252, 15:277-15:278, 15:361, 27:04:03, 35:01:10, 35:04:02, 35:251, 40:01:06, 40:26, 40:95, 44:03:40, 44:62, 49:18:01, 50:14, 51:02:01:01-51:02:03, 51:02:05, 51:05, 51:23, 51:34, 51:36, 51:40, 51:54, 51:59, 51:93, 51:108, 51:143-51:144, 51:146, 51:180, 55:01:04, 78:04, C*02:02:23, C*12:03:31, C*14:92
6	225 bp		*52:05	
	135 bp	1070 bp	*52:03, 52:10:01-52:10:03, 52:71, 52:74	*35:01:10, 35:04:02, 35:251, 40:01:06, 44:03:40, 51:05 ^w , 51:09:01-51:09:03, 51:19, 51:31, 51:40, 51:54 ^w , 51:73, 51:93, 51:108, 51:122, 51:139, 51:194, 51:217 ^w , 78:04, 78:08
7^{5,6}	180 bp		*52:15	*44:03:40 ^w , 44:62 ^w , 51:23 ^w , 51:108 ^w
	225 bp		*52:05	
8	160 bp	1070 bp	*52:13	*58:92
	215 bp		*52:19	*08:09, 08:84, 13:46, 15:83, 42:04, 44:20, 51:08:01:01-51:08:02, 51:20, 51:36, 51:44N, 51:97, 51:141, 51:153, 55:20, 55:56, 56:13
9⁴	145 bp	1070 bp	*52:20	*13:58, 18:09, 37:10, 44:83, 44:134, 51:54, 51:78:01-51:78:02, 53:09, 53:11-53:13, 53:31, 53:36, 53:38
	500 bp		*52:25:01	*13:58, 35:60, 35:291, 45:22, 49:03, 51:15, 51:62, 51:106:02, 51:157, 51:225, 56:45, 58:73
10⁴	100 bp	800 bp	*52:06:01, 52:14, 52:75	*13:46, 15:137, 35:01:08, 35:01:15, 35:29:02, 35:235, 35:276, 39:06:01-39:06:05, 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, 40:86, 40:330, 41:50, 45:02, 49:50, 50:09, 51:01:33, 51:13:01-51:13:02, 51:92:01-51:92:02, 51:172, 55:13, 55:58, 56:22, 59:03, 73:01-73:02, C*05:152
	285 bp		*52:49N	
10⁴	95 bp	1070 bp	*52:18	
	245 bp		*52:08, 52:67	*07:78, 07:84, 13:02:01:01-13:02:22, 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, 27:14, 27:81, 27:130, 39:50, 40:06:01:01-40:06:16, 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, 45:10, 49:07, 50:31, 51:10, 51:16, 51:31, 51:34, 51:82, 51:93,

101.562-06 – including *Taq* polymerase, IFU-01
101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

				54:26, 55:09, 55:22, 55:24, 59:09, 73:01-73:02, 78:08
11^{4,5}	85 bp	1070 bp	*52:06:01-52:06:03	*07:38, 08:02-08:03, 08:52, 08:78, 08:117, 08:126, 18:136, 27:23, 35:329, 37:21, 38:06-38:07, 40:13, 41:46, 44:06, 44:232, 51:01:01:01-51:01:16, 51:01:18-51:06:04, 51:08:01:01-51:21, 51:23-51:24:05, 51:26-51:46, 51:48-51:117, 51:119-51:213, 51:215-51:221, 51:223-51:236, 53:01:01-53:08:02, 53:10-53:16, 53:18-53:27, 53:29-53:37, 53:39, 53:41-53:50, 59:01:01:01-59:07, 59:09-59:10N
	225 bp		*52:17	A*24:328
12⁴	85 bp	1070 bp	*52:01:01:01-52:05, 52:07-52:17, 52:19-52:72, 52:74-52:76	*13:01:01:01-13:04, 13:06, 13:08, 13:10-13:18, 13:20-13:23, 13:25-13:35, 13:37-13:38, 13:40-13:66, 13:68-13:111, 15:24:01-15:24:02, 15:36, 15:43, 15:87, 15:157, 15:256, 15:339, 15:442, 27:29, 37:01:01:01-37:01:08, 37:01:10-37:04:02, 37:06:01-37:07, 37:09-37:10, 37:12-37:20, 37:22-37:36, 37:38-37:56, 37:59, 37:61-37:66, 37:68-37:71, 38:03, 40:19, 40:47, 40:96, 40:109-40:110, 40:117, 40:157, 40:188, 40:201, 40:292, 40:340, 44:02:01:01-44:02:21, 44:02:23-44:03:35, 44:03:37-44:05:04, 44:07-44:08, 44:10-44:11, 44:14-44:45, 44:47-44:66, 44:68, 44:70-44:74, 44:76-44:89, 44:91-44:96, 44:98-44:112, 44:114-44:126:02, 44:128:01-44:128:02, 44:130, 44:132-44:170, 44:172-44:231, 44:233-44:245, 44:247-44:253, 44:255-44:262, 44:264-44:276, 44:278-44:288, 47:01:01:02-47:01:03, 47:03-47:10, 48:18, 49:01:01:01-49:14, 49:16-49:20, 49:22-49:25, 49:27-49:31, 49:33, 49:35-49:50, 53:17:01-53:17:02, 53:28, 53:38, C*16:85
13	165 bp	800 bp	*52:01:01:01-52:06:03, 52:08-52:76	*15:20, 15:228, 15:305, 15:435, 35:01:01:01-35:01:27, 35:01:29-35:01:46, 35:01:48-35:30, 35:32:01-35:34, 35:36-35:42:02, 35:44-35:45, 35:47-35:56, 35:58-35:59:02, 35:61:01-35:72, 35:74-35:78, 35:80-35:86, 35:88-35:134N, 35:136-35:184, 35:186-35:278, 35:280-35:358, 35:360-35:372, 48:02:01-48:02:03, 51:01:01:01-51:01:55, 51:01:57-51:24:05, 51:26-51:41N, 51:43-51:46, 51:48-51:156, 51:158:01-51:163, 51:165-51:219, 51:221-51:236, 53:01:01-53:50, 56:05:01-56:05:02, 56:21, 56:36, 58:01:01:01-58:01:21, 58:01:23-58:02:02, 58:04-58:10N, 58:12-58:19, 58:21-58:29, 58:31N-58:93N, 67:05, 78:01:01:01, 78:01:02-78:09, 81:03, 83:01 [?]
14	165 bp	800 bp	*52:07	*07:02:01:01-07:57, 07:59-07:316N, 08:01:01:01-08:05, 08:07-08:177, 08:179-08:190, 08:192-08:196, 13:01:01:01-13:01:11, 13:01:13-13:04, 13:06-13:23, 13:25-13:60, 13:62-13:111, 14:01:01:01 ^w -14:61 ^w , 15:01:01:01-15:01:04, 15:01:06-15:04:03, 15:04:04 ^w , 15:05:01-15:19, 15:21:01:01-15:21:01:02, 15:23-15:40:02, 15:42-15:58, 15:60-15:99, 15:101, 15:103-15:129,

101.562-06 – including *Taq* polymerase, IFU-01
101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

				15:131-15:227, 15:229-15:283, 15:285-15:304N, 15:306-15:434, 15:436-15:450, 18:01:01:01-18:15, 18:17N-18:149, 27:01-27:05:30, 27:05:32-27:21, 27:23-27:175, 35:31, 35:35 ^w , 35:43:01, 35:46, 35:57, 35:60, 35:79, 35:87, 35:185, 35:279, 37:01:01:01-37:71, 38:01:01:01 ^w -38:71 ^w , 39:01:01:01 ^w -39:01:01:07 ^w , 39:01:03:01 ^w -39:20 ^w , 39:22 ^w -39:42 ^w , 39:43, 39:44 ^w -39:45 ^w , 39:47 ^w -39:136 ^w , 40:01:01-40:01:41, 40:01:42 ^w , 40:01:43-40:01:50, 40:01:52-40:06:02, 40:06:03 ^w , 40:06:04:01-40:06:07, 40:06:09-40:16, 40:18-40:40, 40:42-40:235, 40:237-40:271, 40:273-40:300, 40:302-40:365, 40:367-40:371, 41:01:01:01-41:42, 41:43 ^w , 41:44-41:55, 42:01:01-42:02:01:02, 42:04-42:24, 44:02:01:01-44:65, 44:67-44:117, 44:119-44:245, 44:247-44:288, 45:01:01-45:23, 46:01:01-46:74, 47:01:01:02-47:10, 48:01:01:01-48:01:06, 48:02:02-48:46, 49:01:01:01-49:14, 49:16-49:50, 50:01:01:01-50:02, 50:04-50:20, 50:31-50:55, 51:42, 51:157, 54:01:01-54:38, 55:01:01-55:01:02, 55:01:04-55:05, 55:07-55:89N, 56:01:01:01-56:04:02, 56:06-56:20:02, 56:22-56:57, 57:01:01:01-57:01:10, 57:01:12-57:90, 57:92-57:100, 58:11, 58:20 ^w , 59:01:01:01-59:10N, 67:01:01 ^w -67:04 ^w , 67:06 ^w -67:07 ^w , 78:08, 81:01:01-81:02, 81:04N-81:08, 82:01:01:01-82:02:01:02, 82:03, 83:01 [?]
15⁴	95 bp	800 bp	*52:12, 52:26, 52:63, 52:75	*07:84, 13:04, 13:35, 13:72, 15:04:01:01-15:04:04, 15:16:01:01-15:16:03, 15:67, 15:95, 15:155, 15:222, 15:254, 15:293, 15:310, 15:362, 15:408, 35:37, 35:235, 35:265, 40:44, 40:159, 41:21, 44:20, 44:47, 44:100, 44:197, 45:09, 46:32, 49:04:01-49:05, 50:33, 51:37, 51:90, 51:92:01-51:92:02, 51:197, 51:216, 54:14-54:15, 55:23, 55:27, 55:68, 56:50, C*07:463, C*12:183
16⁴	90 bp 120 bp	1070 bp	*52:31:01-52:31:02	*35:01:10, 35:04:02, 40:28, 44:03:40, 44:62, 51:04:01-51:04:02, 51:46, 51:56:01-51:56:03, 51:139, 51:227, 53:28
17	240 bp	1070 bp	*52:43	*51:65
18	160 bp	1070 bp	*52:30	*51:69
19⁴	65 bp	1070 bp	*52:53	
20	170 bp	800 bp	*52:16, 52:27	*07:27, 07:50, 08:04:01-08:04:02, 08:17, 08:54:01-08:54:02, 08:110, 15:03:01:01-15:03:07, 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, 15:235, 15:242:01-15:242:02, 15:251:01-15:251:02, 15:253, 15:266, 15:274, 15:281-15:282, 15:369, 15:379, 15:389,

101.562-06 – including *Taq* polymerase, IFU-01
101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

				15:397, 15:429, 15:444, 15:448, 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, 18:103-18:106, 18:108-18:124, 18:126-18:135, 18:137-18:149, 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, 37:68-37:71, 38:03, 39:02:01-39:02:03, 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, 40:12, 40:149, 41:22, 42:11, 44:130, 44:156, 44:221, 44:224, 44:258, 48:01:01:01-48:02:01, 48:02:03-48:05, 48:07-48:30, 48:32-48:46, 49:25
21⁷	-	-	-	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*52 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 mixes 7 and 11 may have tendencies of unspecific amplifications.

⁶Primer mix 7 has a tendency of giving rise to primer oligomer formation.

⁷Primer mix 21 contains a negative control, which will amplify more than 95% 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 430 base pairs.

‘?’, nucleotide sequence information not available for the primer matching sequence.

‘w’, might be weakly amplified.

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	95	135	95	140	145	135	160	145	100	95	85	85
PCR product		235		280	190	180	215	500	285	245	225	
					225	225						
Length of int.	800	1070	1070	800	1070	1070	1070	1070	800	1070	1070	1070
pos. control ¹												
5'-primer(s) ²	527	106	206	209	134	134	86	206	213	206	133	272
	5'-TgA 3'	5'-CCA 3'	5'-gAC 3'	5'-ggC 3'	5'-CCC 3'	5'-CCC 3'	5'-CAA 3'	5'-gAC 3'	5'-CCg 3'	5'-gAC 3'	5'-CCA 3'	5'-CTC 3'
				652	435	435	362		357	357	272	
				5'-CCg 3'	5'-AAA 3'	5'-AAA 3'	5'-gAC 3'		5'-Tgg 3'	5'-Tgg 3'	5'-CTT 3'	
3'-primer(s) ³	583	200	259	309	317	317	206	309	272	262	317	317
	5'-gTg 3'	5'-TCT 3'	5'-CTC 3'	5'-ATC 3'	5'-ggA 3'	5'-ggA 3'	5'-CCg 3'	5'-gTg 3'	5'-TgA 3'	5'-TgC 3'	5'-ggA 3'	5'-ggA 3'
		302	259	891	538	527	538	420	419	559		317
		5'-ggC 3'	5'-CTg 3'	5'-CAg 3'	5'-CCA 3'	5'-CCA 3'	5'-gTC 3'	5'-gCT 3'	5'-CgA 3'	5'-CTC 3'		5'-ggA 3'
					583	527			601			
					5'-gTA 3'	5'-CCA 3'			5'-CTA 3'			
						572						
						5'-gCg 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
Length of spec.	165	165	95	90	240	160	65	170
PCR product				120				
Length of int.	800	800	800	1070	1070	1070	1070	800
pos. control ¹								
5'-primer(s) ²	652	652	357	355	383	357	961	142
	5'-CCg 3'	5'-CCA 3'	5'-Tgg 3'	5'-TCA 3'	5'-ggA 3'	5'-Tgg 3'	5'-TTA 3'	5'-TCT 3'
				385				
				5'-ggT 3'				
3'-primer(s) ³	774	774	412	435	583	475	985	272
	5'-ggT 3'	5'-ggT 3'	5'-gTC 3'	5'-TCT 3'	5'-gTg 3'	5'-CgT 3'	5'-AgT 3'	5'-Tgg 3'
Well No.	13	14	15	16	17	18	19	20

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.

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

CELL LINE VALIDATION SHEET																					
HLA-B*52 SSP primer set ²																					
					Prod. No.:	Well ³															
						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
						201562201	201562202	201897803	201562204	201562205	201562206	201562207	201562208	201562209	201562210	201562211	201562212	201562213	201893146	201562215	201562216
	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	9025 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 ¹	*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 SSTS	*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 ¹	*51:01				+	-	-	-	-	-	-	-	-	-	+	-	+	-	-	-
48	9303 TER-ND	*35:01	*44:03			-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

CELL LINE VALIDATION SHEET					Well ³			
HLA-B*52 SSP primer set ²					17	18	19	20
				Prod. No.:	201562217	201562218	201562219	201562220
	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	9025 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 ¹	*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 ¹	*51:01			-	-	-	-
48	9303 TER-ND	*35:01	*44:03		-	-	-	-

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: 9G4

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.

³The A*34:01 allele is amplified by primer mix 12 in the IHL cell line.

No DNAs carrying the alleles to be amplified by primer solutions 2, 6 to 8 and 16 to 19 were available. The specificities of the primers in primer solutions 2, 6 to 8 and 16 were tested by separately adding one or more additional 5'-primers, respectively one or two additional 3'-primers. In primer solution 18 it was only possible to test the 5'-primer, the 3'-primer was not possible to test. In primer solutions 17 and 19 it were only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 5 to 7, 9 and 11 one or two 5'-primers were not possible to test, and in primer solutions 2, 3, 9, 10 and 12 one 3'-primer was not possible to test. Additional primers in primer solutions 4, 5, 9, 10 and 15 were tested by separately adding one or two additional 5'-primers and/or one 3'-primer.

101.562-06 – including *Taq* polymerase, IFU-01

101.562-06u – without *Taq* polymerase, IFU-02

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

Lot No.: **9G4**

Lot-specific information

ADDRESSES:

Manufacturer:

Olerup SSP AB, Franzengatan 5, SE-112 51 Stockholm, Sweden.

Tel: +46-8-717 88 27

Fax: +46-8-717 88 18

E-mail: olerup-se@caredx.com

Web page: <http://www.olerup.com>

Distributed by:

Olerup GmbH, Löwengasse 47 / 6, AT-1030 Vienna, Austria.

Tel: +43-1-710 15 00

Fax: +43-1-710 15 00 10

E-mail: olerup-at@caredx.com

Web page: <http://www.olerup.com>

Olerup Inc., 901 S. Bolmar St., Suite R, West Chester, PA 19382

Tel: 1-877-OLERUP1

Fax: 610-344-7989

E-mail: olerup-us@caredx.com

Web page: <http://www.olerup.com>

For information on *Olerup* distributors worldwide, contact **Olerup GmbH**.