

Olerup SSP[®] HLA-A*11

Product number:	101.416-12u/04u – without <i>Taq</i> pol.
Lot number:	01H
Expiry date:	2012-April-01
Number of tests:	12 tests – Product No. 101.416-12u 4 tests – Product No. 101.416-04u
Number of wells per test:	32
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. 01H.

**CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP[®]*
HLA-A*11 LOT**

The HLA-A*11 specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP[®]* HLA-A*11 lot was made (Lot No. 30F).

The amplification patterns for some rare HLA-A*11 alleles only differ by the length of the specific PCR products.

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

Well	5'-primer	3'-primer	rationale
5	Added	Added	Primer pair added for the improved resolution of the A*1102 and A*1153 alleles.
6	Modified, added	-	Improved specificity, decreased primer oligomer formation, primer from well 9.
8	-	-	Exchanged positive control primer pair.
9	Moved, added	Moved, added	Primer pair moved to wells 6 and 16, new primer pair for the A*1139 allele.
10	Added	-	Primers added for the A*1143 and A*1152 alleles.

16	Added	-	Primer from well 9, primer added for the A*1154 allele.
18	Added	Added	Primer pair added for the A*1147 allele.
19	Added	Added	Primer pairs added for the A*1142 and A*1146 alleles.
20	-	Added	Exchanged positive control primer pair, primer added for the A*1142 allele.
22	-	Added	Primer added for the A*1137 allele.
24	Added	Added	Primer pair added for the A*1148 allele.
25	Added	Added	Primer pair added for the A*1147 allele.
26	-	Added	Primer added for the A*1141 allele.
27	Added	Added	Primer pair added for the A*1155 allele, and for resolution of the A*1117 and A*1140 alleles.
28	Added	Added	Primer pairs added for the A*1149 and A*1152 alleles.
30	Added	Added	Primer pairs added for the A*1145 and A*1155 alleles.
31	Added	Added	Primer pairs added for the A*1143 and A*1149 alleles.
32	Added	Added	Primer pair added for the A*1151 allele.

Change in revision R01 compared to R00:

1. Modified sequences as of allele database 3.7.0: A*110201 corrected at position 899 and the A*1153 allele shown to be identical to the correct sequence of A*110201. As a consequence, the A*110201-110203 alleles are not amplified by primer mix 5.

Change in revision R02 compared to R01:

1. The HLA-A*3402, 3404 and 3407-3408 alleles are weakly amplified by primer mix 3. This has been changed in the Specificity and Interpretation Tables.

PRODUCT DESCRIPTION

HLA-A*11 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the HLA-A*1101 to A*1155 alleles.

PLATE LAYOUT

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

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32

The 32 well cut PCR plate is marked with 'HLA-A*11' in silver/gray ink.

Well No. 1 is marked with Lot No '01H'.

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

The PCR plates are covered with a PCR-compatible foil.

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

INTERPRETATION

The interpretation of HLA-A*11 SSP subtypings will be influenced by most A*01 alleles, several A*02 alleles, the A*03, the A*2307N, six A*24, the A*25, the A*26, most A*29, the A*30, two A*31, two A*32, most A*33, the A*34, the A*36, the A*4301, the A*66, all A*68, the A*6901, two A*74 and the A*8001 alleles when present on the other haplotype. In addition, the B*0818 and B*7301 alleles will be amplified by primer mix 10.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*11 alleles¹, i.e. **A*1101 to A*1155**, recognized by the HLA Nomenclature Committee in January 2010² will give rise to unique amplification patterns by the primers in the HLA-A*11 subtyping kit.

¹The HLA-A*11 subtyping kit cannot distinguish the A*110101 to A*110116 alleles and A*110201 to A*110203 alleles.

The A* 1113 and A*1154 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 16.

The A* 1132 and A*1151 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 32.

²HLA-A alleles listed on the IMGT/HLA web page 2010-January-15, release 2.28.0, www.ebi.ac.uk/imgt/hla.

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RESOLUTION IN HOMO- AND HETEROZYGOTES

The 54 HLA-A*11 alleles will give rise to 54 different amplification patterns. The A*1113 and A*1154 alleles and the A*1132 and A*1151 alleles have patterns that only differ in size of specific PCR product. The A*111501 and A*111502 alleles and the A*112401 and A*112402 alleles have different patterns. These can be combined in 1485 homozygous and heterozygous combinations. 640 of these genotypes do not give rise to unique amplification patterns. (The different sizes of the specific PCR products generated by the primers in wells 5, 6, 10, 13, 15, 16, 19, 20, 22, 24, 26 to 28 and 30 to 32 have not been considered in these calculations.)

+++----- +---+--- - - - - - - - - - - - - - - - - - +-----	1104,1138 = 1127,1138 = 1127,1153
+++----- - - - +---+ - - +----- - - - - - - - - - - - +	1116,1135 = 1135,1153
+++----- +---+--- - - - - - - - - - - - - - - - - - +-----	1102,1139 = 1105,1138
+++----- - - - +---+ -	1102,1112 = 1102,112402
+---+--- - - - +---+ - - +----- - - - - - - - - - - - - - - -	1102,1123 = 1102,1146 = 1105,1116
+++----- - - - +---+ -	1102,1121N = 1102,1148
+---+--- - - - +---+ - - - - - - - - - - - - - - - - - +-----	1102,1126 = 1102,1141
+---+--- - - - +---+ -	1101,1102 = 1102,1105 = 1105,1153
+++-----+ - - - +---+ - +	1114,1150 = 1150,1153
+++----- +---+--- - - - - - - - - - - - - - - - - - +-----	1112,1138 = 112402,1138
+++----- +---+--- - - +----- - - +-----	1116,1139 = 1123,1138 = 1138,1146
+++----- +---+--- - - - - - - - - - - - - - - - - - +-----	1121N,1138 = 1138,1148
+++----- +---+--- - - - - - - - - - - - - - - - - - +-----	1126,1138 = 1138,1141
+++----- +---+--- - - - - - - - - - - - - - - - - - +-----	1129,1138 = 1138,1155
+++----- +---+--- - - - - - - - - - - - - - - - - - +-----	1101,1138 = 1138,1139 = 1139,1153
+++----- - - - +---+ -	1112,1114 = 1114,112402
+++----- - - - +---+ - - +----- - - - - - - - - - - - - - - -	1112,1116 = 1116,112402
+++----- - - - +---+ -	1112,1153 = 112402,1153
+++----- - - - +---+ - - +----- - - - - - - - - - - - - - - -	1114,1123 = 1114,1146
+++----- - - - +---+ -	1114,1121N = 1114,1148
+++----- - - - +---+ - - - - - - - - - - - - - - - - - +-----	1114,1126 = 1114,1141
+++----- - - - +---+ - - - +----- - - - - - - - - - - - - - - -	1116,1136 = 1116,1142 = 1142,1153
+++----- - - - +---+ -	1116,1121N = 1116,1148
+++----- - - - +---+ - - - +----- - - +-----	1116,1126 = 1116,1141
+++----- - - - +---+ - - - +----- - - - - - - - - - - - - - - -	1101,1116 = 1116,1123 = 1116,1146 =
+++----- - - - +---+ - - - +----- - - - - - - - - - - - - - - -	1123,1153 = 1146,1153
+++----- - - - +---+ -	1121N,1153 = 1148,1153
+++----- - - - +---+ - - - - - - - - - - - - - - - - - +-----	1126,1153 = 1141,1153
+++----- - - - +---+ -	1103,1106 = 1103,1118
+++----- - - - +---+ -	1106,1133 = 1118,1133
+---+---+ - - - +---+ -	1103,1108 = 1103,1144 = 1108,1133
+---+---+ - - - +---+ -	1103,1112 = 1103,112402 = 1103,1125 =
+---+---+ - - - +---+ -	1125,1133
+---+---+ - - - +---+ -	1112,1133 = 112402,1133
+---+---+ - - - +---+ -	1103,1123 = 1103,1146
+---+---+ - - - +---+ -	1123,1133 = 1133,1146
+---+---+ - - - +---+ -	1103,1121N = 1103,1148
+---+---+ - - - +---+ - - - - - - - - - - - - - - - - - +-----	1103,1126 = 1103,1141
+---+---+ - - - +---+ -	1103,1129 = 1103,1145
+---+---+ - - - +---+ -	1101,1103 = 1103,1103 = 1103,1120 =
+---+---+ - - - +---+ -	1103,1133 = 1120,1133
+---+---+ - - - +---+ -	1121N,1133 = 1133,1148
+---+---+ - - - +---+ - - - - - - - - - - - - - - - - - +-----	1126,1133 = 1133,1141
+---+---+ - - - +---+ -	1129,1133 = 1133,1145
+---+---+ - - - +---+ -	1101,1133 = 1133,1133
+---+---+ +---+--- - - - - - - - - - - - - - - - - - +-----	1106,1127 = 1118,1127
+---+---+ - - - +---+ -	1106,1135 = 1118,1135
+---+---+ - - - +---+ -	1104,1106 = 1104,1118
+---+---+ +---+--- - - - - - - - - - - - - - - - - - +-----	1112,1127 = 112402,1127
+---+---+ +---+--- - - +----- - - +-----	1123,1127 = 1127,1146
+---+---+ +---+--- - - - +----- - - +-----	1117,1127 = 1127,1140
+++----- +---+--- - - - - - - - - - - - - - - - - - +-----	1127,1129 = 1127,1145 = 1127,1155



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+-----+ +-----+ -----+ --+-----	1101,1127 = 1104,1139 = 1127,1139
+-----+ +-----+ -----+ --+-----	1104,1127 = 1127,1127
+-----+ -----+ +-----+ -----+	1135,1136 = 1135,1142
+-----+ -----+ +-----+ -----+	1129,1135 = 1135,1145
+-----+ -----+ +-----+ -----+	1101,1135 = 1112,1135 = 1132,1135 = 1135,1146
+-----+ -----+ +-----+ -----+	1104,1112 = 1104,112402
+-----+ -----+ +-----+ -----+	1104,1123 = 1104,1146
+-----+ -----+ +-----+ -----+	1104,1129 = 1104,1145
+-----+ -----+ +-----+ -----+	1123,1135 = 112402,1135 = 1131,1135
+-----+ -----+ +-----+ -----+	1105,1106 = 1105,1118
+-----+ -----+ +-----+ -----+	1105,1112 = 1105,112402
+-----+ -----+ +-----+ -----+	1105,1123 = 1105,1146
+-----+ -----+ +-----+ -----+	1105,1121N = 1105,1148
+-----+ -----+ +-----+ -----+	1105,1126 = 1105,1141
+-----+ -----+ +-----+ -----+	1105,1129 = 1105,1145
+-----+ -----+ +-----+ -----+	1101,1105 = 1105,1105
+-----+ +-----+ +-----+ +-----+	1106,1150 = 1118,1150
+-----+ +-----+ +-----+ +-----+	1106,1108 = 1108,1118
+-----+ +-----+ +-----+ +-----+	1106,1144 = 1118,1144
+-----+ +-----+ +-----+ +-----+	1106,1134 = 1118,1134
+-----+ +-----+ +-----+ +-----+	1106,1109 = 1109,1118
+-----+ +-----+ +-----+ +-----+	1106,1139 = 1118,1139
+-----+ +-----+ +-----+ +-----+	1106,1152 = 1118,1152
+-----+ +-----+ +-----+ +-----+	1106,1110 = 1110,1118
+-----+ +-----+ +-----+ +-----+	1106,1143 = 1118,1143
+-----+ +-----+ +-----+ +-----+	1106,1111 = 1111,1118
+-----+ +-----+ +-----+ +-----+	1107,1112 = 1107,112402
+-----+ +-----+ +-----+ +-----+	1106,1125 = 1118,1125
+-----+ +-----+ +-----+ +-----+	1106,1131 = 1118,1131
+-----+ +-----+ +-----+ +-----+	1106,1112 = 1106,112402 = 1118,112402
+-----+ +-----+ +-----+ +-----+	1112,1122 = 1122,112402
+-----+ +-----+ +-----+ +-----+	1107,1123 = 1107,1146
+-----+ +-----+ +-----+ +-----+	1106,1107 = 1106,1113 = 1107,1118 = 1107,1137 = 1113,1118
+-----+ +-----+ +-----+ +-----+	1107,1121N = 1107,1148
+-----+ +-----+ +-----+ +-----+	1107,1126 = 1107,1141
+-----+ +-----+ +-----+ +-----+	1107,1129 = 1107,1145
+-----+ +-----+ +-----+ +-----+	1101,1107 = 1107,1107 = 1107,1113 = 1107,1122 = 1113,1122
+-----+ +-----+ +-----+ +-----+	1106,1147 = 1118,1147
+-----+ +-----+ +-----+ +-----+	1106,111501 = 111501,1118
+-----+ +-----+ +-----+ +-----+	1106,1142 = 1118,1142
+-----+ +-----+ +-----+ +-----+	1106,1123 = 1106,1146 = 1118,1123 = 1118,1146
+-----+ +-----+ +-----+ +-----+	1122,1123 = 1122,1146
+-----+ +-----+ +-----+ +-----+	1106,1136 = 1118,1136
+-----+ +-----+ +-----+ +-----+	1106,1120 = 1118,1120
+-----+ +-----+ +-----+ +-----+	1106,1121N = 1106,1148 = 1118,1121N = 1118,1148
+-----+ +-----+ +-----+ +-----+	1106,112401 = 1118,112401
+-----+ +-----+ +-----+ +-----+	1106,1126 = 1106,1141 = 1118,1126 = 1118,1141
+-----+ +-----+ +-----+ +-----+	1106,1155 = 1118,1155
+-----+ +-----+ +-----+ +-----+	1106,1149 = 1118,1149
+-----+ +-----+ +-----+ +-----+	1106,111502 = 111502,1118
+-----+ +-----+ +-----+ +-----+	1106,1129 = 1106,1145 = 1118,1129
+-----+ +-----+ +-----+ +-----+	1106,1130 = 1118,1130
+-----+ +-----+ +-----+ +-----+	1106,1132 = 1118,1132
+-----+ +-----+ +-----+ +-----+	1101,1106 = 1101,1118 = 1106,1106 = 1106,1118 = 1106,1122 = 1106,1137 = 1118,1122 = 1118,1137 = 1122,1137
+-----+ +-----+ +-----+ +-----+	1121N,1122 = 1122,1148
+-----+ +-----+ +-----+ +-----+	1122,1126 = 1122,1141
+-----+ +-----+ +-----+ +-----+	1122,1129 = 1122,1145

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+-----+--	--+++-	-----	-----	1101,1122 = 1122,1122
+-----+	--+++-	+-----	-----+	1129,1150 = 1145,1150
+-----+	--+++-	+-----	-----+	1101,1150 = 1132,1150
+-----+	--+++-	-----+	-----+	1108,1129 = 1108,1145
+-----+	--+++-	-----+	-----	1101,1108 = 1108,1120 = 1120,1144
+-----+	--+++-	-----	-----+	1129,1144 = 1144,1145
+-----+	--+++-	+-----	-----+	112402,1150 = 1131,1150
+-----+	--+++-	-----+	-----	1108,112402 = 1108,1125 = 1125,1144
+-----+	--+++-	-----+	-----	1108,1108 = 1108,1144
+-----+	--++++	-----	-----	1112,1134 = 112402,1134
+-----+	--++++	--+	-----	1123,1134 = 1134,1146
+-----+	--++++	-----+	-----	1121N,1134 = 1134,1148
+-----+	--++++	-----	--+	1126,1134 = 1134,1141
+-----+	--++++	-----	-----+	1129,1134 = 1134,1145
+-----+	--++++	-----	-----	1101,1134 = 1109,1111 = 1109,1134 =
				1111,1134 = 1134,1134
+-----+	--+++-	-----	-----	1109,1112 = 1109,112402
+-----+	--+++-	--+	-----	1109,1123 = 1109,1146
+-----+	--+++-	-----+	-----	1109,1121N = 1109,1148
+-----+	--+++-	-----	--+	1109,1126 = 1109,1141
+-----+	--+++-	-----	-----+	1109,1129 = 1109,1145
+-----+	--+++-	-----	-----	1101,1109 = 1109,1109
+-----	+---+	-----	--+	1112,1139 = 112402,1139
+-----	+---+	--+	-----	1123,1139 = 1139,1146
+-----	+---+	-----+	-----	1117,1139 = 1139,1140
+-----	+---+	-----+	--+	1121N,1139 = 1139,1148
+-----	+---+	-----	--+	1126,1139 = 1139,1141
+-----	+---+	-----	--+	1129,1139 = 1139,1145 = 1139,1155
+-----	+---+	-----	--+	1101,1139 = 1139,1139
+-----	+---+	-----	--+	1112,1152 = 112402,1152
+-----	+---+	-----	-----+	1110,1112 = 1110,112402
+-----	+---+	-----	-----+	1112,1143 = 112402,1143
+-----	+---+	--+	-----	1123,1152 = 1146,1152
+-----	+---+	--+	-----+	1110,1123 = 1110,1146
+-----	+---+	--+	-----+	1123,1143 = 1143,1146
+-----	+---+	-----+	-----+	1121N,1152 = 1148,1152
+-----	+---+	-----+	-----+	1110,1121N = 1110,1148
+-----	+---+	-----+	-----+	1121N,1143 = 1143,1148
+-----	+---+	-----	--+	1126,1152 = 1141,1152
+-----	+---+	-----	--+	1110,1126 = 1110,1141
+-----	+---+	-----	--+	1126,1143 = 1141,1143
+-----	+---+	-----	-----+	1110,111502 = 1110,1152
+-----	+---+	-----	-----+	1129,1152 = 1145,1152
+-----	+---+	-----	-----+	111502,1143 = 1130,1152 = 1143,1149 =
				1143,1152 = 1149,1152
+-----	+---+	-----	--+	1101,1152 = 111502,1152 = 1152,1152
+-----	+---+	-----	-----+	1110,1129 = 1110,1145
+-----	+---+	-----	-----+	1110,1130 = 1110,1143
+-----	+---+	-----	-----+	1101,1110 = 1110,1110
+-----	+---+	-----	-----+	1129,1143 = 1143,1145
+-----	+---+	-----	-----+	1101,1143 = 1130,1143 = 1143,1143
+-----	+---+	-----	-----	1111,1112 = 1111,112402
+-----	+---+	--+	-----	1111,1123 = 1111,1146
+-----	+---+	-----+	-----	1111,1121N = 1111,1148
+-----	+---+	-----	--+	1111,1126 = 1111,1141
+-----	+---+	-----	-----+	1111,1129 = 1111,1145
+-----	+---+	-----	-----	1101,1111 = 1111,1111
+-----	+---+	-----	-----	1112,1113 = 1113,112402
+-----	+---+	--+	-----	1112,1147 = 112402,1147
+-----	+---+	--+	-----	1112,111501 = 111501,112402
+-----	+---+	--+	-----	1112,1142 = 112402,1142
+-----	+---+	--+	-----	1112,1123 = 1112,1146 = 112402,1146
+-----	+---+	--+	-----	1112,1136 = 112402,1136
+-----	+---+	-----+	-----	1112,1137 = 112402,1137
+-----	+---+	-----+	-----+	1125,1129 = 1125,1145

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+-----	--+++-	-----+	-----+	1120,1131 = 1125,1132
+-----	--+++-	-----+	-----	1101,1125 = 1112,1120 = 1112,1125 =
				1120,112402 = 1120,1125
+-----	--+++-	-----+	-----	1112,1121N = 1112,1148 = 1121N,112402
+-----	--+++-	-----	--+-----	1112,1126 = 1112,1141 = 112402,1141
+-----	--+++-	-----	--+-----	1112,1155 = 112402,1155
+-----	--+++-	-----	--+-----	1112,1149 = 112402,1149
+-----	--+++-	-----	--+-----	1112,111502 = 111502,112402
+-----	--+++-	-----	-----++	1129,1131 = 1131,1145
+-----	--+++-	-----	-----+-	1112,1129 = 1112,1145 = 112402,1129 =
				112402,1145
+-----	--+++-	-----	-----+	1112,1130 = 112402,1130
+-----	--+++-	-----	-----+	1101,1131 = 1112,1131 = 1112,1132 =
				112402,1132 = 1131,1132
+-----	--+++-	-----	-----	1101,1112 = 1101,112402 = 1112,112402
+-----	--+++-	--+-----	-----	1113,1123 = 1113,1146
+-----	--+++-	-----+	-----	1113,1121N = 1113,1148
+-----	--+++-	-----	--+-----	1113,1126 = 1113,1141
+-----	--+++-	-----	-----+-	1113,1129 = 1113,1145
+-----	--+++-	-----	-----	1101,1113 = 1113,1113
+-----	--+++-	--+-----	+-----	1123,1147 = 1146,1147
+-----	--+++-	--+-----	-----	111501,1123 = 111501,1146
+-----	--+++-	--+-----	+-----	1121N,1147 = 1147,1148
+-----	--+++-	--+-----	-----	111501,1121N = 111501,1148
+-----	--+++-	--+-----	++-----	1126,1147 = 1141,1147
+-----	--+++-	--+-----	+-----+-	1129,1147 = 1145,1147
+-----	--+++-	--+-----	+-----	1101,1147 = 111501,112401 =
				111501,1147 = 112401,1147 = 1147,1147
+-----	--+++-	--+-----	--+-----	111501,1126 = 111501,1141
+-----	--+++-	--+-----	-----+-	111501,1129 = 111501,1145
+-----	--+++-	--+-----	-----	1101,111501 = 111501,111501
+-----	--+++-	--+-----	--+-----	1117,1123 = 1117,1142 = 1117,1146
+-----	--+++-	--+-----	-----	1119,1142 = 1123,1140 = 1140,1142 =
				1140,1146
+-----	--+++-	--+-----	-----	1121N,1142 = 1142,1148
+-----	--+++-	--+-----	--+-----	1126,1142 = 1141,1142
+-----	--+++-	--+-----	-----+-	1129,1142 = 1142,1145
+-----	--+++-	--+-----	-----	1101,1142 = 1123,1136 = 1123,1142 =
				1136,1142 = 1136,1146 = 1142,1142 =
				1142,1146
+-----	--+++-	--+-----	-----	1119,1123 = 1119,1146
+-----	--+++-	--+-----	-----	1123,1137 = 1137,1146
+-----	--+++-	--+-----	-----	1120,1123 = 1120,1146
+-----	--+++-	--+-----	-----	1121N,1123 = 1121N,1146 = 1146,1148
+-----	--+++-	--+-----	--+-----	1123,1141 = 1126,1146 = 1141,1146
+-----	--+++-	--+-----	--+-----	1123,1155 = 1146,1155
+-----	--+++-	--+-----	--+-----	1123,1149 = 1146,1149
+-----	--+++-	--+-----	-----+-	111502,1123 = 111502,1146
+-----	--+++-	--+-----	-----+-	1123,1129 = 1123,1145 = 1129,1146 =
				1145,1146
+-----	--+++-	--+-----	-----+-	1123,1130 = 1130,1146
+-----	--+++-	--+-----	-----+-	1123,1132 = 1132,1146
+-----	--+++-	--+-----	-----	1101,1123 = 1101,1146 = 1123,1146 =
				1146,1146
+-----	--+++-	-----++	--+-----	1117,1121N = 1117,1148
+-----	--+++-	-----++	--+-----	1121N,1140 = 1140,1148
+-----	--+++-	-----++	--+-----	1117,1126 = 1117,1141
+-----	--+++-	-----++	--+-----	1126,1140 = 1140,1141
+-----	--+++-	-----++	--+-----	1117,1129 = 1117,1155 = 1140,1155
+-----	--+++-	-----++	--+-----	1101,1117 = 1117,1136
+-----	--+++-	-----++	-----	1101,1140 = 1119,1136 = 1136,1140
+-----	--+++-	-----++	-----	1121N,1136 = 1136,1148
+-----	--+++-	-----++	--+-----	1126,1136 = 1136,1141
+-----	--+++-	-----++	-----+-	1129,1136 = 1136,1145
+-----	--+++-	-----++	-----	1101,1136 = 1136,1136

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+-----	--+++-	-----	-----	1119,1121N = 1119,1148
+-----	--+++-	-----	-+-----	1119,1126 = 1119,1141
+-----	--+++-	-----	-----	1121N,1137 = 1137,1148
+-----	--+++-	-----	-+-----	1126,1137 = 1137,1141
+-----	--+++-	-----	-----	1129,1137 = 1137,1145
+-----	--+++-	-----	-----	1101,1137 = 1137,1137
+-----	--+++-	-----	-----	1120,1121N = 1120,1148
+-----	--+++-	-----	-+-----	1120,1126 = 1120,1141
+-----	--+++-	-----	-----	1120,1129 = 1120,1145
+-----	--+++-	-----	-----	1101,1120 = 1120,1120
+-----	--+++-	-----	-+-----	1121N,1126 = 1121N,1141 = 1141,1148
+-----	--+++-	-----	-----	1121N,1155 = 1148,1155
+-----	--+++-	-----	-----	1121N,1149 = 1148,1149
+-----	--+++-	-----	-----	111502,1121N = 111502,1148
+-----	--+++-	-----	-----	1121N,1129 = 1121N,1145 = 1129,1148 = 1145,1148
+-----	--+++-	-----	-----	1121N,1130 = 1130,1148
+-----	--+++-	-----	-----	1121N,1132 = 1132,1148
+-----	--+++-	-----	-----	1101,1121N = 1101,1148 = 1121N,1121N = 1121N,1148
+-----	--+++-	-----	+-----	112401,1129 = 112401,1145
+-----	--+++-	-----	-----	1126,1155 = 1141,1155
+-----	--+++-	-----	-----	1126,1149 = 1141,1149
+-----	--+++-	-----	-----	111502,1126 = 111502,1141
+-----	--+++-	-----	-----	1126,1129 = 1126,1145 = 1129,1141 = 1141,1145
+-----	--+++-	-----	-----	1126,1130 = 1130,1141
+-----	--+++-	-----	-----	1126,1132 = 1132,1141
+-----	--+++-	-----	-----	1101,1126 = 1101,1141 = 1126,1141 = 1141,1141
+-----	--+++-	-----	-----	1101,1155 = 1129,1155 = 1145,1155 = 1155,1155
+-----	--+++-	-----	-----	1129,1149 = 1145,1149
+-----	--+++-	-----	-----	111502,1129 = 111502,1145
+-----	--+++-	-----	-----	1101,1149 = 111502,1130 = 111502,1149 = 1130,1149 = 1149,1149
+-----	--+++-	-----	-----	1101,111502 = 111502,111502
+-----	--+++-	-----	-----	1129,1130 = 1130,1145
+-----	--+++-	-----	-----	1129,1132 = 1132,1145
+-----	--+++-	-----	-----	1101,1129 = 1101,1145 = 1129,1129 = 1129,1145
+-----	--+++-	-----	-----	1101,1130 = 1130,1130
+-----	--+++-	-----	-----	1101,1132 = 1132,1132
+-----	--+++-	-----	-----	112402,1125 = 1125,1125
+-----	--+++-	-----	-----	112402,1131 = 1131,1131
+-----	--+++-	-----	-----	1102,1102 = 1102,1153
+-----	--+++-	-----	-----	1117,1138 = 1138,1140
+-----	--+++-	-----	-----	1138,1138 = 1138,1153
+-----	--+++-	-----	-----	1114,1114 = 1114,1153
+-----	--+++-	-----	-----	1116,1116 = 1116,1153
+-----	--+++-	-----	-----	1117,1117 = 1117,1119 = 1117,1140
+-----	--+++-	-----	-----	1119,1140 = 1140,1140

1101 = 110101 – 110116
1102 = 110201 - 110203
1113 = 1113 and 1154
1132 = 1132 and 1151

SPECIFICITY TABLE**HLA-A*11 SSP subtyping**

Specificities and sizes of the PCR products of the 32 primer mixes used for HLA-A*11 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-A*11 alleles ³	Other amplified HLA-A alleles ⁴
1⁶	195 bp	800 bp	*110101-110116, 1103-1113, 111501, 111502, 1120-1127, 1129- 1137, 1139, 1141-1144, 1146- 1152, 1154, 1155	*0113, 0234-023503, 025601, 025602, 0262, 0278, 9203, 03010101- 030108, 030110-0307, 0309-0331, 0333-0335, 0337-0340, 0342-0356, 0358-0374, 2419, 3018, 340101-3408, 6601, 6602, 6604, 6606-6610, 6612, 680101-680204, 6806-6814, 6816-6819, 6821-6830, 6832-6835, 6837-6845, 6847, 6848, 6901, 7413
2	270 bp	1070 bp	*110201-110203, 1114, 1116, 1138	
3	190 bp	1070 bp	*1103, 1133	*0322, 0342, 300101- 3004, 3006-3020, 3022- 3027N, 3029-3034, 3103, 3104, 3402 ^w , 3403, 3404 ^w , 3407 ^w , 3408 ^w
4⁶	235 bp	1070 bp	*1104, 1127, 1135	*0112, 0114, 0119, 9256, 03010101-0317, 0319- 0339, 0341-0374, 2492, 300101-3004, 3006- 3013, 3015-3020, 3022- 3027N, 3029-3034, 3103, 3104, 3204, 3402-3404, 3407, 3408, 3601, 3602, 3605
5¹¹	180 bp, 210 bp	800 bp	*1105	*6608
6¹²	195 bp, 550 bp	1070 bp	*1106, 1107, 1118, 1122	*0238, 9201, 9235, 9254, 2511, 2603, 2606, 2621, 2630, 2636
7^{6,7}	215 bp	1070 bp	*1108, 1144, 1150	*01010101-0102, 0104N, 0107-0111N,

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				0113-0118N, 0121-0124, 0126-0140, 0142-0151, 0318, 0350, 0366, 3004, 3006, 3017, 3029, 3601, 3602, 3604, 3605
8⁵	100 bp	800 bp	*1109, 1134	
9^{5,8}	85 bp	800 bp	*1127, 1138, 1139	*0126, 2459
10^{5,13}	120 bp, 280 bp,	1070 bp	*1110, 1143, 1152	*0151, 250101-2511, 260101-2606, 2608- 2618, 2620-2629, 2632- 2642, 3103, 3313, 340101-3408, 6601, 6604-6611, B*0818, B*7301
11	215 bp	800 bp	*110101-1107, 1109-1122, 1127, 1129, 1130, 1132-1134, 1136- 1143, 1145-1147, 1149, 1151-1152, 1154-1155	*0112, 0119, 0125 ^w , 0302, 0310, 0331, 0332, 0365, 0369N, 0373, 2492
12	235 bp	1070 bp	*110101-1103, 1105-1125, 1129- 1134, 1136-1147, 1149, 1151-1152, 1154-1155	*01010101-0102, 0104N, 0106, 0107, 0109-0111N, 0113, 0116N-0118N, 0121-0140, 0142-0151, 0318, 3604
13^{5,8,14}	90 bp, 195 bp	800 bp	*1111, 1134	*4301
14⁵	100 bp	1070 bp	*110101-1111, 1113-1116, 1120- 1127, 1129-1139, 1141-1152, 1154- 1155	*0113, 0117, 0363, 2502, 2613, 2619, 2633, 340101 ^w , 340102 ^w , 3402- 3404, 3405 ^w , 3406, 3408, 6601, 6604, 6606-6611
15^{5,15}	100 bp, 215 bp	800 bp	*1112, 112402, 1125, 1131, 1135	*0106, 0234 ^w -023503 ^w , 025601, 025602, 0262, 0278, 9203, 9256, 03010101-0331, 0333- 0374, 2424, 29010101- 2903, 2904 ^w , 2905-2918, 2921, 2922, 300101- 300204, 3003, 3007- 3020, 3022-3027N, 3030- 3034, 3103, 3104, 3204, 3217, 3402-3404, 3406- 3408, 6602, 6606, 6612, 680101-680204,

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				6806-6814, 6816-6819, 6821-6823, 6825-6830, 6832-6839, 6841-6848, 6901, 7413
16 ^{5,8,16}	95 bp, 205 bp	1070 bp	*1107, 1113, 1154	
17	205 bp	1070 bp	*1114, 1150	*0110, 300101-3003, 3007, 3008, 3010-3016, 3018-3020, 3022, 3024- 3026, 3030-3034, 8001
18	235 bp	1070 bp	*111501, 1147	
19 ^{6,9,10,17}	175 bp, 220 bp, 265 bp	1070 bp	*1116, 1123, 1135, 1142, 1146	*9256
20 ¹⁸	175 bp, 240 bp	800 bp	*1117, 1136, 1140, 1142	*0143, 260101-2602, 2604, 260701-2615, 2617-2619, 2622-2629, 2631-2634, 2636-2642, 4301
21 ^{5,7}	100 bp	1070 bp	*1117, 1119, 1140	*01010101-0104N, 0106, 0108-0112, 0114-0116N, 0118N-0151, 0341, 2444 ^w , 250101, 250102, 2503-2511, 260101- 2612, 2614-2618, 2620- 2629, 2631, 2632, 2634- 2642, 3103, 3313, 3601- 3605, 4301, 6605, 7410, 8001
22 ¹⁹	150 bp, 230 bp	1070 bp	*1106, 1118, 1137	*020501-020604, 020606-020609, 0208, 0210, 0214, 0221, 0228, 0241, 0244, 0251, 0254, 0257, 0261, 0272, 0279, 0284, 0291, 0299, 9206, 9208, 9222, 9226, 9227, 9237, 9242-9244, 9254, 9269, 9270, 9272, 9278- 9280, 2603, 2606, 2621, 2630, 6815
23 ⁵	80 bp	800 bp	*1103, 1108, 1120, 1125	*020301 ^w , 020302 ^w , 0213, 0226, 0238, 0299, 9217 ^w , 9248 ^w , 927101, 927102, 6842 ^w
24 ^{6,20}	295 bp, 470 bp	1070 bp	*1121N, 1148	*0104N, 0141, 0321N, 2307N, 2411N

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25 ⁷	220 bp	1070 bp	*112401, 1147	*030102, 300205, 8001
26 ²¹	305 bp, 370 bp	1070 bp	*1126, 1141	*0103, 2632, 3313, 3603, 7410
27 ²²	210 bp, 260 bp	1070 bp	*1117, 1127, 1138, 1139, 1155	*01010101-0102, 0104N, 0106-0119, 0121-0140, 0142-0151, 0318, 2492, 8001
28 ²³	240 bp, 280 bp	800 bp	*111502, 1149, 1152	*2635
29 ⁵	80 bp	1070 bp	*1110	*0255, 0324, 2603, 2606, 2621, 2630, 330101- 330103, 330301-3307, 3310-3312, 3314-3316, 3318-3320, 3322-3329, 340101-3408, 6601- 6610, 6612, 680101- 6809, 6811N, 6812, 6815-6829, 6831-6835, 6837-6845, 6847, 6848, 6901
30 ²⁴	235 bp, 265 bp	1070 bp	*1129, 1145, 1155	*6611
31 ^{9,25}	230 bp, 285 bp	1070 bp	*1130, 1143, 1149	*3103, 3313
32 ^{6,26}	205 bp, 265 bp, 295 bp	1070 bp	*1131, 1132, 1135, 1150, 1151	*0121, 9256, 0307, 0342, 3004, 3006, 3009, 3017, 3029, 3103, 3104

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-A*11 SSP typings.

When the primers in a primer mix can give rise to specific PCR products of more than one length this is indicated if the size difference is 20 base pairs or more. Size differences shorter than 20 base pairs are not given. For high resolution SSP kits the respective lengths of the specific PCR product(s) of the alleles amplified by these primer mixes are given.

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 two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-A*11 subtyping.

In addition, wells number 5, 8, 9, 11, 13, 15, 20, 23 and 28 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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In the presence of a specific amplification the intensity of the control band often decreases.

³The A* 1113 and A*1154 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 16. The A* 1132 and A*1151 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 32.

⁴Due to the sharing of sequence motifs between HLA-A alleles some non-HLA-A*11 alleles will be amplified by primer mixes 1, 3 to 7, 9 to 15, 17 and 19 to 32.

⁵Short specific PCR fragments are less intense and not as sharp as longer specific bands.

⁶Primer mixes 1, 4, 7, 19, 24 and 32 may give rise to nonspecific amplifications.

⁷Primer mixes 7, 21 and 25 may give a lower yield of specific PCR product than the other A*11 primer mixes.

⁸Primer mixes 9, 13 and 16 have a tendency of giving rise to primer oligomer formation.

⁹Primer mixes 19 and 31 may give rise to a long unspecific amplification product of about 700 bp. This band should be disregarded when interpreting the A*11 SSP typings.

¹⁰Primer mix 19 has a tendency of giving rise to a weaker positive control band than the other A*11 primer mixes.

¹¹Primer mix 5: Specific PCR product of 180 bp in the A*1105 allele. Specific PCR product of 210 bp in the A*6608 allele.

¹²Primer mix 6: Specific PCR product of 195 bp in the A*1107 and 1122 alleles. Specific PCR product of 550 bp in the A*1106 and 1118 and the A*0238, 9201, 9235, 9254, 2511, 2603, 2606, 2621, 2630 and 2636 alleles.

¹³Primer mix 10: Specific PCR fragment of 120 bp in the A*1110, 0151, 250101-2511, 260101-2606, 2608-2618, 2620-2629, 2632-2634, 2636-2642, 340101-3408, 6601, 6604-6611, B*0818, B*7301 allele. Specific PCR fragment of 280 bp in the A*1143 and 1152 and the A*3103 alleles. Specific PCR fragment of 120 and 280 bp in the A*2635 and 3313 alleles.

¹⁴Primer mix 13: Specific PCR fragment of 90 bp in the A*1134 allele. Specific PCR fragment of 195 bp in the A*1111 and A*4301 alleles.

¹⁵Primer mix 15: Specific PCR fragment of 100 bp in the A*1112 and the A*0234^w-023503^w, 025601, 025602, 0262, 0278, 9203, 030102, 0302,0310, 0318, 0331, 0350, 0365, 0366, 0369, 0373, 2424, 29010101-2903, 2904^w, 2905-2918, 2921, 2922, 3217, 6602, 6612, 680101-680204, 6806-6814, 6816-6819, 6821-6823, 6825-6830, 6832-6839, 6841-6848, 6901 and 7413 alleles. Specific PCR fragment of 215 bp in the A*112402, 1125, 1131 and 1135 and the A*0106, 9256, 030103, 030110, 0308, 0329, 0330, 0334, 0336, 0341, 0362, 0363, 300201-300204, 3003, 3007, 3009, 3010 3012, 3013, 3022, 3027N, 3031-3034, 3103, 3104, 3204, 3402-3404, 3407 and 3408 alleles. Specific PCR fragment of 100 and 215 bp in the A*03010101-03010103, 030103-030109, 030111-031117, 0303N-0307, 0309, 0311N-0317, 0319-0328, 0333, 0335, 0337-0340, 0342-0349, 0351-0361, 0364, 0367, 0368N, 0370-0372, 0374, 300101, 300102, 3008, 301101, 301102, 3014L-3020, 3023-3026 and 3030 alleles. Both PCR fragments may not always be obtained.

¹⁶Primer mix 16: Specific PCR fragment of 95 bp in the A*1113 allele. Specific PCR fragment of 205 bp in the A*1107 and 1154 alleles.

¹⁷Primer mix 19: Specific PCR product of 175 bp in the A*1116, 1135 and 1142 and the A*9256 alleles. Specific PCR product of 220 bp in the A*1123 allele. Specific PCR product of 265 bp in the A*1146 allele.

¹⁸Primer mix 20: Specific PCR fragment of 175 bp in the A*1142 allele. Specific PCR fragment of 240 bp in the A*1117, 1136 and 1140 and the A*0143, 260101-2602, 2604, 260701-2615, 2617-2619, 2622-2629, 2631-2634, 2636-2642 and 4301 alleles.

¹⁹Primer mix 22: Specific PCR fragment of 150 bp in the A*1137 allele. Specific PCR fragment of 230 bp in the A*1106 and 1118 and the A*020501-020604, 020606-020609, 0208, 0210, 0214, 0221, 0228, 0241, 0244, 0251, 0254, 0257, 0261, 0272, 0279, 0284, 0291, 0299, 9206, 9208, 9222, 9226, 9227, 9237, 9242-9244, 9254, 9269, 9270, 9272, 9278-9280, 2603, 2606, 2621, 2630 and 6815 alleles.

²⁰Primer mix 24: Specific PCR fragment of 295 bp in the A*1148 and the A*0141 alleles. Specific PCR fragment of 470 bp in the A*1121N and the A*0104N, 0321N, 2307N and A*2411N alleles.

²¹Primer mix 26: Specific PCR fragment of 305 bp in the A*1126 and the A*0103, 2632, 3313, 3603 and A*7410 alleles. Specific PCR fragment of 370 bp in the A*1141 allele.

²²Primer mix 27: Specific PCR fragment of 210 bp in the A*1117 allele. Specific PCR fragment of 260 bp in the A*1127, 1138, 1139 and 1155 and the A*01010101-0102, 0104N, 0106-0119,

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0121-0140, 0142, 0144-0151, 0318, 2492 and 8001 alleles. Specific PCR fragment of 210 and 260 bp in the A*0143 allele.

²³Primer mix 28: Specific PCR fragment of 240 bp in the A*111502 and 1149 alleles. Specific PCR fragment of 280 bp in the A*1152 and the A*2635 alleles.

²⁴Primer mix 30: Specific PCR fragment of 235 bp in the A* 1145 and the A*6611 alleles. Specific PCR fragment of 265 bp in the A* 1129 and 1155 alleles.

²⁵Primer mix 31: Specific PCR fragment of 230 bp in the A* 1149 allele. Specific PCR fragment of 285 bp in the A*1130 and 1143 and the A*3103 and 3313 alleles.

²⁶Primer mix 32: Specific PCR fragment of 205 bp in the A* 1131 and 1135 and the A*0121, 9256, 0307, 0342, 3004, 3006, 3009, 3017, 3029, 3103 and 3104 alleles. Specific PCR fragment of 265 bp in the A*1151 allele. Specific PCR fragment of 295 bp in the A*1132 and A*1150 alleles.

‘w’, may be weakly amplified.

INTERPRETATION TABLE

HLA-A*11 SSP subtyping

Amplification patterns of the A*1101 to A*1155 alleles

	Well ⁷															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Length of spec.	195	270	190	235	180	195	215	100	85	120	215	235	90	100	100	95
PCR product(s)					210	550				280			195		215	205
Length of int. pos control ¹	800	1070	1070	1070	800	1070	1070	800	800	1070	800	1070	800	1070	800	1070
5'-primer(s) ²	127	28	363	363	363	292	363	553	527	97	363	363	102	282	282	391
	5'-ggg 3'	5'-TCC 3'	5'-ATA 3'	5'-ATA 3'	5'-ATA 3'	5'-CTC 3'	5'-ATA 3'	5'-TgC 3'	5'-TgC 3'	5'-TCA 3'	5'-ATA 3'	5'-ATA 3'	5'-ACC 3'	5'-CAG 3'	5'-CAG 3'	5'-ACA 3'
					831	399		565		103			565		363	399
					5'-gAg 3'	5'-TTA 3'		5'-gCA 3'		5'-CCA 3'			5'-gCA 3'		5'-ATA 3'	5'-TTA 3'
						413				261						503
						5'-CCC 3'				5'-AAC 3'						5'-Cag 3'
3'-primer(s) ³	282	127	502	559	502	559	539	616	570	341	539	559	257	341	341	559
	5'-gAC 3'	5'-CTT 3'	5'-CTg 3'	5'-CgT 3'	5'-CTC 3'	5'-CCg 3'	5'-TCC 3'	5'-CgT 3'	5'-CCg 3'	5'-CgT 3'	5'-TCT 3'	5'-CCg 3'	5'-gCA 3'	5'-CgT 3'	5'-Cgg 3'	5'-CCg 3'
	282		524	559	899							559	616		538	
	5'-CAC 3'		5'-CgT 3'	5'-CgT 3'	5'-ACg 3'							5'-CCg 3'	5'-CgT 3'		5'-CAA 3'	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HLA-A allele ⁴																

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Length of spec.	195	270	190	235	180	195	215	100	85	120	215	235	90	100	100	95
PCR product(s)					210	550				280			195		215	205
HLA-A allele ⁴																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*110101-110116	1										11	12		14		
*110201-110203 ⁸		2									11	12		14		
*1103	1		3								11	12		14		
*1104	1			4							11			14		
*1105	1				5						11	12		14		
*1106	1					6					11	12		14		
*1107	1					6					11	12		14		16
*1108	1						7					12		14		
*1109	1							8			11	12		14		
*1110	1									10	11	12		14		
*1111	1										11	12	13	14		
*1112	1										11	12			15	
*1113, 1154 ⁵	1										11	12		14		16
*1114		2									11	12		14		
*111501	1										11	12		14		
*111502	1										11	12		14		
*1116		2									11	12		14		
*1117											11	12				
*1118						6					11	12				
*1119											11	12				
*1120	1										11	12		14		
*1121N	1										11	12		14		
*1122	1					6					11	12		14		
*1123	1											12		14		
*112401	1											12		14		
*112402	1											12		14	15	
*1125	1											12		14	15	
*1126	1													14		
*1127	1			4					9		11			14		
*1129	1										11	12		14		
*1130	1										11	12		14		
*1131	1											12		14	15	
*1132, 1151 ⁶	1										11	12		14		
*1133	1		3								11	12		14		
*1134	1							8			11	12	13	14		
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

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205	235	175	175	100	150	80	295	220	305	210	240	80	235	230	205	Length of spec.
		220	240		230		470		370	260	280		265	285	265	PCR product(s)
		265													295	
																HLA-A allele ⁴
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
																*110101-110116
																*110201-110203 ⁸
						23										*1103
																*1104
																*1105
					22											*1106
																*1107
						23										*1108
																*1109
												29				*1110
																*1111
																*1112
																*1113, 1154 ⁵
17																*1114
	18															*111501
											28					*111502
		19														*1116
			20	21						27						*1117
					22											*1118
				21												*1119
						23										*1120
							24									*1121N
																*1122
	19															*1123
									25							*112401
																*112402
						23										*1125
									26							*1126
										27						*1127
													30			*1129
														31		*1130
															32	*1131
															32	*1132, 1151 ⁶
																*1133
																*1134
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

Lot No.: **01H**

Lot-specific information

www.olerup-ssp.com

Length of spec.	195	270	190	235	180	195	215	100	85	120	215	235	90	100	100	95
PCR product(s)					210	550				280			195		215	205
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*1135	1			4										14	15	
*1136	1										11	12		14		
*1137	1										11	12		14		
*1138		2							9		11	12		14		
*1139	1								9		11	12		14		
*1140											11	12				
*1141	1										11	12		14		
*1142	1										11	12		14		
*1143	1									10	11	12		14		
*1144	1						7					12		14		
*1145											11	12		14		
*1146	1										11	12		14		
*1147	1										11	12		14		
*1148	1													14		
*1149	1										11	12		14		
*1150	1						7							14		
*1152	1									10	11	12		14		
*1155	1										11	12		14		
*01010101-0102, 0109, 0111N, 0116N, 0118N, 0122N-0124, 0127N-0140, 0142, 0144-0150							7					12				
*0103, 3603, 7410																
*0104N							7					12				
*0106												12			15	
*0107							7					12				
*0108, 0115N							7									
*0110							7					12				
*0112, 0119				4							11					
*0113	1						7					12		14		
*0114				4			7									
*0117							7					12		14		
*0120																
*0121							7					12				
*0125											w	12				
*0126							7		9			12				
*0141																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Lot No.: **01H**

Lot-specific information

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205	235	175	175	100	150	80	295	220	305	210	240	80	235	230	205	Length of spec. PCR product(s)
		220	240		230		470		370	260	280		265	285	265	
		265													295	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
		19													32	*1135
			20													*1136
				22												*1137
										27						*1138
										27						*1139
			20	21												*1140
									26							*1141
		19	20													*1142
														31		*1143
																*1144
													30			*1145
		19														*1146
	18							25								*1147
							24									*1148
											28			31		*1149
17															32	*1150
											28					*1152
										27			30			*1155
				21						27						*01010101-0102, 0109, 0111N, 0116N, 0118N, 0122N-0124, 0127N-0140, 0142, 0144-0150
				21					26							*0103, 3603, 7410
				21			24			27						*0104N
				21						27						*0106
										27						*0107
				21						27						*0108, 0115N
17				21						27						*0110
				21						27						*0112, 0119
										27						*0113
				21						27						*0114
										27						*0117
				21												*0120
				21						27					32	*0121
				21						27						*0125
				21						27						*0126
				21			24									*0141
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

Lot No.: **01H**

Lot-specific information

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Length of spec.	195	270	190	235	180	195	215	100	85	120	215	235	90	100	100	95
PCR product(s)					210	550				280			195		215	205
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*0143							7					12				
*0151							7			10		12				
*020301, 020302, 9217, 9248																
*020501-020604, 020606-020609, 0208, 0210, 0214, 0221, 0228, 0241, 0244, 0251, 0254, 0257, 0261, 0272, 0279, 0284, 0291, 9206, 9208, 9222, 9226, 9227, 9237, 9242-9244, 9269, 9270, 9272, 9278-9280																
*0213, 0226, 927101, 927102																
*0234-023503	1															w
*0238						6										
*0255, 330101-330103, 330301-3307, 3310-3312, 3314-3316, 3318-3320, 3322-3329, 6603, 680301-6805, 6820, 6831																
*025601, 025602, 0262, 0278, 9203, 0340, 6810, 6813, 6814, 6830, 7413	1															15
*0299																
*9201, 9235						6										
*9254						6										
*9256				4												15
*03010101-03010103, 030103-030108, 030110-030117, 0303N-0306, 0309, 0311N-0317, 0319, 0320, 0323, 0325-0330, 0333-0335, 0337-0339, 0343-0349, 0351-0356, 0358-0362, 0364, 0367, 0368N, 0370-0372, 0374	1			4												15
*030102	1			4												15
*030109, 0308, 0336N, 0357, 3204				4												15
*0302, 0310, 0331, 0365, 0369N, 0373	1			4							11					15
*0307	1			4												15
*0318	1						7					12				15
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Lot No.: **01H**

Lot-specific information

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														Length of spec.				
														PCR product(s)				
205	235	175	175	100	150	80	295	220	305	210	240	80	235	230	205			
		220	240		230		470		370	260	280		265	285	265	Well No.		
		265													295			
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			
			20	21						27						*0143		
				21						27						*0151		
						w										*020301, 020302, 9217, 9248		
					22											*020501-020604, 020606-020609, 0208, 0210, 0214, 0221, 0228, 0241, 0244, 0251, 0254, 0257, 0261, 0272, 0279, 0284, 0291, 9206, 9208, 9222, 9226, 9227, 9237, 9242-9244, 9269, 9270, 9272, 9278-9280		
						23										*0213, 0226, 927101, 927102		
																*0234-023503		
						23										*0238		
												29				*0255, 330101-330103, 330301-3307, 3310-3312, 3314-3316, 3318-3320, 3322-3329, 6603, 680301-6805, 6820, 6831		
																*025601, 025602, 0262, 0278, 9203, 0340, 6810, 6813, 6814, 6830, 7413		
					22	23										*0299		
																*9201, 9235		
					22											*9254		
		19													32	*9256		
																*03010101-03010103, 030103-030108, 030110-030117, 0303N-0306, 0309, 0311N-0317, 0319, 0320, 0323, 0325-0330, 0333-0335, 0337-0339, 0343-0349, 0351-0356, 0358-0362, 0364, 0367, 0368N, 0370-0372, 0374		
								25								*030102		
																*030109, 0308, 0336N, 0357, 3204		
																*0302, 0310, 0331, 0365, 0369N, 0373		
															32	*0307		
										27						*0318		
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.		

Lot No.: **01H**

Lot-specific information

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Length of spec.	195	270	190	235	180	195	215	100	85	120	215	235	90	100	100	95
PCR product(s)					210	550				280			195		215	205
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*0321N	1			4											15	
*0322	1		3	4											15	
*0324	1			4											15	
*0332				4							11					
*0341				4											15	
*0342	1		3	4											15	
*0350, 0366	1			4			7								15	
*0363	1			4										14	15	
*2307N, 2411N																
*2419	1															
*2424, 29010101-2903, 2905-2918, 2921, 2922, 3217, 6836, 6846															15	
*2444																
*2459									9							
*2492				4							11					
*250101, 250102, 2503-2510, 2605, 2616, 2620										10						
*2502										10				14		
*2511						6				10						
*260101-2602, 2604, 2608-2612, 2614, 2615, 2617, 2618, 2622-2629, 2634, 2637-2642										10						
*2603, 2606, 2621						6				10						
*260701, 260702, 2631																
*2613, 2633										10				14		
*2619														14		
*2630						6										
*2632										10						
*2635										10						
*2636						6				10						
*2904																w
*300101-300204, 3003, 3007, 3008, 3010-3013, 3015, 3016, 3019, 3020, 3022, 3024-3026, 3030-3034				3 4											15	
*300205			3 4													
*3004, 3006, 3029			3 4				7									
*3009, 3104			3 4												15	
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Lot No.: **01H**

Lot-specific information

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205	235	175	175	100	150	80	295	220	305	210	240	80	235	230	205	Length of spec.
		220	240		230		470		370	260	280		265	285	295	PCR product(s)
		265														
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.
							24									*0321N
																*0322
												29				*0324
																*0332
				21												*0341
														32		*0342
																*0350, 0366
																*0363
							24									*2307N, 2411N
																*2419
																*2424, 29010101-2903, 2905-2918, 2921, 2922, 3217, 6836, 6846
				w												*2444
																*2459
										27						*2492
				21												*250101, 250102, 2503-2510, 2605, 2616, 2620
																*2502
				21												*2511
			20	21												*260101-2602, 2604, 2608-2612, 2614, 2615, 2617, 2618, 2622-2629, 2634, 2637-2642
				21	22							29				*2603, 2606, 2621
			20	21												*260701, 260702, 2631
			20													*2613, 2633
			20													*2619
					22							29				*2630
			20	21					26							*2632
				21							28					*2635
			20	21												*2636
																*2904
17																*300101-300204, 3003, 3007, 3008, 3010-3013, 3015, 3016, 3019, 3020, 3022, 3024-3026, 3030-3034
17								25								*300205
															32	*3004, 3006, 3029
															32	*3009, 3104
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.

Lot No.: **01H**

Lot-specific information

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Length of spec.	195	270	190	235	180	195	215	100	85	120	215	235	90	100	100	95
PCR product(s)					210	550				280			195		215	205
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
*3014L			3												15	
*3017			3	4			7								15	
*3018	1		3	4											15	
*3023, 3027N			3	4											15	
*3103			3	4						10					15	
*3313										10						
*340101, 340102, 3405	1									10				w		
*3402, 3404, 3408	1		w	4						10				14	15	
*3403	1		3	4						10				14	15	
*3406, 6606	1									10				14	15	
*3407	1		w	4						10					15	
*3601, 3602, 3605				4			7									
*3604							7					12				
*4301													13			
*6601, 6604, 6607, 6609, 6610	1									10				14		
*6602, 6612, 680101-680204, 6806-6809, 6811N, 6812, 6816-6819, 6821-6823, 6825-6829, 6832-6835, 6837-6839, 6841, 6843-6845, 6847, 6848, 6901	1														15	
*6605										10						
*6608	1				5					10				14		
*6611										10				14		
*6815																
*6824, 6840	1															
*6842	1														15	
*8001																
<i>B*0818, B*7301</i>										10						
HLA-A allele ⁴																
Well No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Lot No.: **01H**

Lot-specific information

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														Length of spec.			
														PCR product(s)			
205	235	175	175	100	150	80	295	220	305	210	240	80	235	230	205		
		220	240		230		470		370	260	280		265	285	265		
		265													295		
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.	
17															32	*3014L	
																*3017	
17																*3018	
																*3023, 3027N	
				21										31	32	*3103	
				21					26					31		*3313	
												29				*340101, 340102, 3405	
												29				*3402, 3404, 3408	
												29				*3403	
												29				*3406, 6606	
												29				*3407	
				21												*3601, 3602, 3605	
				21												*3604	
		20		21												*4301	
												29				*6601, 6604, 6607, 6609, 6610	
																*6602, 6612, 680101-680204, 6806-6809, 6811N, 6812, 6816-6819, 6821-6823, 6825-6829, 6832-6835, 6837-6839, 6841, 6843-6845, 6847, 6848, 6901	
				21								29				*6605	
												29				*6608	
													30			*6611	
				22								29				*6815	
												29				*6824, 6840	
						w						29				*6842	
17				21				25		27						*8001	
																B*0818, B*7301	
																HLA-A allele ⁴	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Well No.	

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The two different control primer pairs give rise to either an internal positive control band of 1070 base pairs, for most wells, or a band of 800 base pairs, for some wells.

Well number 1 contains the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to help in the correct orientation of the HLA-A*11 subtyping. In addition, wells number 5, 8, 9, 11, 13, 15, 20, 23 and 28 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The nucleotide position, in the 1st, 2nd or 3rd exons or the 3rd intron, 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, in the 2nd, 3rd or 4th exons, 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.

⁴The A*1128 allele has been renamed to A*111502.

⁵The A*1113 and A*1154 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 16.

⁶The A*1132 and A*1151 alleles can be distinguished by the different sizes of the specific PCR products generated by primer mix 32.

⁷Primer mix 5: Specific PCR product of 180 bp in the A*1105 allele. Specific PCR product of 210 bp in the A*6608 allele.

Primer mix 6: Specific PCR product of 195 bp in the A*1107 and 1122 alleles. Specific PCR product of 550 bp in the A*1106 and 1118 and the A*0238, 9201, 9235, 9254, 2511, 2603, 2606, 2621, 2630 and 2636 alleles.

Primer mix 10: Specific PCR fragment of 120 bp in the A*1110, 0151, 250101-2511, 260101-2606, 2608-2618, 2620-2629, 2632-2634, 2636-2642, 340101-3408, 6601, 6604-6611, B*0818, B*7301 allele. Specific PCR fragment of 280 bp in the A*1143 and 1152 and the A*3103 alleles. Specific PCR fragment of 120 and 280 bp in the A*2635 and 3313 alleles.

Primer mix 13: Specific PCR fragment of 90 bp in the A*1134 allele. Specific PCR fragment of 195 bp in the A*1111 and A*4301 alleles.

Primer mix 15: Specific PCR fragment of 100 bp in the A*1112 and the A*0234^w-023503^w, 025601, 025602, 0262, 0278, 9203, 030102, 0302,0310, 0318, 0331, 0350, 0365, 0366, 0369, 0373, 2424, 29010101-2903, 2904^w, 2905-2918, 2921, 2922, 3217, 6602, 6612, 680101-680204, 6806-6814, 6816-6819, 6821-6823, 6825-6830, 6832-6839, 6841-6848, 6901 and 7413 alleles. Specific PCR fragment of 215 bp in the A*112402, 1125, 1131 and 1135 and the A*0106, 9256, 030103, 030110, 0308, 0329, 0330, 0334, 0336, 0341, 0362, 0363, 300201-300204, 3003, 3007, 3009, 3010 3012, 3013, 3022, 3027N, 3031-3034, 3103, 3104, 3204, 3402-3404, 3407 and 3408 alleles. Specific PCR fragment of 100 and 215 bp in the A*03010101-03010103, 030103-030109, 030111-031117, 0303N-0307, 0309, 0311N-0317, 0319-0328, 0333, 0335, 0337-0340, 0342-0349, 0351-0361, 0364, 0367, 0368N, 0370-0372, 0374, 300101, 300102, 3008, 301101, 301102, 3014L-3020, 3023-3026 and 3030 alleles. Both PCR fragments may not always be obtained.

Primer mix 16: Specific PCR fragment of 95 bp in the A*1113 allele. Specific PCR fragment of 205 bp in the A*1107 and 1154 alleles.

Primer mix 19: Specific PCR product of 175 bp in the A*1116, 1135 and 1142 and the A*9256 alleles. Specific PCR product of 220 bp in the A*1123 allele. Specific PCR product of 265 bp in the A*1146 allele.

Primer mix 20: Specific PCR fragment of 175 bp in the A*1142 allele. Specific PCR fragment of 240 bp in the A*1117, 1136 and 1140 and the A*0143, 260101-2602, 2604, 260701-2615, 2617-2619, 2622-2629, 2631-2634, 2636-2642 and 4301 alleles.

Primer mix 22: Specific PCR fragment of 150 bp in the A*1137 allele. Specific PCR fragment of 230 bp in the A*1106 and 1118 and the A*020501-020604, 020606-020609, 0208, 0210, 0214, 0221, 0228, 0241, 0244, 0251, 0254, 0257, 0261, 0272, 0279, 0284, 0291, 0299, 9206, 9208, 9222, 9226, 9227, 9237, 9242-9244, 9254, 9269, 9270, 9272, 9278-9280, 2603, 2606, 2621, 2630 and 6815 alleles.

Primer mix 24: Specific PCR fragment of 295 bp in the A*1148 and the A*0141 alleles. Specific PCR fragment of 470 bp in the A*1121N and the A*0104N, 0321N, 2307N and A*2411N alleles.

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Primer mix 26: Specific PCR fragment of 305 bp in the A*1126 and the A*0103, 2632, 3313, 3603 and A*7410 alleles. Specific PCR fragment of 370 bp in the A*1141 allele.

Primer mix 27: Specific PCR fragment of 210 bp in the A*1117 allele. Specific PCR fragment of 260 bp in the A*1127, 1138, 1139 and 1155 and the A*01010101-0102, 0104N, 0106-0119, 0121-0140, 0142, 0144-0151, 0318, 2492 and 8001 alleles. Specific PCR fragment of 210 and 260 bp in the A*0143 allele.

Primer mix 28: Specific PCR fragment of 240 bp in the A*111502 and 1149 alleles. Specific PCR fragment of 280 bp in the A*1152 and the A*2635 alleles.

Primer mix 30: Specific PCR fragment of 235 bp in the A* 1145 and the A*6611 alleles. Specific PCR fragment of 265 bp in the A* 1129 and 1155 alleles.

Primer mix 31: Specific PCR fragment of 230 bp in the A* 1149 allele. Specific PCR fragment of 285 bp in the A*1130 and 1143 and the A*3103 and 3313 alleles.

Primer mix 32: Specific PCR fragment of 205 bp in the A* 1131 and 1135 and the A*0121, 9256, 0307, 0342, 3004, 3006, 3009, 3017, 3029, 3103 and 3104 alleles. Specific PCR fragment of 265 bp in the A*1151 allele. Specific PCR fragment of 295 bp in the A*1132 and A*1150 alleles.

⁸Modified sequences as of allele database 3.7.0: A*11:02:01 corrected at position 899 and the A*11:53 allele shown to be identical to the correct sequence of A*11:02:01. As a consequence, the A*11:02:01-11:02:03 alleles are not amplified by primer mix 5.

'w', may be weakly amplified.

CELL LINE VALIDATION SHEET																			
HLA-A*11 SSP subtyping kit																			
			Prod. No.:	Well															
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				200736801	200736802	200853303	200736804	201070405	201070406	200736807	201070408	201070409	201070410	201070411	200736812	201070413	200736814	200853315	201070416
	IHWC cell line	A*																	
1	9001 SA	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*0201		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
3	9011 E4181324	*0101		-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-
4	9275 GU373	*3001		-	-	+	+	-	-	-	-	-	-	-	-	-	-	+	-
5	9009 KAS011	*0101		-	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-
6	9353 SM	*0201	*2603	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-
7	9020 QBL	*2601		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
8	9025 DEU	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*2601		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
10	9107 LKT3	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902		+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
12	9052 DBB	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*2402		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
16	9037 SWEIG007	*2902		+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
17	9282 CTM3953540	*0301	*8001	+	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-
18	9257 32367	*3303	*7401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*0217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*0201	*3401	+	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-
24	9035 JBUSH	*3201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*3301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*0205		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*2410	*2901	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
28	9320 BEL5GB	*0201	*2902	+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
29	9050 MOU	*2902		+	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
30	9021 RSH	*3001	*6802	+	-	+	+	-	-	-	-	-	-	-	-	-	-	+	-
31	9019 DUCAF	*3002		-	-	+	+	-	-	-	-	-	-	-	-	-	-	+	-
32	9297 HAG	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*3201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*0206	*1101	+	-	-	-	-	-	-	-	-	-	+	+	-	+	-	-
37	9065 HHKB	*0301		+	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-
38	9099 LZL	*0217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*0101	*0301	+	-	-	+	-	-	+	-	-	-	+	-	-	-	+	-
40	9134 WHONP199	*0207	*3001	-	-	+	+	-	-	-	-	-	-	-	-	-	-	+	-
41	9055 H0301	*0301		+	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-
42	9066 TAB089	*0207		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*0207		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*6601		+	-	-	-	-	-	-	-	-	+	-	-	-	+	-	-
45	9239 SHJO	*2301	*2402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*0301		+	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-
47	9045 TUBO	*0216	*0301	+	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-
48	9303 TER-ND	*0201	*1101	+	-	-	-	-	-	-	-	-	-	+	+	-	+	-	-

CELL LINE VALIDATION SHEET																				
HLA-A*11 SSP subtyping kit																				
			Prod. No.:	Well																
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
				200736817	201070418	201070419	201070420	200736821	201070422	200736823	201070424	201070425	201070426	201070427	201070428	201070429	201070430	201070431	201070432	
	IHWC cell line	A*																		
1	9001 SA	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280 LK707	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011 E4181324	*0101		-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-
4	9275 GU373	*3001		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009 KAS011	*0101		-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-
6	9353 SM	*0201	*2603	-	-	-	-	+	+	-	-	-	-	-	-	+	-	-	-	-
7	9020 QBL	*2601		-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
8	9025 DEU	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*2601		-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953540	*0301	*8001	+	-	-	-	+	-	-	-	+	-	+	-	-	-	-	-	-
18	9257 32367	*3303	*7401	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
19	9038 BM16	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*0217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124 IHL	*0201	*3401	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
24	9035 JBUSH	*3201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*3301		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
26	9285 WT49	*0205		-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
27	9191 CH1007	*2410	*2901	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320 BEL5GB	*0201	*2902	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050 MOU	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021 RSH	*3001	*6802	+	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
31	9019 DUCAF	*3002		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297 HAG	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098 MT14B	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302 SSTO	*3201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024 KT17	*0206	*1101	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
37	9065 HHKB	*0301		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
38	9099 LZL	*0217		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315 CML	*0101	*0301	-	-	-	-	+	-	-	-	-	-	+	-	-	-	-	-	-
40	9134 WHONP199	*0207	*3001	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055 H0301	*0301		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
42	9066 TAB089	*0207		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*0206	*0207	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*6601		-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-
45	9239 SHJO	*2301	*2402	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*0301		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
47	9045 TUBO	*0216	*0301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*0201	*1101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CERTIFICATE OF ANALYSIS**Olerup SSP® HLA-A*11 SSP****Product number:** 101.416-12u/04u – without *Taq* pol.**Lot number:** 01H**Expiry date:** 2012-April-01**Number of tests:** 12 tests – Product No. 101.416-12u

4 tests – Product No. 101.416-04u

Number of wells per test: 32**Well specifications:**

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2007-368-01	13	2010-704-13	25	2010-704-25
2	2007-368-02	14	2007-368-14	26	2010-704-26
3	2008-533-03	15	2008-533-15	27	2010-704-27
4	2007-368-04	16	2010-704-16	28	2010-704-28
5	2010-704-05	17	2007-368-17	29	2010-704-29
6	2010-704-06	18	2010-704-18	30	2010-704-30
7	2007-368-07	19	2010-704-19	31	2010-704-31
8	2010-704-08	20	2010-704-20	32	2010-704-32
9	2010-704-09	21	2007-368-21		
10	2010-704-10	22	2010-704-22		
11	2010-704-11	23	2007-368-23		
12	2007-368-12	24	2010-704-24		

The specificity of each primer solution of the kit has been tested against 48 well characterized cell line DNAs.

No DNAs carrying the alleles to be amplified by primer solutions 5, 8, 9, 13, 16, 19, 23, 26, 28, 30 and 31 were available. The specificities of the primers in primer solutions 5, 9, 13, 23, 26, 28 and 31 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solution 19 it was only possible to test the 5'-primers, the 3'-primers were not possible to test. In primer solutions 8 and 16 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solutions 6, 10, 13, 20, 28 and 31 one or two of the 5'-primers were not possible to test. In primer solutions 5, 20, 22, 24, 26 to 28 and 32 one or two of the 3'-primers were not possible to test. Additional primers in primer solutions 3, 10, 18, 20, 24, 25, 27 and 32 were tested by separately adding one additional 5'-primer or one additional 3'-primer.

Results: No false positive or false negative amplifications were obtained.

Date of approval: 2012-January-24

Approved by:

Production Quality Control

Lot No.: **01H**

Lot-specific information

www.olerup-ssp.com

Declaration of Conformity

Product name: *Olerup* SSP® HLA-A*11**Product number:** 101.416-12u/04u**Lot number:** 01H**Intended use:** HLA-A*11 high resolution histocompatibility testing**Manufacturer:** *Olerup* SSP AB
Franzengatan 5
SE-112 51 Stockholm, Sweden
Phone: +46-8-717 88 27
Fax: +46-8-717 88 18

We, *Olerup* SSP AB, hereby declare that this product, to which this Declaration of Conformity relates is in conformity with the following Standard(s) and other normative document(s) ISO 9001:2008 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, conformity assessed using Annex IV, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, Franzengatan 5, SE-112 51 Stockholm, Sweden.

Notified Body: Lloyd's Register Quality Assurance Limited, Hiramford, Middlemarch Office Village, Siskin Drive, Coventry CV3 4FJ, United Kingdom. (Notified Body number: 0088.)

Stockholm, Sweden
2011-January-24

Ann-Cathrin Jareman
Head of QA and Regulatory Affairs

Lot No.: **01H**

Lot-specific information

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