

101.516-24/04 – including *Taq* polymerase, IFU-01
101.516-24u/04u – without *Taq* polymerase, IFU-02

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

Lot No.: **0D5**

Lot-specific information
Olerup SSP® HLA-B*15

Product number:	101.516-24/04 – including <i>Taq</i> pol. 101.516-24u/04u – without <i>Taq</i> pol.
Lot number:	0D5
Expiry date:	2018-May-01
Number of tests:	24 tests – Product No. 101.516-24/24u 4 tests – Product No. 101.516-04/04u
Number of wells per test:	95+1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C

This Product Description is only valid for Lot No. 0D5.

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*15 LOT (66V)**

The HLA-B*15 kit is updated for new alleles to enable separation of:

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

A well containing Negative Control primer pairs has been added.

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

¹As described in section Uniquely Identified Alleles.

The HLA-B*15 primer set, specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup SSP®* HLA-B*15 lot was made (Lot No. 66V). The kit design is based on IMGT/HLA database 3.21.1.

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

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

Well	5'-primer	3'-primer	rationale
9	-	Added	3'-primer added for the improved yield of the B*15:237 allele.
23	-	-	Exchanged positive control primer pair for decreased tendency of primer oligomer formation.
52	-	Added	3'-primers added for the B*15:321Q and 15:307 alleles.
55	-	Added	3'-primer added for the B*15:321Q allele.
57	Added	-	5'-primer added for the B*15:300 allele.
58	Added	-	5'-primer added for the B*15:319 allele.
64	-	Added	3'-primer added for the B*15:301 allele.
65	Added	-	5'-primer added for the B*15:232 allele.
71	-	Added	3'-primer added for the B*15:347 allele.
78	Added	-	5'-primer added for the B*15:232 allele.
80	Added	-	5'-primer added for the B*15:320 allele.
88	-	Added	3'-primer added for the B*15:240 allele.
89	-	Added	3'-primer added for the B*15:282 allele.
92	-	Added	3'-primer added for the B*15:332 allele.
93	-	Added	3'-primer added for the B*15:347 allele.
95	Added	Added	Primer pair added for the B*15:358 allele.
96	-	-	Updated negative control.

Changes in revision R01 compared to R00:

1. Primer mix 66 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B*15 resolution primer mixes. A foot note has been added in the Specificity Table.

Changes in revision R02 compared to R01:

1. Primer mix 83 does not amplify the B*15:159 and 15:260 and the B*07:23, 18:95, 40:79, 40:190, 40:289, 41:14 and 46:52 alleles. Thus, this lot of the B*15 kit cannot distinguish the B*15:159 and the B*15:01:01:01, 15:01:01:03, 15:01:03, 15:01:06-15:01:13, 15:01:15-15:01:16, 15:01:18-15:01:30, 15:01:32-15:01:39, 15:92, 15:217, 15:231, 15:244, 15:251, 15:257, 15:261, 15:264, 15:267, 15:276, 15:279-15:280, 15:286, 15:296, 15:309, 15:315-15:318, 15:326, 15:333, 15:340, 15:346, 15:353, 15:355, 15:359 and 15:363 alleles or the B*15:260 and the B*15:82 and 15:256 alleles. This has been corrected in the Specificity and Interpretation Tables.

Changes in revision R03 compared to R02:

1. Primer mix 77 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B*15 resolution primer mixes. A foot note has been added in the Specificity Table.

Changes in revision R04 compared to R03:

1. The expiry date has been corrected.

Changes in revision R05 compared to R04:

1. Primer mix 52 does not amplify the B*15:98 or the C*03:180 alleles, and this primer mix does amplify the B*15:92 and 15:213 alleles. This has been corrected in the Specificity and Interpretation Tables.

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Well **96** 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'-CAC3'	5'-Agg3'	5'-TTA3'	5'-Tgg3'	5'-Tgg3'	5'-Tgg3'	5'-TAC3'
							36
							5'-TAT3'
3'-primer²	231	2nd I	507	59	58	57	47
	5'-TgC3'	5'-AAA3'	5'-TTg3'	5'-CTC3'	5'-ggC3'	5'-CTC3'	5'-ACA3'
							48
							5'-gCA3'
							48
							5'-gCC3'
							52
							5'-TgT3'
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*15 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*15:01 to B*15:363 alleles.

PLATE LAYOUT

Each test consists of 96 PCR reactions in a 96 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	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	NC

The 96 well cut PCR plate is marked with 'HLA-B*15' in silver/gray ink.

Well No. 1 is marked with the Lot No. '0D5'.

Wells 1 to 95 – HLA-B*15 high resolution primers.

Well 96 – 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.

INTERPRETATION

Due to the sharing of sequence motifs between HLA-B alleles, non-HLA-B*15 alleles will be amplified by primer mixes 1 to 3, 6 to 9, 11, 15, 16, 18, 20, 22 to 24, 27, 29 to 35, 37, 38, 41 to 52, 55, 56, 58 to 62, 65 to 67, 70, 72 to 74, 78, 82 to 84, 87, 90 to 92 and 95. In addition, a few HLA-A and HLA-C alleles will be amplified by primer mixes 1 to 3, 5, 7, 12, 15, 18, 21, 22, 25 to 27, 34 to 40, 50, 52 to 54, 59, 64, 67, 68, 71, 73, 78, 82, 84, 85, 87 to 89 and 93.

For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*15 alleles, i.e. **B*15:01 to B*15:363**, recognized by the HLA Nomenclature Committee in August 2015¹ will be amplified by the primers in the HLA-B*15 subtyping kit^{2,3}.

The HLA-B*15 kit enables separation of the confirmed HLA-B*15 alleles as listed in the IMGT/HLA database. An HLA allele is listed as confirmed by IMGT/HLA if it has

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been sequenced by more than a single laboratory or from multiple sources. Current allele confirmation status for HLA- B*15 alleles is listed below.

The HLA- B*15 kit also enables identification of polymorphisms in exons outside of the region encoding the peptide binding domain and of null and alternatively expressed alleles.

The following HLA-B*15 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix	Alleles	Primer mix
B*15:120, 15:258N	93	B*15:206, 15:343	50
B*15:142, 15:147	78	B*15:208, 15:230	70
B*15:166, 15:193	86	B*15:301, 15:302N	64
B*15:169, 15:225	87		

The HLA-B*15 subtyping kit cannot distinguish these silent mutations: the B*15:01:01:01, 15:01:03, 15:01:03, 15:01:06-15:01:13, 15:01:15-15:01:16, 15:01:18-15:01:30 and 15:01:32-15:01:39 alleles, the B*15:02:01-15:02:09 alleles, the B*15:03:01-15:03:02 and 15:03:04-15:03:05 alleles, the B*15:04:01-15:04:2 alleles, the B*15:05:01-15:05:02 alleles, the B*15:07:01-15:07:03 alleles, the B*15:08:01-15:08:02 alleles, the B*15:10:01 and 15:10:03-15:10:04 alleles, the B*15:11:01-15:11:02 and 15:11:05-15:11:06 alleles, the B*15:13:01-15:13:02 alleles, the B*15:16:01-15:16:03 alleles, the B*15:17:01-15:17:03 alleles, the B*15:18:01 and 15:18:04-15:18:06 alleles, the B*15:24:01-15:24:02 alleles, the B*15:25:01-15:25:03 alleles, the B*15:27:01-15:27:03 alleles, the B*15:32:01-15:32:02 alleles, the B*15:38:01-15:38:02 alleles, the B*15:39:01-15:39:02 alleles, the B*15:47:01-15:47:02 alleles, the B*15:64:01-15:64:02 alleles, the B*15:78:01-15:78:03 or the B*15:179:01-15:179:02 alleles.

¹HLA-B alleles listed on the IMGT/HLA web page 2015-August-11, release 3.21.1, 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>.

³This lot of the B*15 kit cannot distinguish the B*15:159 and the B*15:01:01:01, 15:01:01:03, 15:01:03, 15:01:06-15:01:13, 15:01:15-15:01:16, 15:01:18-15:01:30, 15:01:32-15:01:39, 15:92, 15:217, 15:231, 15:244, 15:251, 15:257, 15:261, 15:264, 15:267, 15:276, 15:279-15:280, 15:286, 15:296, 15:309, 15:315-15:318, 15:326, 15:333, 15:340, 15:346, 15:353, 15:355, 15:359 and 15:363 alleles or the B*15:260 and the B*15:82 and 15:256 alleles.

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ALLELE CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
B*15:01:01:01	Confirmed	B*15:03:02	Confirmed	B*15:25:02	Confirmed	B*15:69	Confirmed
B*15:01:01:02N	Confirmed	B*15:03:03	Confirmed	B*15:25:03	Unconfirmed	B*15:70	Confirmed
B*15:01:01:03	Unconfirmed	B*15:03:04	Confirmed	B*15:26N	Unconfirmed	B*15:71	Confirmed
B*15:01:02	Confirmed	B*15:03:05	Confirmed	B*15:27:01	Confirmed	B*15:72	Unconfirmed
B*15:01:03	Unconfirmed	B*15:04:01	Confirmed	B*15:27:02	Unconfirmed	B*15:73	Confirmed
B*15:01:04	Unconfirmed	B*15:04:02	Confirmed	B*15:27:03	Unconfirmed	B*15:74	Confirmed
B*15:01:06	Confirmed	B*15:05:01	Confirmed	B*15:28	Unconfirmed	B*15:75	Confirmed
B*15:01:07	Unconfirmed	B*15:05:02	Confirmed	B*15:29	Confirmed	B*15:76	Unconfirmed
B*15:01:08	Unconfirmed	B*15:06	Confirmed	B*15:30	Confirmed	B*15:77	Unconfirmed
B*15:01:09	Confirmed	B*15:07:01	Confirmed	B*15:31	Confirmed	B*15:78:01	Confirmed
B*15:01:10	Confirmed	B*15:07:02	Unconfirmed	B*15:32:01	Confirmed	B*15:78:02	Unconfirmed
B*15:01:11	Confirmed	B*15:07:03	Confirmed	B*15:32:02	Unconfirmed	B*15:78:03	Unconfirmed
B*15:01:12	Unconfirmed	B*15:08:01	Confirmed	B*15:33	Confirmed	B*15:79N	Unconfirmed
B*15:01:13	Confirmed	B*15:08:02	Unconfirmed	B*15:34	Confirmed	B*15:80	Unconfirmed
B*15:01:14	Confirmed	B*15:09	Confirmed	B*15:35	Confirmed	B*15:81	Unconfirmed
B*15:01:15	Confirmed	B*15:10:01	Confirmed	B*15:36	Unconfirmed	B*15:82	Unconfirmed
B*15:01:16	Confirmed	B*15:10:02	Confirmed	B*15:37	Confirmed	B*15:83	Unconfirmed
B*15:01:17	Unconfirmed	B*15:10:03	Unconfirmed	B*15:38:01	Confirmed	B*15:84	Unconfirmed
B*15:01:18	Unconfirmed	B*15:10:04	Unconfirmed	B*15:38:02	Confirmed	B*15:85	Unconfirmed
B*15:01:19	Unconfirmed	B*15:11:01	Confirmed	B*15:39:01	Confirmed	B*15:86	Confirmed
B*15:01:20	Unconfirmed	B*15:11:02	Confirmed	B*15:39:02	Unconfirmed	B*15:87	Unconfirmed
B*15:01:21	Unconfirmed	B*15:11:03	Unconfirmed	B*15:40	Confirmed	B*15:88	Unconfirmed
B*15:01:22	Unconfirmed	B*15:11:04	Unconfirmed	B*15:42	Confirmed	B*15:89	Confirmed
B*15:01:23	Unconfirmed	B*15:11:05	Unconfirmed	B*15:43	Unconfirmed	B*15:90	Unconfirmed
B*15:01:24	Unconfirmed	B*15:11:06	Unconfirmed	B*15:44	Unconfirmed	B*15:91	Unconfirmed
B*15:01:25	Unconfirmed	B*15:12	Confirmed	B*15:45	Confirmed	B*15:92	Unconfirmed
B*15:01:26	Unconfirmed	B*15:13:01	Confirmed	B*15:46	Confirmed	B*15:93	Unconfirmed
B*15:01:27	Unconfirmed	B*15:13:02	Unconfirmed	B*15:47:01	Confirmed	B*15:94N	Unconfirmed
B*15:01:28	Unconfirmed	B*15:14	Confirmed	B*15:47:02	Confirmed	B*15:95	Unconfirmed
B*15:01:29	Unconfirmed	B*15:15	Confirmed	B*15:48	Confirmed	B*15:96	Unconfirmed
B*15:01:30	Unconfirmed	B*15:16:01	Confirmed	B*15:49	Unconfirmed	B*15:97	Unconfirmed
B*15:01:31	Confirmed	B*15:16:02	Confirmed	B*15:50	Confirmed	B*15:98	Unconfirmed
B*15:01:32	Unconfirmed	B*15:16:03	Unconfirmed	B*15:51	Unconfirmed	B*15:99	Unconfirmed
B*15:01:33	Unconfirmed	B*15:17:01:01	Confirmed	B*15:52	Confirmed	B*15:101	Unconfirmed
B*15:01:34	Unconfirmed	B*15:17:01:02	Unconfirmed	B*15:53	Confirmed	B*15:102	Unconfirmed
B*15:01:35	Unconfirmed	B*15:17:02	Confirmed	B*15:54	Confirmed	B*15:103	Unconfirmed
B*15:01:36	Confirmed	B*15:17:03	Unconfirmed	B*15:55	Confirmed	B*15:104	Unconfirmed
B*15:01:37	Unconfirmed	B*15:18:01	Confirmed	B*15:56	Confirmed	B*15:105	Unconfirmed
B*15:01:38	Unconfirmed	B*15:18:02	Confirmed	B*15:57	Unconfirmed	B*15:106	Confirmed
B*15:01:39	Unconfirmed	B*15:18:03	Confirmed	B*15:58	Confirmed	B*15:107	Unconfirmed
B*15:02:01	Confirmed	B*15:18:04	Confirmed	B*15:60	Unconfirmed	B*15:108	Confirmed
B*15:02:02	Unconfirmed	B*15:18:05	Unconfirmed	B*15:61	Confirmed	B*15:109	Unconfirmed
B*15:02:03	Unconfirmed	B*15:18:06	Unconfirmed	B*15:62	Confirmed	B*15:110	Unconfirmed
B*15:02:04	Confirmed	B*15:19	Unconfirmed	B*15:63	Confirmed	B*15:111N	Unconfirmed
B*15:02:05	Unconfirmed	B*15:20	Confirmed	B*15:64:01	Confirmed	B*15:112	Unconfirmed
B*15:02:06	Unconfirmed	B*15:21	Confirmed	B*15:64:02	Unconfirmed	B*15:113	Confirmed
B*15:02:07	Unconfirmed	B*15:23	Confirmed	B*15:65	Unconfirmed	B*15:114	Unconfirmed
B*15:02:08	Unconfirmed	B*15:24:01	Confirmed	B*15:66	Unconfirmed	B*15:115	Unconfirmed
B*15:02:09	Unconfirmed	B*15:24:02	Unconfirmed	B*15:67	Confirmed	B*15:116	Unconfirmed
B*15:03:01	Confirmed	B*15:25:01	Confirmed	B*15:68	Confirmed	B*15:117	Unconfirmed

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B*15:118	Unconfirmed	B*15:169	Unconfirmed	B*15:218Q	Unconfirmed	B*15:268	Confirmed
B*15:119	Unconfirmed	B*15:170	Confirmed	B*15:219	Unconfirmed	B*15:269	Unconfirmed
B*15:120	Unconfirmed	B*15:171	Confirmed	B*15:220	Confirmed	B*15:270	Unconfirmed
B*15:121	Unconfirmed	B*15:172	Confirmed	B*15:221	Unconfirmed	B*15:271	Confirmed
B*15:122	Unconfirmed	B*15:173	Confirmed	B*15:222	Unconfirmed	B*15:272N	Confirmed
B*15:123	Unconfirmed	B*15:174	Unconfirmed	B*15:223	Unconfirmed	B*15:273	Unconfirmed
B*15:124	Unconfirmed	B*15:175	Unconfirmed	B*15:224	Unconfirmed	B*15:274	Unconfirmed
B*15:125	Confirmed	B*15:176	Confirmed	B*15:225	Unconfirmed	B*15:275	Unconfirmed
B*15:126	Unconfirmed	B*15:177	Unconfirmed	B*15:226N	Unconfirmed	B*15:276	Unconfirmed
B*15:127	Unconfirmed	B*15:178	Unconfirmed	B*15:227	Unconfirmed	B*15:277	Confirmed
B*15:128	Unconfirmed	B*15:179:01	Unconfirmed	B*15:228	Confirmed	B*15:278	Confirmed
B*15:129	Unconfirmed	B*15:179:02	Unconfirmed	B*15:229	Confirmed	B*15:279	Unconfirmed
B*15:131	Unconfirmed	B*15:180	Confirmed	B*15:230	Unconfirmed	B*15:280	Unconfirmed
B*15:132	Confirmed	B*15:181N	Confirmed	B*15:231	Unconfirmed	B*15:281	Unconfirmed
B*15:133	Unconfirmed	B*15:182N	Unconfirmed	B*15:232	Confirmed	B*15:282	Confirmed
B*15:134	Unconfirmed	B*15:183	Confirmed	B*15:233	Unconfirmed	B*15:283	Unconfirmed
B*15:135	Confirmed	B*15:184	Unconfirmed	B*15:234	Unconfirmed	B*15:284	Unconfirmed
B*15:136	Unconfirmed	B*15:185	Unconfirmed	B*15:235	Confirmed	B*15:285	Confirmed
B*15:137	Unconfirmed	B*15:186	Unconfirmed	B*15:236	Confirmed	B*15:286	Unconfirmed
B*15:138	Unconfirmed	B*15:187	Unconfirmed	B*15:237	Confirmed	B*15:287	Unconfirmed
B*15:139	Unconfirmed	B*15:188	Unconfirmed	B*15:238	Unconfirmed	B*15:288	Unconfirmed
B*15:140	Unconfirmed	B*15:189	Confirmed	B*15:239	Confirmed	B*15:289	Unconfirmed
B*15:141	Confirmed	B*15:190N	Confirmed	B*15:240	Confirmed	B*15:290	Confirmed
B*15:142	Confirmed	B*15:191	Unconfirmed	B*15:241	Confirmed	B*15:291	Unconfirmed
B*15:143	Unconfirmed	B*15:192	Unconfirmed	B*15:242	Unconfirmed	B*15:292	Unconfirmed
B*15:144	Unconfirmed	B*15:193	Unconfirmed	B*15:243	Unconfirmed	B*15:293	Unconfirmed
B*15:145	Unconfirmed	B*15:194	Unconfirmed	B*15:244	Unconfirmed	B*15:294N	Unconfirmed
B*15:146	Confirmed	B*15:195	Unconfirmed	B*15:245Q	Unconfirmed	B*15:295	Unconfirmed
B*15:147	Confirmed	B*15:196	Unconfirmed	B*15:246N	Unconfirmed	B*15:296	Unconfirmed
B*15:148	Unconfirmed	B*15:197	Unconfirmed	B*15:247	Unconfirmed	B*15:297	Unconfirmed
B*15:149N	Unconfirmed	B*15:198	Unconfirmed	B*15:248	Confirmed	B*15:298	Unconfirmed
B*15:150	Confirmed	B*15:199	Unconfirmed	B*15:249	Unconfirmed	B*15:299	Unconfirmed
B*15:151	Unconfirmed	B*15:200	Unconfirmed	B*15:250	Unconfirmed	B*15:300	Confirmed
B*15:152	Unconfirmed	B*15:201	Unconfirmed	B*15:251	Unconfirmed	B*15:301	Confirmed
B*15:153	Confirmed	B*15:202	Unconfirmed	B*15:252	Unconfirmed	B*15:302N	Unconfirmed
B*15:154	Confirmed	B*15:203	Unconfirmed	B*15:253	Unconfirmed	B*15:303	Unconfirmed
B*15:155	Confirmed	B*15:204	Confirmed	B*15:254	Unconfirmed	B*15:304N	Unconfirmed
B*15:156	Unconfirmed	B*15:205	Unconfirmed	B*15:255	Unconfirmed	B*15:305	Unconfirmed
B*15:157	Confirmed	B*15:206	Confirmed	B*15:256	Unconfirmed	B*15:306	Unconfirmed
B*15:158	Confirmed	B*15:207	Confirmed	B*15:257	Unconfirmed	B*15:307	Unconfirmed
B*15:159	Confirmed	B*15:208	Confirmed	B*15:258N	Unconfirmed	B*15:308	Unconfirmed
B*15:160	Confirmed	B*15:209N	Unconfirmed	B*15:259	Unconfirmed	B*15:309	Unconfirmed
B*15:161	Confirmed	B*15:210	Unconfirmed	B*15:260	Unconfirmed	B*15:310	Unconfirmed
B*15:162	Confirmed	B*15:211	Confirmed	B*15:261	Unconfirmed	B*15:311	Unconfirmed
B*15:163	Unconfirmed	B*15:212	Unconfirmed	B*15:262N	Unconfirmed	B*15:312	Unconfirmed
B*15:164	Unconfirmed	B*15:213	Unconfirmed	B*15:263	Confirmed	B*15:313	Unconfirmed
B*15:165	Unconfirmed	B*15:214	Unconfirmed	B*15:264	Unconfirmed	B*15:314	Unconfirmed
B*15:166	Unconfirmed	B*15:215	Unconfirmed	B*15:265	Unconfirmed	B*15:315	Unconfirmed
B*15:167	Confirmed	B*15:216	Unconfirmed	B*15:266	Confirmed	B*15:316	Unconfirmed
B*15:168	Unconfirmed	B*15:217	Unconfirmed	B*15:267	Unconfirmed	B*15:317	Unconfirmed

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101.516-24u/04u – without *Taq* polymerase, IFU-02

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Lot-specific information

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
B*15:318	Unconfirmed	B*15:338	Unconfirmed	B*15:363	Unconfirmed
B*15:319	Confirmed	B*15:339	Unconfirmed		
B*15:320	Unconfirmed	B*15:340	Unconfirmed		
B*15:321Q	Unconfirmed	B*15:341	Unconfirmed		
B*15:322	Unconfirmed	B*15:342	Confirmed		
B*15:323	Unconfirmed	B*15:343	Unconfirmed		
B*15:324	Unconfirmed	B*15:344	Unconfirmed		
B*15:325	Unconfirmed	B*15:345	Unconfirmed		
B*15:326	Unconfirmed	B*15:346	Unconfirmed		
B*15:327	Unconfirmed	B*15:347	Confirmed		
B*15:328	Unconfirmed	B*15:353	Unconfirmed		
B*15:329	Unconfirmed	B*15:354	Unconfirmed		
B*15:330	Unconfirmed	B*15:355	Unconfirmed		
B*15:331	Unconfirmed	B*15:356	Unconfirmed		
B*15:332	Confirmed	B*15:357	Unconfirmed		
B*15:333	Unconfirmed	B*15:358	Unconfirmed		
B*15:334	Unconfirmed	B*15:359	Unconfirmed		
B*15:335	Confirmed	B*15:360	Unconfirmed		
B*15:336	Unconfirmed	B*15:361	Unconfirmed		
B*15:337	Unconfirmed	B*15:362	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2015-August-11, release 3.21.1, www.ebi.ac.uk/imgt/hla.

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Lot-specific information
SPECIFICITY TABLE

HLA-B*15 SSP subtyping

Specificities and sizes of the PCR products of the 95+1 primer mixes used for
HLA-B*15 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-B*15 alleles ³	Other amplified Class I alleles ⁴
1	395 bp	800 bp	*15:01:01:01-15:01:04, 15:01:06-15:07:03, 15:12-15:15, 15:19-15:20, 15:24:01-15:28, 15:30-15:36, 15:38:01-15:40, 15:42-15:43, 15:45-15:50, 15:53-15:55, 15:57-15:58, 15:60-15:65, 15:69-15:71, 15:73, 15:75, 15:77-15:79N, 15:81-15:89, 15:91-15:92, 15:94N, 15:96, 15:98, 15:102-15:107, 15:109-15:113, 15:116-15:118, 15:120-15:123, 15:125-15:129, 15:131-15:132, 15:135-15:138, 15:140-15:142, 15:144-15:147, 15:150-15:151, 15:154-15:160, 15:163-15:167, 15:169-15:175, 15:178-15:179:02, 15:181N-15:185, 15:187-15:188, 15:190N, 15:192-15:195, 15:199, 15:201-15:207, 15:210-15:214, 15:217-15:220, 15:223-15:225, 15:227-15:228, 15:231-15:235, 15:237, 15:239-15:242, 15:244-15:251, 15:253, 15:256-15:262N, 15:264-15:267, 15:269-15:272N, 15:274, 15:276-15:283, 15:285-15:289, 15:291, 15:295-15:302N, 15:304N, 15:308-15:310, 15:315-15:322, 15:324-15:328, 15:330-15:334, 15:336, 15:339-15:347, 15:353, 15:355, 15:357-15:360, 15:363	*40:12, C*16:85
2	290 bp	1070 bp	*15:01:01:01-15:01:03, 15:01:06-15:02:09, 15:03:03, 15:04:01-15:08:02, 15:10:02, 15:11:01-15:11:03, 15:11:05-15:15, 15:17:01:01-15:17:03, 15:19-15:21, 15:24:01-15:28, 15:30-15:36, 15:38:01-15:40, 15:42-15:46, 15:48, 15:50, 15:55-15:58, 15:60, 15:63, 15:65-15:66, 15:70-15:71, 15:73, 15:75-15:79N, 15:81-15:89, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:107, 15:109-15:113, 15:116-15:118, 15:120-15:122, 15:125-15:126, 15:128-15:129, 15:135-15:150, 15:152, 15:154-15:155, 15:157, 15:159-15:160, 15:162-15:172, 15:174-15:175, 15:177-15:179:02, 15:181N-15:185, 15:187-15:196, 15:199, 15:201-15:209N, 15:211, 15:213-15:219, 15:223-15:225, 15:227-15:228, 15:230-15:234,	*46:01:01-46:64, C*01:73, C*05:01:28, C*07:02:30, C*08:16:02

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			15:236-15:237, 15:239-15:241, 15:244-15:251, 15:256-15:262N, 15:264-15:265, 15:267-15:273, 15:276-15:280, 15:283-15:289, 15:291, 15:295-15:305, 15:308-15:310, 15:315-15:322, 15:324-15:328, 15:330-15:334, 15:339-15:346, 15:353, 15:355-15:361, 15:363	
3⁵	120 bp	1070 bp	*15:01:01:01-15:01:04, 15:01:06-15:01:16, 15:01:17^w, 15:01:18-15:01:30, 15:01:32-15:01:39, 15:04:01-15:04:02, 15:07:01-15:08:02, 15:11:01-15:12, 15:14-15:15, 15:19, 15:24:01-15:24:02, 15:26N-15:28, 15:30, 15:32:01-15:32:02, 15:34-15:35, 15:38:01-15:38:02, 15:43, 15:45-15:46, 15:50, 15:53-15:54, 15:56-15:58, 15:60, 15:63, 15:66, 15:68, 15:70-15:71, 15:73, 15:75-15:77, 15:79N, 15:81-15:82, 15:85, 15:87, 15:90, 15:92, 15:94N, 15:96-15:97, 15:101-15:102, 15:104-15:105, 15:109-15:111N, 15:113, 15:117-15:118, 15:120, 15:122, 15:125-15:126, 15:128-15:129, 15:135, 15:137, 15:140, 15:142-15:149N, 15:152, 15:154, 15:157, 15:159-15:160, 15:163-15:167, 15:169, 15:171-15:172, 15:174-15:175, 15:178, 15:180-15:184, 15:187, 15:189-15:193, 15:201-15:203, 15:205-15:207, 15:209N, 15:211-15:212, 15:215, 15:217, 15:225, 15:227-15:228, 15:231-15:234, 15:236, 15:239, 15:241, 15:244-15:247, 15:251, 15:256-15:262N, 15:264, 15:267, 15:269-15:270, 15:272N, 15:276-15:280, 15:284-15:286, 15:296, 15:298-15:299, 15:303-15:305, 15:309, 15:315-15:318, 15:320-15:321Q, 15:324, 15:326-15:327, 15:331, 15:333-15:334, 15:336, 15:340, 15:342-15:344, 15:346-15:347, 15:353, 15:355, 15:359, 15:363	*07:100, 13:31, 13:41, 18:19, 27:25, 27:115, 35:14:01-35:14:02, 35:43:01-35:44, 35:62, 35:67, 35:79, 35:86, 35:102, 35:117, 35:135, 35:163, 35:185, 35:213, 35:265, 39:36, 44:146, 45:05, 46:01:01-46:02, 46:04-46:05, 46:07N, 46:09-46:10, 46:12, 46:14-46:17, 46:20, 46:22-46:24, 46:26-46:32, 46:34-46:42, 46:44, 46:46-46:53, 46:55N-46:57, 46:60-46:61, 46:63-46:64, 51:61:01-51:61:02, 52:21, 54:06, 54:33, 55:21, 56:03, 56:43, A*26:68, A*26:100, A*68:56, C*02:56, C*06:20, C*12:50
4	180 bp 390 bp	800 bp	*15:01:01:02N *15:285	
5⁷	385 bp	1070 bp	*15:02:01-15:02:09, 15:08:01-15:11:06, 15:13:01-15:13:02, 15:15, 15:18:01-15:18:06, 15:21, 15:23, 15:29, 15:31, 15:37, 15:44, 15:51-15:52, 15:55, 15:64:01-15:64:02, 15:72, 15:76, 15:80, 15:88-15:90, 15:93, 15:99, 15:108, 15:112, 15:114-15:115, 15:119, 15:121, 15:124, 15:133-15:134, 15:139, 15:143-15:144, 15:148, 15:153, 15:161, 15:170, 15:176, 15:186, 15:189, 15:191, 15:194, 15:197-15:198, 15:200, 15:209N, 15:213-15:215, 15:221, 15:223, 15:226N, 15:229, 15:238, 15:252, 15:263, 15:265, 15:275, 15:283-15:284, 15:290-15:294N, 15:297, 15:301-15:303,	C*06:147

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			15:305-15:308, 15:311-15:314, 15:319, 15:323, 15:325, 15:328-15:330, 15:335, 15:337-15:338, 15:341, 15:345, 15:354, 15:357-15:358	
6	525 bp	1070 bp	*15:02:01-15:02:09, 15:13:01-15:13:02, 15:21, 15:25:01-15:25:03, 15:36, 15:44, 15:62, 15:77, 15:80, 15:85, 15:88-15:89, 15:106, 15:112, 15:121, 15:139, 15:144, 15:154, 15:165, 15:170, 15:194, 15:204, 15:213-15:214, 15:223, 15:240, 15:250, 15:265, 15:271, 15:283, 15:289, 15:291, 15:297, 15:301-15:302N, 15:308, 15:319, 15:325, 15:328, 15:330, 15:341, 15:345, 15:357-15:358	*46:33
7	330 bp	1070 bp	*15:03:01-15:03:05, 15:09-15:10:04, 15:18:01-15:18:06, 15:23, 15:29, 15:37, 15:46-15:47:02, 15:49, 15:51-15:54, 15:61-15:62, 15:64:01-15:64:02, 15:69, 15:72, 15:74, 15:80, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:106, 15:108, 15:114-15:115, 15:119, 15:123-15:124, 15:127, 15:131-15:134, 15:143, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 15:197-15:198, 15:200, 15:210, 15:212, 15:220-15:221, 15:226N, 15:229, 15:235, 15:238, 15:242-15:243, 15:252-15:253, 15:255, 15:259, 15:263, 15:266, 15:274-15:275, 15:281-15:282, 15:290, 15:292-15:294N, 15:306-15:307, 15:311-15:314, 15:323, 15:329, 15:335, 15:337-15:338, 15:354	*40:12, C*07:46, C*07:356, C*15:99, C*16:85
8⁵	105 bp	1070 bp	*15:04:01-15:04:02, 15:16:01-15:16:03, 15:67, 15:95, 15:137, 15:155, 15:222, 15:254, 15:293, 15:310, 15:362	*13:04, 13:46, 13:72, 35:37, 35:235, 35:265, 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, 40:86, 40:159, 41:30, 45:02, 45:09, 46:32, 49:04:01-49:05, 50:09, 50:33, 51:13:01-51:13:02, 51:37, 51:63, 51:92:01-51:92:02, 51:97, 51:172, 52:14, 52:39, 54:14, 55:13, 55:23, 55:32, 55:58, 55:68, 56:22, 59:03, 73:01-73:02
9	365 bp	1070 bp	*15:05:01-15:05:02, 15:31, 15:48, 15:51 ^w , 15:52, 15:55, 15:84, 15:86, 15:91, 15:107, 15:114, 15:123-15:124, 15:136, 15:151, 15:155, 15:179:01 ^w -15:179:02 ^w , 15:185-15:186, 15:188, 15:218Q ^w , 15:222, 15:224, 15:235, 15:237, 15:275, 15:283, 15:332	*46:06, 46:09, 46:11, 46:13:01-46:13:03, 46:18-46:19, 46:21:01-46:21:02, 46:25, 46:33, 46:43
10	300 bp 515 bp	1070 bp	*15:37-15:38:02, 15:185, 15:323, 15:335 *15:06, 15:27:01-15:27:03, 15:84, 15:109, 15:112, 15:195, 15:327, 15:344	
11	140 bp	800 bp	*15:07:01-15:07:03, 15:45, 15:55, 15:68, 15:126, 15:207, 15:324, 15:329, 15:331,	*07:68:01-07:68:03, 07:100, 07:237, 08:71, 14:05, 14:13, 18:14, 27:32,

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			15:360	27:138, 35:05:01-35:05:03, 35:22, 35:51, 35:58, 35:66, 35:72, 35:89, 35:97, 35:199, 35:232, 38:19, 39:03, 39:14, 39:24:01-39:24:02, 39:29, 39:37, 39:76, 40:35:01-40:35:02, 40:71, 41:24, 42:10, 42:17, 44:54, 44:106, 44:135, 44:158, 44:184, 44:213, 46:12, 48:12, 48:14, 48:29, 51:64, 53:14, 58:18
12	400 bp	1070 bp	*15:08:01-15:08:02, 15:29, 15:49, 15:56, 15:191, 15:236	C*06:147
13	395 bp	800 bp	*15:09-15:10:04, 15:18:01-15:18:06, 15:21, 15:23, 15:37, 15:44, 15:51-15:52, 15:66, 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, 15:189, 15:197-15:198, 15:200, 15:221, 15:226N, 15:229, 15:238, 15:243, 15:252, 15:263, 15:275, 15:290, 15:292-15:294N, 15:306-15:307, 15:311-15:314, 15:323, 15:329, 15:335, 15:337-15:338, 15:354	
	435 bp		*15:79N	
14	465 bp	1070 bp	*15:09-15:10:04, 15:30, 15:37, 15:45, 15:48, 15:63, 15:83, 15:90, 15:99, 15:150, 15:188, 15:243, 15:248, 15:252, 15:287, 15:312-15:313, 15:323-15:324, 15:329, 15:338, 15:361	
	515 bp		*15:110	
15^{5,7}	105 bp	1070 bp	*15:01:02, 15:09, 15:243, 15:252, 15:277-15:278, 15:361	*07:02:11, 07:05:03, 35:251, 40:01:06, 40:26, 51:06:01, 51:59, 51:64, 51:135, C*02:02:23
16⁵	120 bp	1070 bp	*15:116, 15:124	*40:52, 40:59, 46:06, 46:43, 48:23, 57:59
	190 bp		*15:12, 15:19, 15:270, 15:298, 15:304N	
17	435 bp	1070 bp	*15:13:01-15:13:02, 15:16:01-15:17:03, 15:23-15:24:02, 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	
18	195 bp	1070 bp	*15:14, 15:91, 15:131, 15:161	*18:56, 35:45, 35:71, 44:17, 44:43:01-44:43:02, 44:144, 45:09, 46:17, 53:22, 58:07, C*02:82, C*14:61
19	395 bp	800 bp	*15:16:01-15:17:03, 15:67, 15:74, 15:95, 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	
20	360 bp 505 bp	1070 bp	*15:105 *15:16:01-15:16:03, 15:34, 15:62, 15:67, 15:85-15:86, 15:95, 15:137, 15:194, 15:222, 15:254, 15:303, 15:362	*46:11, 46:18, 46:33, 46:53

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21	205 bp 425 bp	1070 bp	*15:16:01-15:16:03, 15:67, 15:95, 15:222, 15:254, 15:362 *15:43	C*03:158
22	190 bp	800 bp	*15:01:01:01-15:01:04, 15:01:06- 15:01:39, 15:03:01-15:05:02, 15:07:01- 15:11:06, 15:12 ^w , 15:14-15:16:03, 15:18:01-15:18:06, 15:19 ^w , 15:20, 15:23- 15:24:02, 15:26N-15:30, 15:32:01-15:35, 15:37-15:39:02, 15:43, 15:45-15:46, 15:48, 15:51, 15:53-15:54, 15:56-15:58, 15:60-15:68, 15:70-15:76, 15:78:01- 15:82, 15:84-15:85, 15:87, 15:90-15:92, 15:94N-15:99, 15:101-15:105, 15:107- 15:111N, 15:113, 15:115-15:116, 15:118-15:120, 15:122-15:123, 15:125- 15:127, 15:129, 15:131-15:136, 15:140- 15:143, 15:145-15:155, 15:157-15:161, 15:163-15:167, 15:169, 15:171-15:176, 15:178-15:185, 15:187, 15:189-15:195, 15:197-15:198, 15:200-15:203, 15:205- 15:206, 15:209N-15:210, 15:212, 15:215, 15:217, 15:219-15:223, 15:225- 15:229, 15:231-15:232, 15:234-15:237, 15:239, 15:242-15:244, 15:246N-15:249, 15:251, 15:253-15:264, 15:266-15:269, 15:270 ^w , 15:272N, 15:274-15:282, 15:284-15:288, 15:290, 15:292-15:296, 15:298 ^w , 15:299-15:300, 15:303, 15:304N ^w , 15:305-15:307, 15:309- 15:318, 15:320-15:322, 15:324, 15:326- 15:327, 15:329, 15:331-15:338, 15:340, 15:343-15:344, 15:346-15:347, 15:353- 15:355, 15:359, 15:361-15:363	*07:20, 07:24, 07:60, 07:100, 07:131, 07:220, 07:223, 07:235, 08:21, 08:25, 13:03-13:04, 13:48, 13:62, 18:36, 18:56-18:58, 18:101, 35:01:01:01- 35:01:35, 35:01:37-35:03:05, 35:03:07-35:14:02, 35:16-35:30, 35:32:01-35:32:02, 35:34, 35:36- 35:59, 35:61:01-35:64:02, 35:67- 35:72, 35:74-35:85, 35:89-35:92, 35:94-35:95, 35:97-35:130N, 35:132- 35:156, 35:158-35:163, 35:165N- 35:187, 35:189, 35:191-35:212, 35:214, 35:216N-35:229, 35:231- 35:233, 35:235-35:260, 35:263- 35:275, 35:278-35:282, 35:285- 35:296, 38:30, 39:32-39:33, 39:74, 40:05, 40:26, 40:28, 40:63, 40:71, 40:92, 40:174, 41:17, 44:10, 44:14, 44:17, 44:43:01-44:43:02, 44:45, 44:51, 44:62, 44:77, 44:82, 44:107, 44:123, 44:135, 44:184, 44:213, 45:09, 45:14, 46:01:01-46:02, 46:04- 46:05, 46:07N-46:17, 46:19-46:20, 46:22-46:28, 46:31-46:50, 46:52- 46:64, 48:02:01-48:02:03, 48:25, 49:04:01-49:04:02, 51:01:01:01- 51:01:31, 51:01:33-51:01:38, 51:01:40-51:01:49, 51:01:51-51:09:02, 51:11N-51:15, 51:19-51:20, 51:22- 51:24:05, 51:26-51:30, 51:32-51:33, 51:35, 51:37-51:41N, 51:43-51:46, 51:48-51:80, 51:83-51:84, 51:86- 51:92:02, 51:94-51:100, 51:102- 51:142, 51:145-51:152, 51:154- 51:156, 51:158:01-51:171, 51:173Q- 51:190, 52:01:01:01-52:01:10, 52:01:12-52:01:20, 52:01:22-52:01:24, 52:01:27-52:07, 52:09-52:25, 52:27- 52:36, 52:38-52:45, 52:47-52:50, 53:01:01-53:01:06, 53:01:08-53:06, 53:08:01-53:39, 54:03, 54:06, 54:33, 55:08, 55:51, 56:01:01:01-56:09, 56:11, 56:13-56:17, 56:20:01-56:22, 56:24-56:30, 56:33-56:49, 57:01:01- 57:01:02, 57:01:04-57:03:02, 57:06- 57:12, 57:14:01-57:24, 57:27-57:31, 57:33-57:40, 57:42, 57:44-57:79N, 58:01:01:01-58:02, 58:04, 58:06- 58:19, 58:21-58:26, 58:28:01-58:29, 58:31N-58:34, 58:36, 58:38-58:69, 58:72N, 59:04, 78:01:01-78:06, 82:01- 82:03, C*03:81, C*03:175, C*03:199, C*03:245, C*15:15

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23	230 bp	800 bp	*15:19, 15:304N	*46:24
24	205 bp 305 bp	1070 bp	*15:26N *15:33, 15:72, 15:78:01-15:78:03, 15:107, 15:116, 15:141, 15:150, 15:188, 15:209N 15:248, 15:287	*46:06, 46:45
25	315 bp 385 bp	1070 bp	*15:46, 15:53, 15:106, 15:212 *15:28	C*16:85
26	230 bp	1070 bp	*15:32:01-15:32:02, 15:299	C*03:178, C*07:186, C*07:242, C*07:265
27⁵	115 bp	1070 bp	*15:33, 15:248	*49:22, 51:126, 57:54, C*03:87:01- 03:87:02, C*05:27, C*05:39, C*08:115
28	240 bp	1070 bp	*15:35, 15:141, 15:290	
29	255 bp	1070 bp	*15:37-15:38:02, 15:185, 15:323, 15:335	*07:218, 07:220, 08:118, 14:05- 14:06:01, 14:08:02, 14:13, 18:01:01:01-18:01:05, 18:01:07- 18:01:23, 18:03-18:07:02, 18:09, 18:12-18:15, 18:17N, 18:19-18:20, 18:23N-18:26, 18:28-18:34, 18:36- 18:44:01, 18:45-18:51, 18:53-18:55, 18:57, 18:59-18:100, 18:102-18:104, 18:106-18:109, 18:111-18:113, 39:32, 39:43, 39:48, 40:51, 40:113, 40:163, 40:174, 51:06:01, 51:45, 51:62, 51:64, 51:135, 56:31
30⁷	320 bp 355 bp	1070 bp	*15:40, 15:47:01-15:47:02, 15:49, 15:52, 15:114, 15:117, 15:124, 15:138, 15:238, 15:241 *15:75, 15:312	*46:06, 46:25, 46:30
31	320 bp 395 bp	1070 bp	*15:44, 15:50, 15:69, 15:83, 15:86, 15:93, 15:121, 15:186, 15:188, 15:199, 15:218Q, 15:224, 15:252, 15:265, 15:323 *15:114, 15:153	*46:03, 46:18, 46:21:01-46:21:02, 46:29
32	275 bp 350 bp 380 bp	1070 bp	*15:196 *15:190N *15:48, 15:108, 15:136, 15:235, 15:249	*46:19
33	200 bp 255 bp 340 bp	1070 bp	*15:118 *15:18:03, 15:42, 15:73, 15:86, 15:224, 15:303 *15:192, 15:281	*46:11, 46:18
34	160 bp	1070 bp	*15:51, 15:179:01-15:179:02, 15:199, 15:218Q	*08:28, 08:35, 08:37, 08:89, 08:107, 18:56, 18:113, 35:115, 35:260, 37:35, 37:56, 41:24, 41:30, 42:09, 44:17, 45:09, 51:97, 53:22, 57:24, C*07:68, C*07:140, C*07:151, C*07:302
35	165 bp	1070 bp	*15:30, 15:58, 15:73, 15:150, 15:303, 15:324	*08:70, 13:31, 13:41, 35:44, 39:36, 46:61, 48:19, 51:61:01-51:61:02, 52:21, 54:33, 55:21, 56:43, C*02:68
36⁷	360 bp 435 bp	800 bp	*15:82, 15:260 *15:36, 15:89, 15:115, 15:256, 15:339	C*03:186:01 C*16:85

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37	170 bp	1070 bp	*15:47:01-15:47:02, 15:49, 15:65, 15:84, 15:99, 15:221, 15:237	*07:02:01-07:02:17, 07:02:19-07:02:25, 07:02:27-07:02:45, 07:02:47-07:03, 07:05:01-07:13, 07:15-07:16, 07:18:01-07:18:02, 07:20-07:24, 07:27, 07:29-07:33:03, 07:35-07:42, 07:44, 07:45 ^w , 07:46-07:47, 07:49N-07:51, 07:52 ^w , 07:53-07:54, 07:56:01-07:65, 07:67N-07:79, 07:81-07:95, 07:97-07:99, 07:101-07:114, 07:116-07:130, 07:132-07:145, 07:148-07:163, 07:165-07:171, 07:173-07:177, 07:179-07:196, 07:198-07:208, 07:210-07:222, 07:224, 07:227-07:234, 07:236-07:249, 07:251N-07:256, 08:20, 08:40, 08:79, 13:18, 13:73, 18:13, 18:21, 18:30, 35:08:01-35:08:08, 35:18, 35:45, 35:61:01-35:61:02, 35:66, 35:80, 35:99-35:100, 35:105, 35:142, 35:156, 35:158, 35:172, 35:174, 35:176, 35:187, 35:192, 35:206, 35:225, 35:229, 35:232, 35:262, 37:07, 39:08 ^w , 39:11 ^w , 39:33, 40:15-40:16, 40:23, 40:32, 40:98, 40:128, 40:161, 40:198, 46:03, 46:62, 48:05, 48:08, 51:05, 51:29, 51:54, 51:82, 52:24, 53:11, 53:16, 53:24, 54:10, 54:20, 55:09, 55:37, 55:52, 57:02:01-57:02:02, 57:12-57:13, 57:19, 57:28N, 57:30, 57:42, 57:63, 58:22, C*01:90, C*01:101-01:102, C*04:108, C*15:08
38	225 bp	1070 bp	*15:61, 15:70, 15:76, 15:101, 15:180 ^w , 15:189, 15:236, 15:255	*07:29 ^w , 07:65, 07:72, 07:86, 08:01:01 ^w -08:01:31 ^w , 08:04 ^w -08:05 ^w , 08:07 ^w -08:22 ^w , 08:24 ^w -08:25 ^w , 08:26:01, 08:26:02 ^w -08:49 ^w , 08:50, 08:51 ^w -08:53:02 ^w , 08:55 ^w -08:65 ^w , 08:67N ^w -08:71 ^w , 08:73 ^w -08:93 ^w , 08:95 ^w -08:109 ^w , 08:111 ^w -08:116 ^w , 08:118 ^w -08:125 ^w , 08:127 ^w -08:130 ^w , 08:132 ^w , 08:134 ^w -08:138 ^w , 08:140 ^w -08:150 ^w , 14:11, 14:28 ^w , 27:106 ^w , 35:29:01-35:29:02, 35:69, 35:76, 35:136, 35:186 ^w , 35:198, 35:229, 35:254, 35:294, 39:04, 39:63, 40:43 ^w , 40:166 ^w , 41:27 ^w , 44:90, 45:06 ^w , 46:01:01 ^w , 46:01:03 ^w -46:01:20 ^w , 46:03 ^w -46:04 ^w , 46:06 ^w -46:34 ^w , 46:36 ^w -46:49 ^w , 46:51Q ^w -46:64 ^w , 51:20 ^w , 53:23 ^w , 54:01:01-54:01:03, 54:01:05-54:01:07, 54:03-54:11, 54:12 ^w , 54:13-54:22, 54:24-54:29, 54:31-54:34, 55:01:01-55:01:07, 55:01:09-55:02:09, 55:03 ^w , 55:04-55:05, 55:07-55:09, 55:11, 55:12 ^w , 55:13-55:15, 55:16 ^w , 55:17, 55:19-55:24, 55:25 ^w , 55:26-

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				55:30, 55:32-55:48, 55:49 ^w , 55:50-55:68, 55:69 ^w , 55:70-55:71, 55:73-55:75, 56:01:01:01-56:06, 56:08-56:20:02, 56:21 ^w , 56:22, 56:24-56:34, 56:36-56:40, 56:41 ^w , 56:43, 56:45-56:49, 78:01:01-78:01:02, 78:03, 78:07-78:08, 83:01, C*07:441^w , C*16:86^w
39	315 bp 385 bp	800 bp	*15:60, 15:119 *15:95, 15:285	C*07:213
40⁶	220 bp 425 bp	1070 bp	*15:71, 15:175 *15:13:01-15:13:02, 15:16:01-15:17:03, 15:23-15:24:02, 15:67, 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	C*06:77
41	465 bp	1070 bp	*15:01:01:01-15:01:04, 15:01:06-15:08:02, 15:11:01-15:16:03, 15:18:01-15:19, 15:21, 15:23-15:29, 15:31-15:36, 15:38:01-15:40, 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, 15:78:01-15:82, 15:84-15:85, 15:87-15:89, 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, 15:197-15:207, 15:209N-15:215, 15:217-15:223, 15:225-15:227, 15:228 [?] , 15:231-15:232, 15:234-15:242, 15:244-15:247, 15:249-15:251, 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, 15:343-15:347, 15:353-15:355, 15:357-15:360, 15:362-15:363	*35:43:01, 35:185, 46:01:01-46:10, 46:12-46:17, 46:19-46:60, 46:62-46:64, 56:03
42	345 bp	1070 bp	*15:02:01-15:03:05, 15:05:01-15:06, 15:09-15:10:04, 15:13:01-15:13:02, 15:16:01-15:18:06, 15:21, 15:23, 15:25:01-15:25:03, 15:29, 15:31, 15:36-15:37, 15:39:01-15:40, 15:44, 15:48, 15:52, 15:55, 15:61-15:62, 15:64:01-15:64:02, 15:67, 15:69, 15:72, 15:74, 15:80, 15:86, 15:88 ^w , 15:89-15:91, 15:93, 15:95, 15:98, 15:103, 15:106-15:108, 15:112, 15:114-15:115, 15:119, 15:121, 15:123-15:124, 15:127, 15:131-15:134, 15:136, 15:138-15:139, 15:151, 15:153, 15:155-15:156, 15:158, 15:161-15:162, 15:170, 15:173, 15:176 ^w , 15:177, 15:185-15:186, 15:188, 15:194-15:198, 15:200 ^w , 15:204, 15:208, 15:210, 15:213-15:214, 15:216, 15:219-15:220, 15:222-15:224, 15:226N, 15:229-15:230,	*46:06, 46:08, 46:11, 46:13:01-46:13:03, 46:18-46:19, 46:21:01-46:21:02, 46:25-46:26, 46:33, 46:43

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	460 bp		*15:73, 15:86, 15:224, 15:303	*46:11, 46:18
43	525 bp	1070 bp	*15:04:01-15:04:02, 15:16:01-15:16:03, 15:67, 15:83, 15:95, 15:137, 15:155, 15:222, 15:254, 15:293, 15:303, 15:310, 15:362	*46:11, 46:18, 46:32
44	515 bp	1070 bp	*15:01:01:01-15:01:04, 15:01:06-15:01:13, 15:01:15-15:01:39, 15:03:01-15:03:05, 15:05:01-15:05:02, 15:07:01-15:11:02, 15:11:04-15:12, 15:14-15:15, 15:17:01:01-15:18:01, 15:18:03-15:19, 15:23-15:24:02, 15:26N ^w , 15:28-15:31, 15:33-15:35, 15:37-15:40, 15:43, 15:45-15:58, 15:60-15:61, 15:63-15:66, 15:68-15:76, 15:78:01-15:79N, 15:81-15:82, 15:87, 15:90-15:94N, 15:96-15:99, 15:101-15:105, 15:107-15:108, 15:111N, 15:113-15:120, 15:122-15:128, 15:131-15:136, 15:138, 15:140-15:143, 15:145-15:153, 15:156-15:169, 15:171-15:183, 15:185-15:193, 15:196-15:203, 15:205-15:212, 15:215-15:221, 15:224-15:227, 15:228 [?] , 15:229-15:239, 15:241-15:249, 15:251-15:253, 15:255-15:264, 15:266-15:270, 15:272N-15:282, 15:284-15:288, 15:290, 15:292, 15:294N-15:296, 15:298, 15:300, 15:304N-15:307, 15:309, 15:311-15:318, 15:320-15:324, 15:326, 15:329, 15:331-15:340, 15:343, 15:346-15:347, 15:353-15:356, 15:359-15:361, 15:363	*35:43:01, 35:185, 46:01:01-46:01:18, 46:01:20-46:10, 46:12-46:17, 46:19-46:31, 46:34-46:64, 56:03
45	475 bp	1070 bp	*15:01:01:01-15:01:04, 15:01:06-15:01:39, 15:03:01-15:05:02, 15:07:01-15:12, 15:14-15:16:03, 15:18:01-15:19, 15:23-15:24:02, 15:26N-15:30, 15:32:01-15:35, 15:37-15:40, 15:43, 15:45-15:54, 15:56-15:58, 15:60-15:76, 15:78:01-15:87, 15:90-15:99, 15:101-15:105, 15:107-15:111N, 15:113-15:120, 15:122-15:127, 15:129, 15:131-15:136, 15:138, 15:140-15:143, 15:145-15:155, 15:157-15:161, 15:163-15:167, 15:169, 15:171-15:176, 15:178-15:195, 15:197-15:203, 15:205-15:206, 15:209N-15:210, 15:212, 15:215, 15:217-15:227, 15:228 [?] , 15:229, 15:231-15:232, 15:234-15:239, 15:241-15:249, 15:251-15:264, 15:266-15:270,	*35:43:01, 35:185, 46:01:01-46:64, 56:03

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			15:272N, 15:274-15:282, 15:284-15:288, 15:290, 15:292-15:296, 15:298-15:300, 15:303-15:307, 15:309-15:318, 15:320-15:324, 15:326-15:327, 15:329, 15:331-15:338, 15:340, 15:343-15:344, 15:346-15:347, 15:353-15:355, 15:359, 15:361-15:363	
46	355 bp	800 bp	*15:01:01:01-15:01:04, 15:01:06-15:04:02, 15:06-15:19, 15:21, 15:23-15:30, 15:32:01-15:40, 15:43-15:47:02, 15:49-15:50, 15:53-15:54, 15:56-15:58, 15:60-15:74, 15:76-15:82, 15:85, 15:87, 15:89-15:90, 15:92-15:99, 15:101-15:104, 15:106, 15:108-15:110, 15:112-15:113, 15:115-15:122, 15:125-15:129, 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, 15:225-15:227, 15:228 [?] , 15:229-15:234, 15:236, 15:238-15:249, 15:251-15:274, 15:276-15:282, 15:284-15:311, 15:313-15:331, 15:333-15:347, 15:353-15:363	*35:43:01, 35:185, 46:01:01-46:05, 46:07N-46:08, 46:10, 46:12, 46:14-46:17, 46:20, 46:22-46:24, 46:26-46:32, 46:34-46:42, 46:44-46:64, 56:03
47	320 bp	1070 bp	*15:01:01:01-15:01:04, 15:01:06-15:01:30, 15:01:32-15:19, 15:21, 15:23-15:39:02, 15:43, 15:45-15:46, 15:48, 15:51, 15:53-15:58, 15:60-15:68, 15:70-15:82, 15:84-15:85, 15:87-15:92, 15:94N-15:99, 15:101-15:113, 15:115-15:116, 15:118-15:120, 15:122-15:123, 15:125-15:129, 15:131-15:137, 15:139-15:185, 15:187, 15:189-15:198, 15:200-15:217, 15:219-15:223, 15:225-15:227, 15:228 [?] , 15:229-15:237, 15:239-15:240, 15:242-15:251, 15:253-15:264, 15:266-15:322, 15:324-15:340, 15:342-15:347, 15:353-15:363	*35:43:01, 35:185, 46:01:01-46:02, 46:04-46:05, 46:07N-46:17, 46:19-46:20, 46:22-46:28, 46:31-46:64, 56:03
48	420 bp	1070 bp	*15:01:01:01-15:01:04, 15:01:06-15:01:16, 15:01:17 ^w , 15:01:18-15:19, 15:21, 15:23-15:32:02, 15:34-15:40, 15:43-15:58, 15:60-15:71, 15:73-15:77, 15:79N-15:99, 15:101-15:106, 15:108-15:115, 15:117-15:129, 15:131-15:140, 15:142-15:149N, 15:151-15:187, 15:189-15:227, 15:228 [?] , 15:229-15:247, 15:249-15:286, 15:288-15:294N, 15:296-15:347, 15:353-15:363	*35:43:01, 35:185, 46:01:01-46:05, 46:07N-46:44, 46:46-46:53, 46:55N-46:57, 46:59-46:64, 56:03
49	135 bp	1070 bp	*15:57, 15:135	*13:39, 13:67
50 ⁵	85 bp 185 bp	1070 bp	*15:67, 15:343 *15:206	*35:110, A*68:56
51	135 bp 175 bp 200 bp	1070 bp	*15:98, 15:109, 15:163 *15:277-15:278 *15:246N	*35:122, 56:29

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52	200 bp 345 bp	800 bp	*15:104, 15:307, 15:321Q *15:92, 15:213	*51:142
53	210 bp	800 bp	*15:96	C*03:175, C*03:199, C*03:245
54	250 bp 410 bp	800 bp	*15:187 *15:97	C*12:36
55	175 bp	1070 bp	*15:214	*07:120, 18:81, 35:250, 40:150, 51:165, 57:29
	210 bp 255 bp		*15:321Q *15:102, 15:284	*51:30, 73:01-73:02
56⁵	70 bp 260 bp	1070 bp	*15:103 *15:227	*27:69, 37:23, 40:213
57	345 bp	1070 bp	*15:111N, 15:300	
58	170 bp	1070 bp	*15:113, 15:319	*52:17
59⁶	230 bp 375 bp 420 bp	800 bp	*15:191, 15:234 *15:198 *15:94N, 15:294N	C*06:33 *35:161
60	160 bp	800 bp	*15:20, 15:228, 15:271, 15:305	*35:01:01:01-35:01:27, 35:01:29- 35:30, 35:32:01-35:42:02, 35:44- 35:56, 35:58-35:59, 35:61:01-35:72, 35:74-35:78, 35:80-35:86, 35:88- 35:184, 35:186-35:278, 35:280- 35:282, 35:285-35:296, 48:02:01- 48:02:03, 51:01:01:01-51:24:05, 51:26-51:41N, 51:43-51:46, 51:48- 51:156, 51:158:01-51:163, 51:165- 51:190, 52:01:01:01-52:01:24, 52:01:27-52:06:03, 52:08-52:45, 52:47-52:50, 53:01:01-53:39, 56:05:01-56:05:02, 56:21, 56:36, 58:01:01:01-58:02, 58:04-58:10N, 58:12-58:19, 58:21-58:29, 58:31N- 58:69, 58:72N, 67:05, 78:01:01-78:08, 81:03, 83:01 ⁷
61	160 bp 205 bp	1070 bp	*15:175 *15:125	*44:22, 44:105, 49:24
62⁵	105 bp	1070 bp	*15:126	*07:175
63	175 bp	1070 bp	*15:127	
64⁵	90 bp 240 bp 365 bp	800 bp	*15:302N *15:301 *15:122	C*03:48, C*06:85
65	470 bp 520 bp	1070 bp	*15:232 *15:129, 15:342	*46:64
66¹⁰	435 bp	1070 bp	*15:02:01-15:02:09, 15:13:01-15:13:02, 15:20-15:21, 15:25:01-15:25:03, 15:36, 15:44, 15:77, 15:85, 15:88-15:89, 15:112, 15:118, 15:121, 15:139, 15:144, 15:154, 15:194, 15:204, 15:213-15:214, 15:223, 15:240, 15:250, 15:265, 15:271, 15:283, 15:289, 15:291, 15:297, 15:301- 15:302N, 15:319, 15:325, 15:328, 15:330, 15:341, 15:345, 15:357-15:358	*13:01:01-13:01:10, 13:06-13:07N, 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, 13:77-13:78, 13:80, 13:83, 35:46, 35:207, 40:137, 44:08, 44:57, 44:60, 46:33, 57:01:01-57:10, 57:12-57:15, 57:17-57:33, 57:34 ^w , 57:35-57:44,

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67	265 bp 300 bp	800 bp	*15:53, 15:183, 15:212, 15:336, 15:345 *15:132	*46:10, C*16:85
68⁷	215 bp 380 bp	1070 bp	*15:134 *15:247	C*05:03
69	130 bp	1070 bp	*15:57	
70⁵	90 bp 185 bp	1070 bp	*15:208 *15:138, 15:230, 15:241, 15:297	*07:68:01-07:68:03, 07:214, 07:237, 18:35, 18:110, 35:66, 40:77, 40:87:01- 40:87:02, 40:121, 40:158, 40:222, 40:237, 44:150, 48:12, 48:14, 48:26, 48:29
71	290 bp 315 bp 400 bp	1070 bp	*15:53, 15:212, 15:336, 15:347 *15:205 *15:139	C*16:85
72⁵	110 bp 295 bp 390 bp	1070 bp	*15:226N *15:140 *15:201	*35:216N, 39:87N *51:166
73	155 bp	1070 bp	*15:09, 15:30 ^w , 15:42, 15:58 ^w , 15:73 ^w , 15:150 ^w , 15:229, 15:243, 15:252, 15:303 ^w , 15:324 ^w , 15:329, 15:361	*07:05:01-07:06, 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, 07:210, 07:213-07:214, 07:222, 07:249, 08:20, 08:79, 13:16, 13:20, 13:31 ^w , 13:48, 13:62, 14:13, 27:20, 27:24, 35:44 ^w , 38:10, 38:32, 39:35, 39:36 ^w , 40:05, 40:15-40:16, 40:23, 40:26, 40:28, 40:51, 40:95, 40:148, 40:158, 40:161, 40:174, 40:183, 40:198, 40:309, 42:19, 46:61 ^w , 48:05, 48:15, 51:01:01:01-51:01:18, 51:01:19 ^w , 51:01:20-51:01:30, 51:01:32-51:01:49, 51:01:51-51:02:02, 51:02:04-51:04, 51:06:01-51:07:02, 51:11N-51:14, 51:16, 51:21-51:24:05, 51:26-51:30, 51:32-51:35, 51:38- 51:39, 51:41N, 51:43, 51:46, 51:48- 51:53, 51:55-51:60, 51:61:01 ^w - 51:61:02 ^w , 51:62-51:71, 51:74-51:80, 51:82-51:84, 51:86, 51:88-51:89, 51:95-51:96, 51:98N-51:107, 51:109- 51:114, 51:116-51:121, 51:123- 51:134, 51:136-51:138, 51:140, 51:142-51:145, 51:147, 51:149N- 51:152, 51:154-51:156, 51:158:01- 51:171, 51:173Q-51:180, 51:182- 51:190, 52:01:01:01-52:01:10, 52:01:12-52:01:24, 52:01:27-52:02:02, 52:04-52:09, 52:11, 52:13-52:18, 52:20, 52:21 ^w , 52:22-52:25, 52:27- 52:43, 52:44 ^w , 52:45, 52:47-52:50, 54:20, 54:33 ^w , 55:01:01-55:01:14,

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				55:03, 55:05, 55:09, 55:11, 55:15, 55:17, 55:21 ^w , 55:24-55:25, 55:28-55:29, 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, 55:73-55:75, 56:05:01-56:06, 56:21, 56:25, 56:37, 57:57, 57:63, 58:08:01- 58:08:02, 78:01:01-78:03, 78:05- 78:07, C*01:90, C*02:68^w, C*15:24
74⁵	75 bp 230 bp	800 bp	*15:145, 15:176 *15:262N	*35:237, 52:28
75	280 bp 390 bp	1070 bp	*15:146 *15:201	
76	475 bp	1070 bp	*15:02:01-15:02:09, 15:06, 15:13:01- 15:13:02, 15:17:01:01-15:17:03, 15:21, 15:25:01-15:25:03, 15:31, 15:36, 15:44, 15:55, 15:77, 15:88-15:89, 15:106, 15:112, 15:121, 15:128, 15:137, 15:139, 15:144, 15:156, 15:162, 15:168, 15:170, 15:177, 15:196, 15:204, 15:208, 15:213- 15:214, 15:216, 15:230, 15:233, 15:240, 15:250, 15:265, 15:271, 15:273, 15:283, 15:289, 15:291, 15:297, 15:301- 15:302N, 15:308, 15:319, 15:325, 15:328, 15:330, 15:339, 15:341-15:342, 15:345, 15:356-15:358, 15:360	
77¹⁰	185 bp 230 bp	1070 bp	*15:174 *15:123, 15:220	
78⁵	110 bp	1070 bp	*15:142	*07:29, 07:186, 08:01:11, 08:56:01, 08:133, 35:218, 35:256, 51:68, 51:176, 57:49, C*07:02:30
	385 bp 470 bp		*15:147 *15:232	*46:42 *46:64
79	135 bp 215 bp 420 bp	800 bp	*15:270 *15:182N *15:148, 15:330	
80^{5,6}	85 bp 225 bp 340 bp	1070 bp	*15:149N *15:263 *15:320	
81⁷	395 bp	1070 bp	*15:11:01-15:11:06, 15:143, 15:148- 15:149N, 15:152, 15:209N, 15:215, 15:284, 15:303, 15:305	
82^{5,6}	80 bp 200 bp 245 bp	1070 bp	*15:81 *15:246N *15:277	*53:35, 58:47 *35:222, 40:76, C*05:30, C*06:125
83⁷	210 bp	1070 bp		
84⁶	155 bp 195 bp 235 bp	1070 bp	*15:167 *15:211 *15:197, 15:215	C*03:168 *35:117
85⁶	340 bp 395 bp 420 bp	1070 bp	*15:157 *15:76, 15:101, 15:255 *15:164	C*07:335, C*14:62

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86	230 bp 260 bp 400 bp	1070 bp	*15:166 *15:272N *15:193	
87⁵	85 bp	1070 bp	*15:71, 15:175, 15:204, 15:225, 15:344	*18:29, 18:98, 35:50, 35:231, 35:280, 37:22, 40:248, 40:282, 41:12, 41:36, 46:14, 49:03, 51:151, 54:02, 55:16, 56:35, 57:39, 57:73, 58:41, C*03:278, C*16:86
	295 bp		*15:169	
88	240 bp 450 bp	800 bp	*15:171 *15:158, 15:240	C*14:67 C*05:80
89	370 bp 420 bp	1070 bp	*15:160, 15:282 *15:94N, 15:294N	C*03:84, C*07:275
90⁵	95 bp	1070 bp	*15:202, 15:239	*13:58, 18:12, 35:10, 35:13, 35:16, 35:28, 35:69, 35:80, 35:226, 35:270, 37:01:01-37:01:05, 37:01:07-37:05, 37:07, 37:09-37:27, 37:29-37:56, 40:185, 40:209, 40:308, 44:83, 44:134, 49:03, 52:01:01:01-52:01:24, 52:01:27-52:01:28, 52:03-52:15, 52:17, 52:19-52:31:02, 52:33-52:45, 52:47-52:50, 53:17:01-53:17:02, 53:28, 53:38, 78:05-78:06 *18:63, 39:90, 50:11
	195 bp		*15:173	
91⁸	135 bp 325 bp	1070 bp	*15:184, 15:203 *15:170, 15:356	*18:109
92⁵	95 bp 155 bp	1070 bp	*15:266, 15:332 *15:172, 15:328	*13:37, 38:49, 51:75
93	255 bp 295 bp 385 bp	1070 bp	*15:258N, 15:304N *15:53, 15:177, 15:212, 15:336, 15:347 *15:120	C*16:85
94	260 bp 285 bp 325 bp	1070 bp	*15:272N *15:123 *15:178	
95⁷	160 bp 340 bp 395 bp	1070 bp	*15:358 *15:181N *15:40, 15:47:01-15:47:02, 15:49, 15:52, 15:114, 15:117, 15:124, 15:138, 15:238, 15:241	*46:06, 46:25, 46:30
96⁹	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*15 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

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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.

⁴Due to the sharing of sequence motifs between HLA-B alleles, non-HLA-B*15 alleles will be amplified by primer mixes 1 to 3, 6 to 9, 11, 15, 16, 18, 20, 22 to 24, 27, 29 to 35, 37, 38, 41 to 52, 55, 56, 58 to 62, 65 to 67, 70, 72 to 74, 78, 82 to 84, 87, 90 to 92 and 95. In addition, a few HLA-A and HLA-C alleles will be amplified by primer mixes 1 to 3, 5, 7, 12, 15, 18, 21, 22, 25 to 27, 34 to 40, 50, 52 to 54, 59, 64, 67, 68, 71, 73, 78, 82, 84, 85, 87 to 89 and 93.

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

⁶Primer mixes 40, 59, 80, 82, 84 and 85 have a tendency to giving rise to primer oligomer formation.

⁷Primer mixes 5, 15, 30, 36, 68, 81, 83 and 95 may have tendencies of unspecific amplifications.

⁸Primer mix 91 may give rise to a long unspecific amplification product of approximately 800 bp. This should be disregarded when interpreting the B*15 typings.

⁹Primer mix 96 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.

¹⁰Primer mixes 66 and 77 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B*15 resolution primer mixes.

‘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	395	290	120	180	385	525	330	105	365	300	140	400
				390						515		
Length of int. pos. control ¹	800	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070
5'-primer(s) ²	45 5'-ggA 3'	45 5'-ggA 3'	463 5'-TgA 3'	45 5'-ggA 3'	45 5'-ggA 3'	355 5'-TCA 3'	45 5'-ggA 3'	357 5'-Tgg 3'	2 nd I 5'-CAA 3'	360 5'-CAC 3'	363 5'-AgC 3'	45 5'-ggA 3'
										368 5'-gTT 3'		
										583 5'-gAC 3'		
3'-primer(s) ³	272 5'-Tgg 3'	165 5'-Tgg 3'	538 5'-CCA 3'	2 nd I 5'-gAC 3'	259 5'-gTT 3'	3 rd I 5'-ATC 3'	206 5'-CCT 3'	419 5'-Cgg 3'	527 5'-CCA 3'	3 rd I 5'-ATC 3'	463 5'-gCT 3'	272 5'-TgA 3'
			545 5'-AgA 3'	267 5'-ATg 3'				419 5'-CgA 3'	527 5'-CCA 3'			287 5'-TCC 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	395	465	105	120	435	195	395	360	205	190	230	205
	435	515		190				505	425			305
Length of int. pos. control ¹	800	1070	1070	1070	1070	1070	800	1070	1070	800	800	1070
5'-primer(s) ²	45 5'-ggA 3'	368 5'-gTg 3'	369 5'-TAC 3'	419 5'-gTC 3'	45 5'-ggA 3'	419 5'-gTC 3'	45 5'-ggA 3'	379 5'-ACC 3'	45 5'-ggA 3'	409 5'-ggC 3'	821 5'-gCT 3'	2 nd I 5'-CAA 3'
		419 5'-gTA 3'						523 5'-CCT 3'				
3'-primer(s) ³	272 5'-TgC 3'	3 rd I 5'-ATC 3'	435 5'-TCT 3'	499 5'-ggA 3'	309 5'-ATC 3'	572 5'-gCg 3'	266 5'-TCC 3'	3 rd I 5'-ATC 3'	83 5'-TgA 3'	559 5'-CAg 3'	916 5'-gAT 3'	369 5'-CCT 3'
	311 5'-ggT 3'			570 5'-CCg 3'			278 5'-TgA 3'		301 5'-gTC 3'			463 5'-gCg 3'
												471 5'-gTT 3'
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec. PCR product	315	230	115	240	255	320	320	275	200	160	165	360
	385					355	395	350	255			435
								380	340			
Length of int. pos. control ¹	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	1070	800
5'-primer(s) ²	45 5'-ggA 3'	368 5'-gTC 3'	485 5'-CAA 3'	362 5'-gAC 3'	369 5'-TAC 3'	526 5'-gTC 3'	488 5'-ggg 3'	2 nd I 5'-CAA 3'	2 nd I 5'-CAA 3'	419 5'-gTC 3'	412 5'-ATA 3'	45 5'-ggA 3'
						560 5'-CgA 3'	560 5'-CAC 3'					
3'-primer(s) ³	193 5'-CgT 3'	558 5'-Agg 3'	559 5'-CAg 3'	559 5'-CAg 3'	583 5'-gTg 3'	3 rd I 5'-ATC 3'	3 rd I 5'-ATC 3'	437 5'-AAA 3'	362 5'-TCA 3'	538 5'-gTC 3'	538 5'-CCA 3'	238 5'-CCT 3'
	263 5'-gTA 3'							513 5'-TCT 3'	420 5'-gCT 3'			309 5'-gTg 3'
								544 5'-ggT 3'	505 5'-gCT 3'			
Well No.	25	26	27	28	29	30	31	32	33	34	35	36

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Well No.	37	38	39	40	41	42	43	44	45	46	47	48
Length of spec. PCR product	170	225	315	220	465	345	525	515	475	355	320	420
			385	425		460						
Length of int. pos. control ¹	1070	1070	800	1070	1070	1070	1070	1070	1070	800	1070	1070
5'-primer(s) ²	409 5'-ggC 3'	106 5'-CCA 3'	45 5'-ggA 3'	45 5'-ggA 3'	419 5'-gTC 3'	420 5'-TTA 3'	357 5'-Tgg 3'	369 5'-TAC 3'	409 5'-ggC 3'	527 5'-TgA 3'	560 5'-CCT 3'	463 5'-TgA 3'
						539 5'-gCT 3'						
3'-primer(s) ³	538 5'-CCg 3'	292 5'-gTC 3'	181 5'-gTT 3'	97 5'-gTg 3'	3 rd 5'-ATC 3'	3 rd 5'-ATC 3'	3 rd 5'-ATC 3'	3 rd 5'-ATC 3'	3 rd 5'-ATC 3'	3 rd 5'-ATC 3'	3 rd 5'-ATC 3'	3 rd 5'-ATC 3'
			203 5'-CTg 3'	302 5'-ggT 3'								
			257 5'-CCT 3'									
			267 5'-ATg 3'									
Well No.	37	38	39	40	41	42	43	44	45	46	47	48

Well No.	49	50	51	52	53	54	55	56	57	58	59	60
Length of spec. PCR product	135	85	135	200	210	250	175	70	345	170	230	160
		185	175	325		410	210	260			375	
			200				255				420	
Length of int. pos. control ¹	1070	1070	1070	800	800	800	1070	1070	1070	1070	800	800
5'-primer(s) ²	209 5'-ggC 3'	463 5'-TgA 3'	106 5'-CCA 3'	45 5'-ggA 3'	419 5'-gTC 3'	45 5'-ggA 3'	3 rd 5'-Agg 3'	25 5'-CCg 3'	539 5'-gTg 3'	133 5'-CCA 3'	45 5'-ggA 3'	652 5'-CCg 3'
				3 rd 5'-Agg 3'				652 5'-CCA 3'	540 5'-TgC 3'	145 5'-CAA 3'	673 5'-CCA 3'	661 5'-ACg 3'
3'-primer(s) ³	302 5'-ggT 3'	506 5'-TgT 3'	200 5'-TCA 3'	200 5'-TCA 3'	589 5'-CTT 3'	127 5'-CTg 3'	704 5'-CCA 3'	56 5'-TCg 3'	3 rd 5'-ATC 3'	272 5'-Tgg 3'	107 5'-ACT 3'	774 5'-ggT 3'
		608 5'-gCC 3'	200 5'-TCA 3'	723 5'-Tgg 3'		288 5'-gTg 3'	735 5'-TCg 3'	872 5'-TCA 3'			295 5'-TCA 3'	
			239 5'-gCT 3'	727 5'-CCA 3'			779 5'-CTA 3'				916 5'-gAT 3'	
			263 5'-..g 3'	735 5'-TCg 3'			787 5'-TCC 3'					
Well No.	49	50	51	52	53	54	55	56	57	58	59	60

Well No.	61	62	63	64	65	66	67	68	69	70	71	72
Length of spec. PCR product	160	105	175	90	470	435	265	215	130	90	290	110
	205			240	520		300	380		185	315	295
				365							400	390
Length of int. pos. control ¹	1070	1070	1070	800	1070	1070	800	1070	1070	1070	1070	1070
5'-primer(s) ²	106 5'-CCg 3'	363 5'-AgC 3'	419 5'-gTC 3'	45 5'-ggA 3'	363 5'-AAT 3'	209 5'-ggC 3'	45 5'-ggA 3'	419 5'-gTC 3'	209 5'-ggC 3'	463 5'-TgA 3'	45 5'-ggA 3'	261 5'-AAC 3'
	151 5'-gCC 3'			724 5'-g.C 3'	410 5'-gCg 3'	209 5'-ggC 3'		668 5'-ggT 3'				662 5'-CCT 3'
												754 5'-ACg 3'
3'-primer(s) ³	272 5'-Tgg 3'	425 5'-CgC 3'	554 5'-CCg 3'	115 5'-ggA 3'	3 rd 5'-ATC 3'	353 5'-TgA 3'	142 5'-ggT 3'	593 5'-CgC 3'	299 5'-TCA 3'	510 5'-CAA 3'	167 5'-ACA 3'	331 5'-CTA 3'
				242 5'-CCA 3'		362 5'-TCA 3'	177 5'-AAA 3'	916 5'-gAT 3'		605 5'-gCT 3'	189 5'-gCT 3'	916 5'-gAT 3'
				774 5'-ggT 3'							277 5'-ggC 3'	
Well No.	61	62	63	64	65	66	67	68	69	70	71	72

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Well No.	73	74	75	76	77	78	79	80	81	82	83	84
Length of spec.	155	75	280	475	185	110	135	85	395	80	210	155
PCR product		230	390		230	385	215	225		200		195
						470	420	340		245		235
Length of int.	1070	800	1070	1070	1070	1070	800	1070	1070	1070	1070	1070
pos. control ¹												
5'-primer(s) ²	412	368	662	409	47	97	45	267	45	106	322	363
	5'-ATA 3'	5'-gTA 3'	5'-CCT 3'	5'-ggT 3'	5'-AgT 3'	5'-TCg 3'	5'-ggA 3'	5'-Ag 3'	5'-ggA 3'	5'-CCA 3'	5'-gCC 3'	5'-AgT 3'
		523	769		463	410	679	709				404
		5'-CCg 3'	5'-Agg 3'		5'-TgA 3'	5'-gCg 3'	5'-ggC 3'	5'-AgT 3'				5'-CCT 3'
						495		824				446
						5'-CAC 3'		5'-TTg 3'				5'-CgT 3'
3'-primer(s) ³	527	559	916	3 rd I	106	165	93	311	272	146	2 nd I	559
	5'-CCT 3'	5'-CAg 3'	5'-gAT 3'	5'-ATC 3'	5'-CAT 3'	5'-Tgg 3'	5'-AAC 3'	5'-ggT 3'	5'-TgT 3'	5'-CCg 3'	5'-TCg 3'	5'-CAg 3'
					605	3 rd I	296	916		263		
					5'-gCA 3'	5'-ATC 3'	5'-CTT 3'	5'-gAT 3'		5'-..g 3'		
							774			312		
							5'-ggT 3'			5'-AgT 3'		
Well No.	73	74	75	76	77	78	79	80	81	82	83	84

Well No.	85	86	87	88	89	90	91	92	93	94	95
Length of spec.	340	230	85	240	370	95	135	95	255	260	160
PCR product	395	260	295	450	420	195	325	155	295	285	340
	420	400							385	325	395
Length of int.	1070	1070	1070	800	1070	1070	1070	1070	1070	1070	1070
pos. control ¹											
5'-primer(s) ²	45	2 nd I	97	45	45	206	45	463	45	2 nd I	2 nd I
	5'-ggA 3'	5'-CAA 3'	5'-TCC 3'	5'-ggA 3'	5'-ggA 3'	5'-gAC 3'	5'-ggA 3'	5'-TgA 3'	5'-ggA 3'	5'-CAA 3'	5'-CAA 3'
			2 nd I			463	365		369	767	2 nd I
			5'-CAA 3'			5'-TgA 3'	5'-gAC 3'		5'-TAC 3'	5'-ggg 3'	5'-Agg 3'
							376				
							5'-gCA 3'				
3'-primer(s) ³	218	394	142	118	242	259	203	514	135	426	502
	5'-gCA 3'	5'-gCT 3'	5'-TgC 3'	5'-gCT 3'	5'-CCT 3'	5'-CTC 3'	5'-TCT 3'	5'-CTg 3'	5'-Ag 3'	5'-TCC 3'	5'-CTA 3'
	272	426	457	323	247	616	463	515	167	487	559
	5'-TgT 3'	5'-TCC 3'	5'-gTA 3'	5'-AgA 3'	5'-ATg 3'	5'-CgT 3'	5'-gCT 3'	5'-CCC 3'	5'-ACA 3'	5'-CgT 3'	5'-CTC 3'
	296	565		337	295			578	173	916	685
	5'-CTg 3'	5'-CAT 3'		5'-CTT 3'	5'-TCA 3'			5'-TgT 3'	5'-TCC 3'	5'-gAT 3'	5'-ggT 3'
									261		
									5'-gTA 3'		
									585		
									5'-AgT 3'		
Well No.	85	86	87	88	89	90	91	92	93	94	95

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.

101.516-24/04 – including *Taq* polymerase, IFU-01
101.516-24u/04u – without *Taq* polymerase, IFU-02

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

Lot No.: **0D5**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B*15 SSP subtyping kit ²																				
					Well															
				Prod. No.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					201558701	201558702	201558703	201558704	201558705	201558706	201558707	201558708	201558709	201558710	201558711	201558712	201558713	201558714	201558715	201558716
	IHCW cell line ¹		B*																	
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	+	-	+	-	-	-	-	-	+	+	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004	JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*15:01	*15:20	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*41:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*15:01		+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134	WHONP199	*13:02	*46:01	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*46:01		-	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.516-24/04 – including *Taq* polymerase, IFU-01
101.516-24u/04u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: 0D5

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-B*15 SSP subtyping kit ²																				
					Well															
					17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
				Prod. No.:	201558717	201558718	201558719	201558720	201558721	201558722	201558723	201558724	201558725	201558726	201558727	201558728	201558729	201558730	201558731	201558732
	IHCW cell line ¹		B*																	
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
8	9025	DEU	*35:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
13	9004	JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257	32367	*14:01	*56:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
20	9059	SLE005	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
32	9297	HAG	*41:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-

101.516-24/04 – including *Taq* polymerase, IFU-01
101.516-24u/04u – without *Taq* polymerase, IFU-02

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Lot No.: **0D5**

Lot-specific information

CELL LINE VALIDATION SHEET																	
HLA-B*15 SSP subtyping kit ²																	
										Well							
										33	34	35	36	37	38	39	40
										41	42	43	44	45	46	47	48
Prod. No.:										201558733	201558734	201558735	201558736	201558737	201558738	201558739	201558740
										201558741	201558742	201558743	201558744	201558745	201558746	201558747	201558748
IHCW cell line ¹				B*													
1	9001	SA		*07:02				-	-	-	-	+	-	-	-	-	-
2	9280	LK707		*52:01	*73:01			-	-	-	-	-	-	-	-	-	-
3	9011	E4181324		*52:01				-	-	-	-	-	-	-	-	-	-
4	9275	GU373		*15:10	*53:01			-	-	-	-	-	-	-	-	-	-
5	9009	KAS011		*37:01				-	-	-	-	-	-	-	-	-	-
6	9353	SM		*39:01	*51:01			-	-	-	-	-	-	-	-	-	-
7	9020	QBL		*18:01				-	-	-	-	-	-	-	-	-	-
8	9025	DEU		*35:01				-	-	-	-	-	-	-	-	-	-
9	9026	YAR		*38:01				-	-	-	-	-	-	-	-	-	-
10	9107	LKT3		*54:01				-	-	-	-	-	+	-	-	-	-
11	9051	PITOUT		*44:03				-	-	-	-	-	-	-	-	-	-
12	9052	DBB		*57:01				-	-	-	-	-	-	-	-	-	-
13	9004	JESTHOM		*27:05				-	-	-	-	-	-	-	-	-	-
14	9071	OLGA		*15:01	*15:20			-	-	-	-	-	-	-	-	-	-
15	9075	DKB		*40:01				-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007		*40:02				-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540		*08:01	*55:01			-	-	-	-	-	+	-	-	-	-
18	9257	32367		*14:01	*56:01			-	-	-	-	-	+	-	-	-	-
19	9038	BM16		*18:01				-	-	-	-	-	-	-	-	-	-
20	9059	SLE005		*40:01				-	-	-	-	-	-	-	-	-	-
21	9064	AMALA		*15:01				-	-	-	-	-	-	-	-	-	-
22	9056	KOSE		*35:03				-	-	-	-	-	-	-	-	-	-
23	9124	IHL		*40:02	*56:02			-	-	-	-	-	+	-	-	-	-
24	9035	JBUSH		*38:01				-	-	-	-	-	-	-	-	-	-
25	9049	IBW9		*14:02				-	-	-	-	-	-	-	-	-	-
26	9285	WT49		*58:01				-	-	-	-	-	-	-	-	-	-
27	9191	CH1007		*07:05	*51:01			-	-	-	-	-	+	-	-	-	-
28	9320	BEL5GB		*44:02	*44:03			-	-	-	-	-	-	-	-	-	-
29	9050	MOU		*44:03				-	-	-	-	-	-	-	-	-	-
30	9021	RSH		*42:01				-	-	-	-	-	-	-	-	-	-
31	9019	DUCAF		*18:01				-	-	-	-	-	-	-	-	-	-
32	9297	HAG		*41:02				-	-	-	-	-	-	-	-	-	-
33	9098	MT14B		*40:01				-	-	-	-	-	-	-	-	-	-
34	9104	DHIF		*38:01				-	-	-	-	-	-	-	-	-	-
35	9302	SSTO		*44:02				-	-	-	-	-	-	-	-	-	-
36	9024	KT17		*15:01	*35:01			-	-	-	-	-	-	-	-	-	-
37	9065	HHKB		*07:02				-	-	-	-	-	+	-	-	-	-
38	9099	LZL		*15:01				-	-	-	-	-	-	-	-	-	-
39	9315	CML		*08:01	*27:05			-	-	-	-	-	-	-	-	-	-
40	9134	WHONP199		*13:02	*46:01			-	-	-	-	-	+	-	-	-	-
41	9055	H0301		*14:02				-	-	-	-	-	-	-	-	-	-
42	9066	TAB089		*46:01				-	-	-	-	-	+	-	-	-	-
43	9076	T7526		*46:01				-	-	-	-	-	+	-	-	-	-
44	9057	TEM		*38:01				-	-	-	-	-	-	-	-	-	-
45	9239	SHJO		*42:01	*50:01			-	-	-	-	-	-	-	-	-	-
46	9013	SCHU		*07:02				-	-	-	-	-	+	-	-	-	-
47	9045	TUBO		*51:01				-	-	-	-	-	-	-	-	-	-
48	9303	TER-ND		*35:01	*44:03			-	-	-	-	-	-	-	-	-	-

101.516-24/04 – including *Taq* polymerase, IFU-01
101.516-24u/04u – without *Taq* polymerase, IFU-02

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Lot No.: **0D5**

Lot-specific information

CELL LINE VALIDATION SHEET															
HLA-B*15 SSP subtyping kit ²															
												Well			
												65	66	67	68
												69	70	71	72
												73	74	75	76
												77	78	79	80
Prod. No.:												201558765	201558766	201558767	201558768
												201558769	201558770	201558771	201558772
												201558773	201558774	201558775	201558776
												201558777	201558778	201558779	201558780
IHCW cell line ¹				B*											
1	9001	SA		*07:02				-	-	-	-	-	-	-	-
2	9280	LK707		*52:01	*73:01			-	-	-	-	-	-	-	-
3	9011	E4181324		*52:01				-	-	-	-	-	-	-	-
4	9275	GU373		*15:10	*53:01			-	-	-	-	-	-	-	-
5	9009	KAS011		*37:01				-	-	-	-	-	-	-	-
6	9353	SM		*39:01	*51:01			-	-	-	-	-	-	-	-
7	9020	QBL		*18:01				-	-	-	-	-	-	-	-
8	9025	DEU		*35:01				-	-	-	-	-	-	-	-
9	9026	YAR		*38:01				-	-	-	-	-	-	-	-
10	9107	LKT3		*54:01				-	-	-	-	-	-	-	-
11	9051	PITOUT		*44:03				-	-	-	-	-	-	-	-
12	9052	DBB		*57:01				-	+	-	-	-	-	-	-
13	9004	JESTHOM		*27:05				-	-	-	-	-	-	-	-
14	9071	OLGA		*15:01	*15:20			-	+	-	-	-	-	-	-
15	9075	DKB		*40:01				-	-	-	-	-	-	-	-
16	9037	SWEIG007		*40:02				-	-	-	-	-	-	-	-
17	9282	CTM3953540		*08:01	*55:01			-	-	-	-	-	-	-	-
18	9257	32367		*14:01	*56:01			-	-	-	-	-	-	-	-
19	9038	BM16		*18:01				-	-	-	-	-	-	-	-
20	9059	SLE005		*40:01				-	-	-	-	-	-	-	-
21	9064	AMALA		*15:01				-	-	-	-	-	-	-	-
22	9056	KOSE		*35:03				-	-	-	-	-	-	-	-
23	9124	IHL		*40:02	*56:02			-	-	-	-	-	-	-	-
24	9035	JBUSH		*38:01				-	-	-	-	-	-	-	-
25	9049	IBW9		*14:02				-	-	-	-	-	-	-	-
26	9285	WT49		*58:01				-	-	-	-	-	-	-	-
27	9191	CH1007		*07:05	*51:01			-	-	-	-	-	-	-	-
28	9320	BEL5GB		*44:02	*44:03			-	-	-	-	-	-	-	-
29	9050	MOU		*44:03				-	-	-	-	-	-	-	-
30	9021	RSH		*42:01				-	-	-	-	-	-	-	-
31	9019	DUCAF		*18:01				-	-	-	-	-	-	-	-
32	9297	HAG		*41:02				-	-	-	-	-	-	-	-
33	9098	MT14B		*40:01				-	-	-	-	-	-	-	-
34	9104	DHIF		*38:01				-	-	-	-	-	-	-	-
35	9302	SSTO		*44:02				-	-	-	-	-	-	-	-
36	9024	KT17		*15:01	*35:01			-	-	-	-	-	-	-	-
37	9065	HHKB		*07:02				-	-	-	-	-	-	-	-
38	9099	LZL		*15:01				-	-	-	-	-	-	-	-
39	9315	CML		*08:01	*27:05			-	-	-	-	-	-	-	-
40	9134	WHONP199		*13:02	*46:01			-	-	-	-	-	-	-	-
41	9055	H0301		*14:02				-	-	-	-	-	-	-	-
42	9066	TAB089		*46:01				-	-	-	-	-	-	-	-
43	9076	T7526		*46:01				-	-	-	-	-	-	-	-
44	9057	TEM		*38:01				-	-	-	-	-	-	-	-
45	9239	SHJO		*42:01	*50:01			-	-	-	-	-	-	-	-
46	9013	SCHU		*07:02				-	-	-	-	-	-	-	-
47	9045	TUBO		*51:01				-	-	-	-	-	-	-	-
48	9303	TER-ND		*35:01	*44:03			-	-	-	-	-	-	-	-

101.516-24/04 – including *Taq* polymerase, IFU-01
101.516-24u/04u – without *Taq* polymerase, IFU-02

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

Lot No.: 0D5

Lot-specific information

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

No DNAs carrying the alleles to be amplified by primer solutions 4, 9, 10, 18, 24 to 27, 30 to 34, 36, 39, 49 to 54, 56 to 59, 61 to 65, 67 to 72, 74, 75, 78 to 80, 82 to 89 and 91 to 95 were available. The specificities of the primers in primer solutions 9, 10, 18, 24 to 27, 30, 31, 33, 34, 36, 49, 53, 59, 61, 64, 65, 67, 68, 70 to 72, 78, 79, 82, 85, 87, 91 and 93 to 95 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solutions 4, 32, 39, 50 to 52, 54, 56, 62, 63, 69, 86, 88, 89 and 92 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solutions 57, 58, 74, 75, 80, 83 and 84 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 3, 12, 13, 19, 21, 24, 25, 33, 36, 55, 59, 64, 67, 68, 70 to 72, 77, 79, 82, 85, 87, 90, 91, 93 to 95 one, two or three 3'-primers were not possible to test.

In primer solutions 10, 14, 20, 30, 31, 59 to 61, 64, 65, 72, 78, 79, 91 and 94 one or two 5'-primers were not possible to test. Additional primers in primer solutions 16, 40, 42, 77 and 90 were tested by separately adding one additional 5'-primer or one additional 3'-primer.

101.516-24/04 – including *Taq* polymerase, IFU-01
101.516-24u/04u – without *Taq* polymerase, IFU-02

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Lot No.: 0D5

Lot-specific information

101.516-24/04 – including *Taq* polymerase, IFU-01
101.516-24u/04u – without *Taq* polymerase, IFU-02

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Lot-specific information

101.516-24/04 – including *Taq* polymerase, IFU-01
101.516-24u/04u – without *Taq* polymerase, IFU-02

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Lot No.: **0D5**

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**.