

Olerup SSP[®] HLA-A*02

Product number:	101.412-24/04 – including <i>Taq</i> pol. 101.412-24u/04u – without <i>Taq</i> pol.
Lot number:	91E
Expiry date:	2010-July-01
Number of tests:	24 tests – Product No. 101.412-24 4 tests – Product No. 101.412-04
Number of wells per test:	91
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. 91E.

CHANGES COMPARED TO THE PREVIOUS *OLERUP SSP*[®] HLA-A*02 Lot

The HLA-A*02 specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP*[®] HLA-A*02 lot was made (Lot No. Y41).

Six wells have been added to the HLA-A*02 kit,
wells **86 to 91**.

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

Well	5'-primer	3'-primer	rationale
23	-	Exchanged	Decreased primer dimer formation tendency.
27	Modified	-	Increased specificity of specific primer pair.
31	Modified	-	Increased yield of specific PCR product.
55	Removed	Removed	Primer pair moved to well 91.
64	Modified	-	Increased specificity of specific primer pair.
69	-	Modified	Increased specificity of specific primer pair.
86	New	New	New primer pair for the A*9235 allele.
87	New	New	New primer pair for the A*9238 allele.
88	New	New	New primer pair for the A*9239 allele.
89	New	New	New primer pair for the A*9240 allele.
90	New	New	New primer pair for the A*9241 allele.
91	New	New	Primer pair from well 55.

Change in revision R01 compared to R00:

1. Only the A*9227 allele is amplified by primer mix 81.

PRODUCT DESCRIPTION

HLA-A*02 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the the A*0201 to A*9241 alleles.

PLATE LAYOUT

Each test consists of 91 PCR reactions in a 96 well cut PCR plate. Wells 92 to 96 are empty.

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

The 96 well cut PCR plate is marked with 'HLA-A*02'.

Well No. 1 is marked with the Lot No. '92E'.

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

INTERPRETATION

The interpretation of HLA-A*02 SSP subtypings will be influenced by two A*01, most A*03, three A*11, most A*23, most A*24, nine A*26, the A*2907, most A*30, the A*3208, three A*33, the A*3408, the A*68, the A*6901, two A*74 and the A*8001 alleles when present on the other haplotype.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*02 alleles, i.e. **A*0201 to A*9241 alleles**, recognized by the HLA Nomenclature Committee in April 2008¹ will give rise to unique amplification patterns by the primers in the HLA-A*02 subtyping kit.

The HLA-A*02 subtyping kit cannot distinguish the A*02010101, A*02010103 to A*020102, the A*020104 to A*020115 alleles and the *020118 to A*020119, the A*020601 to A*020606 alleles, the A*021701 and A*021702 alleles, the A*022001 and A*022002 alleles and the A*027401 and A*027402 alleles.

¹HLA-A alleles listed on the IMGT/HLA web page 2008-April-08, release 2.21.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

The HLA-A*02 alleles generate 143 different amplification patterns¹ that can be combined in 10 296 homozygous and heterozygous combinations. 2 972 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 8, 11, 12, 14, 15, 17, 23, 26, 27, 31, 32, 34 to 37, 40, 43, 45 and 46 have not been considered in these calculations.

+++++++ +-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0225 =	0225,9202					
+++++++ -+-+-----	-----	---	0202,0299 =	0299,9202					
-----	-----	---	0202,0226 =	0226,9202					
+++++++ -+-----	-----	---	0202,0226 =	0226,9202					
-----	-----	---	0204,0205 =	0205,0289					
+++++++ -+++-----	-----	---	0204,0205 =	0205,0289					
-----	-----	---	0202,9208 =	9202,9208					
+++++++ -++-----	-----	---	0202,9208 =	9202,9208					
-----	-----	---	0202,0257 =	0257,9202					
+++++++ --+-----	-----	---	0202,0257 =	0257,9202					
-----	-----	---	0202,9210 =	9202,9210					
+++++++ -+-----	-----	---	0202,9210 =	9202,9210					
-----	-----	---	0202,0217 =	0217,9202					
+++++++ -+-----	-----	---	0202,0217 =	0217,9202					
-----	-----	---	0204,0247 =	0247,0289					
+++++++ -+-----	-----	---	0204,0247 =	0247,0289					
-----	-----	---	0204,0263 =	0263,0289					
+++++++ -+-----	-----	---	0204,0263 =	0263,0289					
-----	-----	---	0204,9215 =	0289,9215					
+++++++ -+-----	-----	---	0204,9215 =	0289,9215					
-----	-----	---	0202,0204 =	0202,0289 =	0204,9202 =	0289,9202			
+++++++ -++-----	-----	---	0202,0204 =	0202,0289 =	0204,9202 =	0289,9202			
-----	-----	---	0205,0220 =	0208,0232N					
+++++++ -++-----	-----	---	0205,0220 =	0208,0232N					
-----	-----	---	0205,0270 =	0247,0284					
+++++++ -++-----	-----	---	0205,0270 =	0247,0284					
-----	-----	---	0205,0260 =	0205,0286					
+++++++ -++-----	-----	---	0205,0260 =	0205,0286					
-----	-----	---	0205,0258 =	0214,9202					
+++++++ -++-----	-----	---	0205,0258 =	0214,9202					
-----	-----	---	0201,0205 =	0202,0284 =	0205,0232N =	0205,0275 =			
+++++++ -++-----	-----	---	0201,0205 =	0202,0284 =	0205,0232N =	0205,0275 =			
-----	-----	---	0205,0285 =	0284,9202					
+++++++ -++-----	-----	---	0205,0285 =	0284,9202					
-----	-----	---	0202,0291 =	0291,9202					
+++++++ -++-----	-----	---	0202,0291 =	0291,9202					
-----	-----	---	0202,0221 =	0221,9202					
+++++++ -++-----	-----	---	0202,0221 =	0221,9202					
-----	-----	---	0202,0210 =	0210,9202					
+++++++ -++-----	-----	---	0202,0210 =	0210,9202					
-----	-----	---	0202,0228 =	0228,9202					
+++++++ -++-----	-----	---	0202,0228 =	0228,9202					
-----	-----	---	0206,0247 =	0247,0285					
+++++++ -++-----	-----	---	0206,0247 =	0247,0285					
-----	-----	---	0202,0251 =	0251,9202					
+++++++ -++-----	-----	---	0202,0251 =	0251,9202					
-----	-----	---	0202,0241 =	0241,9202					
+++++++ -++-----	-----	---	0202,0241 =	0241,9202					

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+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0279	=	0279,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0261	=	0261,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0263	=	0263,0285	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0272	=	0272,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,9206	=	9202,9206	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,9215	=	0285,9215	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,9226	=	9202,9226	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,9227	=	9202,9227	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0206	=	0202,0285 = 0206,9202 = 0285,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,9212	=	9202,9212	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0215N	=	0215N,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,9230	=	9202,9230	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0218	=	0218,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0207	=	0207,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0263,0287	=	0263,0296	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0287,9215	=	0296,9215	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0287	=	0202,0296 = 0287,9202 = 0296,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0273	=	0273,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0293	=	0293,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0209	=	0209,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0239	=	0239,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0283N	=	0283N,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,9228	=	9202,9228	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0269	=	0269,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0211	=	0211,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0229	=	0229,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0236	=	0236,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0231	=	0231,9202	-----	-----	-----	-----
+++++++	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,9231	=	9202,9231	-----	-----	-----	-----

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+++++ +----- +----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0216 = 0216,9202
+++++ +----- +----- -++----- +----- +----- +----- +-----
----- +----- --- 0202,0252 = 0252,9202
+++++ +----- +----- -+----- +----- +----- +----- +-----
----- +----- --- 0202,0233 = 0233,9202
+++++ +----- +----- -+----- +----- +----- -+----- -+----- +-----
----- +----- --- 0202,9214 = 9202,9214
+++++ +----- +----- -+----- +----- +----- +----- +-----
----- +----- --- 0202,0295 = 0295,9202
+++++ +----- +----- -++-+ -+----- ++----- +----- +----- +-----
----- +----- --- 0202,0256 = 0256,9202
+++++ +----- +----- -++-+ -+----- +----- +----- +----- +-----
----- +----- --- 0202,0278 = 0278,9202
+++++ +----- +----- -+----- -+----- ++----- +----- +----- +-----
----- +----- --- 0202,0262 = 0262,9202
+++++ +----- +----- -+----- +----- +----- +----- +-----
----- +----- --- 0202,0220 = 0220,9202 = 0255,9202
+++++ +----- +----- -++-+ +----- +----- +----- +----- +-----
----- +----- --- 0202,0245 = 0245,9202
+++++ +----- +----- -++-+ +----- +----- +----- +----- +-----
----- +----- --- 0202,0246 = 0246,0247 = 0246,9202 = 0247,0292
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0292 = 0292,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0243N = 0243N,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0282N = 0282N,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0247,0260 = 0247,0286
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0201,0247 = 020103,0247 = 0202,0270 = 0232N,0247 =
0247,0270 = 0247,0275 = 0270,9202
+++++ +----- +----- -+----- ++----- +----- +----- +----- +-----
----- +----- --- 0202,023501 = 023501,9202 = 023502,9202
+++++ +----- +----- -+----- ++----- +----- +----- +----- +-----
----- +----- --- 0202,0234 = 0234,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0288N = 0288N,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0240 = 0240,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0277 = 0277,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0294N = 0294N,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,9201 = 9201,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0268 = 0268,9202
+++++ +----- +----- -+----- +----- +----- -+----- +----- +-----
----- +----- --- 0202,0280 = 0280,9202
+++++ +----- +----- -+----- +----- +----- +----- +----- +-----
----- +----- --- 0202,0267 = 0267,9202
+++++ +----- +----- -+----- ++----- +----- +----- +----- +-----
----- +----- --- 0202,023503 = 023503,9202
+++++ +----- +----- -+----- ++----- +----- +----- +----- +-----
----- +----- --- 0202,0271 = 0271,9202
+++++ +----- +----- -+----- ++----- +----- +----- +----- +-----
----- +----- --- 0202,0259 = 0259,9202

101.412-24/04 – including *Taq* polymerase
101.412-24u/04u – without *Taq* polymerase

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+++++++	-----	-----	-----	-----	+--+++	-----	-----	-----
-----	-----	---	0260,0263	=	0263,0286	-----	-----	-----
+++++++	-----	-----	-----	-----	+--+---	-----	-----	-----
-----	-----	---	0260,9215	=	0286,9215	-----	-----	-----
+++++++	-----	-----	-----	-----	+--+---	-----	-----	-----
-----	-----	---	0202,0260	=	0202,0286 = 0260,9202 = 0286,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+--+---	-----	-----	-----
-----	-----	---	0202,0266	=	0266,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0253N,0263	=	0263,0281	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0201,0263	=	020103,0263 = 0232N,0263 = 0263,0275	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,0264	=	0264,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	02010102L,0202	=	02010102L,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,0276	=	0276,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,0258	=	0258,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,0274	=	0274,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,0230	=	0230,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0253N,9215	=	0281,9215	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9224	=	9202,9224	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,0253N	=	0202,0281 = 0253N,9202 = 0281,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,0242	=	0242,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,0290	=	0290,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,0297	=	0297,9202	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9205	=	9202,9205	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9207	=	9202,9207	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9209	=	9202,9209	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9211	=	9202,9211	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9213N	=	9202,9213N	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0201,9215	=	020103,9215 = 0232N,9215 = 0275,9215	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9216	=	9202,9216	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9218	=	9202,9218	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9219	=	9202,9219	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9220	=	9202,9220	-----	-----	-----
+++++++	-----	-----	-----	-----	+-----+	-----	-----	-----
-----	-----	---	0202,9221	=	9202,9221	-----	-----	-----

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+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0202,9223 = 9202,9223
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0202,9225N = 9202,9225N
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0202,9232 = 9202,9232
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0202,9233 = 9202,9233
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0202,9234 = 9202,9234
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0202,9238 = 9202,9238
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0202,9239 = 9202,9239
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0202,9240 = 9202,9240
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0202,9241 = 9202,9241
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0201,0202 = 0201,9202 = 020103,0202 = 020103,9202 =
020117,9202 = 0202,0232N = 0202,0275 = 0232N,9202 = 0275,9202
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0204,0208 = 0208,0289
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0208,0234 = 0208,0262
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0208,0260 = 0208,0286
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0201,0208 = 0208,0220 = 0208,0275 = 0208,0285
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0217,9217 = 9210,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0204,9217 = 0289,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0203,0204 = 0203,0289
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0206,9217 = 0228,9217 = 0241,9217 = 0285,9217 =
0299,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0203,0206 = 0203,0285 = 0203,0299
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0287,9217 = 0296,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0203,0287 = 0203,0296
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0233,9217 = 0252,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0220,9217 = 0255,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 023501,9217 = 023502,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0260,9217 = 0286,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0253N,9217 = 0281,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0201,9217 = 020103,9217 = 020117,9217 = 0225,9217 =
0226,9217 = 0271,9217 = 0280,9217 = 0295,9217
+++++++ +-----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- 0203,0220 = 0203,0255
    
```

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+++++--- ++----- ----- -+----- +-+----- ----- -+----- -----
----- ----- --- 0203,023501 = 0203,023502
+++++--- ++----- ----- -+----- +-+----- ----- -+----- -----
----- ----- --- 0203,0260 = 0203,0286
+++++--- ++----- ----- -+----- +-+----- ----- -+----- -----
----- ----- --- 0203,0253N = 0203,0281
+++++--- ++----- ----- -+----- +-+----- ----- -+----- -----
0201,0203 = 020103,0203 = 020117,0203 = 0203,0225 =
0203,0226 = 0203,0271
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0217,9222 = 9210,9222
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0204,9222 = 0289,9222
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0204,9236 = 0289,9236
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0217,0250 = 0250,9210
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0204,0249 = 0249,0289
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0204,0250 = 0250,0289
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0204,9204 = 0289,9204
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0204,0222 = 0222,0289
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0221,0222 = 0285,9236
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0206,0249 = 0249,0285
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0233,9222 = 0252,9222
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0260,9222 = 0286,9222
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0201,9222 = 0209,9222 = 0273,9222 = 0285,9222 =
0293,9222 = 0295,9222
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0206,0250 = 0228,0250 = 0250,0285
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0206,9204 = 0285,9204
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0206,0222 = 0222,0285
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0249,0287 = 0249,0296
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0250,0287 = 0250,0296
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0220,9236 = 0255,9236
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0222,9229 = 0246,9236
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0243N,9236 = 0287,9204 = 0296,9204
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0260,9236 = 0286,9236
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0201,9236 = 020117,9236 = 0222,0287 = 0222,0296 =
0271,9236 = 0296,9236
+++++--- -++-----+ +-----+ -+-----+ -----+----- -++-----+ -----
-----+----- -++-----+ -++-----+ 0220,0249 = 0249,0255

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+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 023501,0249 = 023502,0249
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0249,0260 = 0249,0286
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0249,0253N = 0249,0281
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0201,0249 = 020103,0249 = 020117,0249 = 0209,0249 =
0249,0271
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0233,0250 = 0250,0252
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0222,0273 = 0250,0271
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0250,0260 = 0250,0286
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0250,0253N = 0250,0281
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0201,0250 = 020103,0250 = 0209,0250 = 0250,0273 =
0250,0293 = 0250,0295
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0220,9204 = 0255,9204
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0220,0222 = 0222,0255
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 023501,9204 = 023502,9204
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0260,9204 = 0286,9204
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0253N,9204 = 0281,9204
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0201,9204 = 020103,9204 = 020117,9204 = 0222,0243N =
0243N,9204 = 0271,9204
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0222,023501 = 0222,023502
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0222,0260 = 0222,0286
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0222,0253N = 0222,0281
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0201,0222 = 020103,0222 = 020117,0222 = 0222,0271
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0204,0214 = 0214,0289
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0214,0224 = 0214,0294N
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0214,0260 = 0214,0286
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0201,0214 = 0214,0232N = 0214,0258 = 0214,0275 =
0214,0285
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0204,0232N = 0232N,0289
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0206,0232N = 0232N,0285
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0232N,0287 = 0232N,0296
+++++--- +-----+ ---+----- +----- +----- +----- +-----
----- +----- +----- 0220,0232N = 0232N,0255

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+++++--+	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0232N,023501 = 0232N,023502	-----	-----	-----	-----	-----	-----
+++++--+	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0232N = 0232N,0294N	-----	-----	-----	-----	-----	-----
+++++--+	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0232N,0260 = 0232N,0286	-----	-----	-----	-----	-----	-----
+++++--+	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0232N,0253N = 0232N,0281	-----	-----	-----	-----	-----	-----
+++++--+	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,0232N = 020103,0232N = 020117,0232N = 0232N,0232N	-----	-----	-----	-----	-----	-----
+++++---	+++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0238 = 0238,0289	-----	-----	-----	-----	-----	-----
+++++---	++-+-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0238 = 0238,0285 = 0238,0299	-----	-----	-----	-----	-----	-----
+++++---	++-----+	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0238,0287 = 0238,0296	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0238 = 0238,0255	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0238 = 023502,0238	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0238,0260 = 0238,0286	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0238,0253N = 0238,0281	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,0238 = 020103,0238 = 020117,0238 = 0225,0238 =	-----	-----	-----	-----	-----	-----
0226,0238	-----	---	= 0238,0268 = 0238,9201	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0225 = 0225,0289	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0225 = 0225,0285	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0225,0287 = 0225,0296	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0225 = 0225,0255	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0225,023501 = 0225,023502	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0225 = 0225,0294N	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0225,0260 = 0225,0286	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0225,0253N = 0225,0281	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,0225 = 020103,0225 = 020117,0225 = 0225,0225	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,0299 = 0226,9208	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0299 = 0289,0299	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0213 = 0213,0289	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0226 = 0226,0289	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0207,0299 = 0226,0291	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0226 = 0296,0299	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0226,0254 = 0237,0299	-----	-----	-----	-----	-----	-----

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+++++---	-++-+---	---+	-----	-----	-----	-----	-----	-----	
-----	-----	---	0206,0213	=	0212,0299	=	0213,0285	=	0213,0299
+++++---	-++-+---	-----	---	-----	-----	-----	-----	-----	-----
-----	-----	---	0226,0228	=	0295,0299				
+++++---	-++-+---	-----	---	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0299	=	0255,0299				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0226,0251	=	0240,0299				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0224,0299	=	0226,9237	=	0294N,0299		
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0226,0279	=	0260,0299	=	0286,0299		
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0226,0261	=	0266,0299				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0226,0272	=	0264,0299				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0201,0299	=	020117,0299	=	0206,0226	=	0226,0285 =
0226,0299	=	0285,0299							
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0213,0287	=	0213,0296				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0226,0287	=	0226,0296				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0213,0236	=	0226,0237				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0213,0220	=	0213,0255				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0213,023501	=	0213,023502				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0213,0260	=	0213,0286				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0213,0253N	=	0213,0281				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0201,0213	=	020103,0213	=	020117,0213	=	0212,0226 =
0213,0226									
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0220,0226	=	0226,0255				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0226,023501	=	0226,023502				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0224,0226	=	0226,0294N				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0226,0260	=	0226,0286				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0226,0253N	=	0226,0281				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0201,0226	=	020103,0226	=	020117,0226	=	0226,0226
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0204,0284	=	0284,0289				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0204,0291	=	0289,0291				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0217,0221	=	0296,9208				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0204,0221	=	0221,0289				
+++++---	-++-+---	-----	---	-----	---	-----	---	-----	---
-----	-----	---	0217,0254	=	0237,9208				

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+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0206,9210 = 0217,0228 = 0228,9210 = 0285,9210 =
0295,9208
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0220,9208 = 0255,9208
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0217,0251 = 0240,9208
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0217,9237 = 0224,9208 = 0294N,9208
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0217,0261 = 0266,9208
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0217,0272 = 0264,9208
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0201,9208 = 020117,9208 = 0206,0217 = 0217,0285 =
0231,9208 = 0258,9208 = 0275,9208 = 0283N,9208 = 0285,9208 = 0289,9208
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0210 = 0210,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0254 = 0254,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0228 = 0228,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0220,0257 = 0255,0257
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0251 = 0251,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0224,0257 = 0257,0294N
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0206,0265 = 0265,0285
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,9237 = 0289,9237
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0241 = 0241,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0201,0257 = 020117,0257 = 0257,0258 = 0257,0275 =
0257,0285 = 0257,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0261 = 0261,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0272 = 0272,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,9206 = 0289,9206
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,9226 = 0289,9226
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,9227 = 0289,9227
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0206 = 0204,0285 = 0206,0289 = 0285,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,9212 = 0289,9212
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0215N = 0215N,0289
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,9203 = 0289,9203
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,9230 = 0289,9230
+++++--- --++---+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+ -+-----+

----- 0204,0218 = 0218,0289

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+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0207 =	0207,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9229 =	0289,9229	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0265,0287 =	0265,0296	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0287 =	0204,0296 =	0287,0289 =	0289,0296	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,0273 =	0273,9210	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,0293 =	0293,9210	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0273 =	0273,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0293 =	0289,0293	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0209 =	0209,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,0252 =	0252,9210	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,9210 =	0255,9210	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9210 =	0294N,9210	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,9214 =	9210,9214	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,9210 =	020103,9210 =	020117,9210 =	0217,0295 =	-----	-----	-----
0231,9210 =	0258,9210 =	0275,9210 =	0283N,9210 =	0289,9210 =	0295,9210	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,0220 =	0217,0255	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,0224 =	0217,0294N	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,0217 =	020103,0217 =	020117,0217 =	0217,0231 =	-----	-----	-----
0217,0258 =	0217,0275 =	0217,0283N =	0217,0289	-----	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0283N =	0283N,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9228 =	0289,9228	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0269 =	0269,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0211 =	0211,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0229 =	0229,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0237 =	0237,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0227 =	0227,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0212 =	0212,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0236 =	0236,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0231 =	0231,0289	-----	-----	-----	-----	-----
+++++--- --+---+--	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9231 =	0289,9231	-----	-----	-----	-----	-----

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+++++--- --+----- ----- +----- -----
----- +----- --- 0204,0216 = 0216,0289
+++++--- --+----- ----- -++----- -----
----- ----- --- 0204,0252 = 0252,0289
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0233 = 0233,0289
+++++--- --+----- ----- -+----- ----- -+----- -+-----
----- ----- --- 0204,9214 = 0289,9214
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0295 = 0289,0295
+++++--- --+----- ----- -++-+ -+----- -+-----
----- ----- --- 0204,0256 = 0256,0289
+++++--- --+----- ----- -++-+ -+----- -+-----
----- ----- --- 0204,0278 = 0278,0289
+++++--- --+----- ----- -+----- -+----- -+-----
----- ----- --- 0204,0262 = 0262,0289
+++++--- --+----- ----- -+----- -+----- -+-----
----- ----- --- 0220,0265 = 0255,0265
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0220 = 0204,0255 = 0220,0289 = 0255,0289
+++++--- --+----- ----- -++-+ -+----- -+-----
----- ----- --- 0204,0245 = 0245,0289
+++++--- --+----- ----- -++-+ -+----- -+-----
----- ----- --- 0204,0248 = 0248,0289
+++++--- --+----- ----- -++-+ -+----- -+-----
----- ----- --- 0204,0246 = 0246,0289
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0292 = 0289,0292
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0243N = 0243N,0289
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0282N = 0282N,0289
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0270 = 0270,0289
+++++--- --+----- ----- -++-+ -+----- -+-----
----- ----- --- 023501,0265 = 023502,0265
+++++--- --+----- ----- -+----- -+----- -+-----
----- ----- --- 0204,023501 = 0204,023502 = 023501,0289 = 023502,0289
+++++--- --+----- ----- -+----- -+----- -+-----
----- ----- --- 0204,0234 = 0234,0289
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0288N = 0288N,0289
+++++--- --+----- ----- -+----- -+----- -+-----
----- ----- --- 0204,0240 = 0240,0289
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0277 = 0277,0289
+++++--- --+----- ----- -+----- -+----- -+-----
----- ----- --- 0253N,0265 = 0265,0281
+++++--- --+----- ----- -+----- -+----- -+-----
----- ----- --- 0201,0265 = 020103,0265 = 020117,0265 = 0265,0289 =
0265,0294N
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0224 = 0204,0294N = 0224,0289 = 0289,0294N
+++++--- --+----- ----- -+----- -+----- -+-----
----- ----- --- 0204,9201 = 0289,9201
+++++--- --+----- ----- -+----- -----
----- ----- --- 0204,0268 = 0268,0289
+++++--- --+----- ----- -+----- -+----- -+-----
----- ----- --- 0204,0280 = 0280,0289

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+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0267 = 0267,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0258 = 0258,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0275 = 0275,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,023503 = 023503,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0271 = 0271,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0259 = 0259,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0260 = 0260,0289 = 0286,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0266 = 0266,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0264 = 0264,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	02010102L,0204 = 02010102L,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0276 = 0276,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0274 = 0274,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0230 = 0230,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9224 = 0289,9224	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0253N = 0204,0281 = 0253N,0289 = 0281,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0242 = 0242,0289	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0290 = 0289,0290	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,0297 = 0289,0297	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9205 = 0289,9205	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9207 = 0289,9207	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9209 = 0289,9209	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9211 = 0289,9211	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9213N = 0289,9213N	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9216 = 0289,9216	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9218 = 0289,9218	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9219 = 0289,9219	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9220 = 0289,9220	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9221 = 0289,9221	-----	-----	-----	-----	-----	-----
+++++--- --+-----	-----+-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9223 = 0289,9223	-----	-----	-----	-----	-----	-----

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+++++--- --+-----
-----+- -----
0204,9225N = 0289,9225N
+++++--- --+-----
-----+- -----
0204,9232 = 0289,9232
+++++--- --+-----
-----+- -----
0204,9233 = 0289,9233
+++++--- --+-----
-----+- -----
0204,9234 = 0289,9234
+++++--- --+-----
-----+- -----
0204,9238 = 0289,9238
+++++--- --+-----
-----+- -----
0204,9239 = 0289,9239
+++++--- --+-----
-----+- -----
0204,9240 = 0289,9240
+++++--- --+-----
-----+- -----
0204,9241 = 0289,9241
+++++--- --+-----
-----+- -----
0201,0204 = 0201,0289 = 020103,0204 = 020103,0289 =
020117,0204 = 020117,0289 = 0204,0289 = 0289,0289
+++++--- --+-----
-----+- -----
0220,0284 = 0255,0284
+++++--- --+-----
-----+- -----
0224,0284 = 0284,0294N
+++++--- --+-----
-----+- -----
0260,0284 = 0284,0286
+++++--- --+-----
-----+- -----
0201,0284 = 020117,0284 = 0284,0285
+++++--- --+-----
-----+- -----
0207,0221 = 0285,9212 = 0291,0296
+++++--- --+-----
-----+- -----
0207,0254 = 0237,0291
+++++--- --+-----
-----+- -----
0206,0215N = 0215N,0285 = 0215N,0291
+++++--- --+-----
-----+- -----
0207,0228 = 0291,0295
+++++--- --+-----
-----+- -----
0206,9203 = 0256,0291 = 0285,9203 = 0291,9203
+++++--- --+-----
-----+- -----
0220,0291 = 0255,0291
+++++--- --+-----
-----+- -----
0206,9230 = 0207,0251 = 0240,0291 = 0251,9230 =
0285,9230 = 0291,9230
+++++--- --+-----
-----+- -----
0207,9237 = 0224,0291 = 0291,0294N
+++++--- --+-----
-----+- -----
0206,0218 = 0218,0285 = 0218,0291
+++++--- --+-----
-----+- -----
0207,0279 = 0260,0291 = 0286,0291
+++++--- --+-----
-----+- -----
0207,0261 = 0266,0291
+++++--- --+-----
-----+- -----
0207,0272 = 0264,0291
+++++--- --+-----
-----+- -----
0201,0291 = 020117,0291 = 0206,0207 = 0207,0285 =
0207,0291 = 0285,0291
+++++--- --+-----
-----+- -----
0221,0237 = 0254,0296
+++++--- --+-----
-----+- -----
0221,0295 = 0228,0296

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+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0220,0221 = 0221,0255
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0221,0246 = 0285,9229
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0221,0240 = 0251,0296
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0221,0224 = 0221,0294N = 0296,9237
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0221,0260 = 0221,0286 = 0279,0296
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0221,0266 = 0261,0296
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0221,0264 = 0272,0296
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0201,0221 = 020117,0221 = 0206,0296 = 0221,0285 =
0221,0296 = 0285,0287 = 0285,0296
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- --+ 0206,0273 = 0228,0273 = 0273,0285
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- --+ 0206,0293 = 0228,0293 = 0285,0293
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0206,0209 = 0209,0285
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0210,0220 = 0210,0255
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0210,0224 = 0210,0294N
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0210,0260 = 0210,0286 = 0228,0239
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0201,0210 = 020117,0210 = 0210,0283N = 0210,0285 =
0210,0295 = 0228,0283N
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0206,0239 = 0239,0285 = 0279,0283N
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0206,0283N = 0283N,0285
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0206,0229 = 0229,0285
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0228,0237 = 0254,0295
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0220,0254 = 0254,0255
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0237,0251 = 0240,0254
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0206,0219 = 0219,0285 = 0236,0244
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0237,0279 = 0254,0260 = 0254,0286
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0237,0261 = 0254,0266
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0237,0272 = 0254,0264
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0201,0254 = 020117,0254 = 0206,0237 = 0236,0254 =
0237,0285 = 0254,0285
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0206,0227 = 0227,0285
+++++--- +--+--+ ---+-----+-----+-----+-----+-----
-----+-----+----- 0220,0244 = 0244,0255



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+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- 0201,0244 = 020117,0244 = 0244,0260 = 0244,0285 =
0244,9218
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- 0206,0212 = 0212,0285
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- 0206,0236 = 0236,0285
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- 0206,0231 = 0231,0285
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- ++----- 0206,9231 = 0285,9231 = 9227,9231
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- +----- 0206,0216 = 0216,0285 = 0216,9227
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -++----- 0206,0252 = 0228,0233 = 0228,0252 = 0252,0285
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0206,0233 = 0233,0285
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- ++----- 0220,0228 = 0228,0255
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- --+----- 0228,0240 = 0251,0295
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0224,0228 = 0228,0294N = 0295,9237
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0228,0260 = 0228,0286 = 0279,0295
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0228,0266 = 0261,0295
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0228,0264 = 0272,0295
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0206,9214 = 0228,9214 = 0285,9214
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0201,0228 = 020117,0228 = 0206,0295 = 0228,0285 =
0228,0295 = 0285,0295
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -++-+--- 0206,0256 = 0256,0285
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0206,0262 = 0262,0285
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0220,0251 = 0251,0255
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0220,9237 = 0255,9237
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0220,0241 = 0241,0255
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0220,0279 = 0255,0279
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0220,0261 = 0255,0261
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0220,0272 = 0255,0272
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0220,9206 = 0255,9206
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0220,9226 = 0255,9226
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- +----- 0220,9227 = 0255,9227
+++++--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+--- ---+---

----- -+----- 0206,0220 = 0206,0255 = 0220,0285 = 0255,0285

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+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0245	=	0245,0285	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0246	=	0246,0285	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0292	=	0285,0292	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0243N	=	0243N,0285	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0282N	=	0282N,0285	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0270	=	0270,0285	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	+	-----
-----	-----	---	023501,0285	=	023502,0285	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0234	=	0234,0285	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0288N	=	0285,0288N	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0224,0251	=	0240,9237 = 0251,0294N	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0240,0279	=	0251,0260 = 0251,0286	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0240,0261	=	0251,0266	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0240,0272	=	0251,0264	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0201,0251	=	020117,0251 = 0206,0240 = 0240,0251 =	-----	-----	-----	-----
0240,0285	=	0251,0267 = 0251,0277 = 0251,0285	-----	-----	-----	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0277	=	0277,0285	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0224,0241	=	0241,0294N	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0224,0279	=	0260,9237 = 0279,0294N = 0286,9237	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0224,0261	=	0261,0294N = 0266,9237	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0224,0272	=	0264,9237 = 0272,0294N	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,9235	=	0285,9235	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	+
-----	-----	---	0224,9206	=	0294N,9206	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0224,9226	=	0294N,9226	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0224,9227	=	0294N,9227	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0201,9237	=	020117,9237 = 0206,0224 = 0206,0294N =	-----	-----	-----	-----
0224,0285	=	0285,0294N = 0285,9237 = 0294N,9237	-----	-----	-----	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,9201	=	0285,9201	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0268	=	0268,0285	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0241,0260	=	0241,0286	-----	-----	-----	-----
+++++---	---+	-----	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0206,0280	=	0241,0280 = 0280,0285	-----	-----	-----	-----

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+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,0241 =	020117,0241 =	0241,0285				
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0267 =	0267,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0258 =	0258,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0275 =	0275,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0271 =	0271,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0259 =	0259,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0260,0261 =	0261,0286 =	0266,0279				
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0260,0272 =	0264,0279 =	0272,0286				
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0260,9206 =	0286,9206					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0260,9226 =	0286,9226					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0260,9227 =	0286,9227					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,0279 =	020117,0279 =	0206,0260 =	0206,0286 =			
0260,0279 =	0260,0285 =	0279,0285 =	0285,0286						
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0261,0264 =	0266,0272					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,0261 =	020117,0261 =	0206,0266 =	0261,0266 =			
0261,0285 =	0266,0285								
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,0272 =	020117,0272 =	0206,0264 =	0264,0272 =			
0264,0285 =	0272,0285								
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	02010102L,0206 =	02010102L,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0276 =	0276,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0274 =	0274,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0230 =	0230,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0253N =	0253N,0285 =	0281,0285				
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0242 =	0242,0285					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,0297 =	0285,0297					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,9205 =	0285,9205					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,9206 =	020117,9206 =	0285,9206				
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,9207 =	0285,9207					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,9209 =	0285,9209					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,9211 =	0285,9211					
+++++---	---+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,9213N =	0285,9213N					

101.412-24/04 – including Taq polymerase
 101.412-24u/04u – without Taq polymerase

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+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0224,9203 = 0294N,9203
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0260,9203 = 0286,9203
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0201,9203 = 020103,9203 = 0207,0256 = 0220,9203 =
0234,9203 = 0245,9203 = 0256,9203 = 0262,9203 = 0282N,9203 = 0288N,9203 =
0292,9203
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0220,9230 = 0255,9230
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0218,0220 = 0218,0255
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0207,0220 = 0207,0255
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0224,9230 = 0294N,9230
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0260,9230 = 0286,9230
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0201,9230 = 020103,9230 = 020117,9230 = 0207,0240 =
0240,9230 = 0267,9230 = 0277,9230
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0218,0224 = 0218,0294N
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0207,0224 = 0207,0294N
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0218,0260 = 0218,0286
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0201,0218 = 020103,0218 = 020117,0218
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0207,0260 = 0207,0286
+++++--- -----+-- -----+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- 0201,0207 = 020103,0207 = 020117,0207
+++++--- -----++ -----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- --+ 0273,0287 = 0273,0296
+++++--- -----++ -----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- --+ 0287,0293 = 0293,0296
+++++--- -----++ -----+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- --- 0209,0287 = 0209,0296
+++++--- -----+ -+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- --- 0283N,0287 = 0283N,0296
+++++--- -----+ -+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- --- 0229,0287 = 0229,0296
+++++--- -----+ -+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- --- 0219,0287 = 0219,0296
+++++--- -----+ -+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- --- 0237,0287 = 0237,0296
+++++--- -----+ -+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- --- 0227,0287 = 0227,0296
+++++--- -----+ -+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- --- 0212,0287 = 0212,0296
+++++--- -----+ -+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- --- 0236,0287 = 0236,0296
+++++--- -----+ -+--+-- -+--+-- +-----+-----+-----+-----+-----+-----+
-----+-----+----- --- 0231,0287 = 0231,0296
+++++--- -----+ -+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- ++ 0287,9231 = 0296,9231
+++++--- -----+ -+-----+-----+-----+-----+-----+-----+-----+-----+
-----+-----+----- + 0216,0287 = 0216,0296
  
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+++++---	-----+-	-----	++-----	-----	-----	-----	-----	-----
-----	-----	---	0252,0287 =	0252,0296				
+++++---	-----+-	-----	++-----	-----	-----	-----	-----	-----
-----	-----	---	0287,9214 =	0296,9214				
+++++---	-----+-	-----	++-----	-----	-----	-----	-----	-----
-----	-----	---	0287,0295 =	0295,0296				
+++++---	-----+-	-----	+++-+	-+	-----	-----	-----	-----
-----	-----	---	0256,0287 =	0256,0296				
+++++---	-----+-	-----	++-----	-----	-----	-----	-----	-----
-----	-----	---	0262,0287 =	0262,0296				
+++++---	-----+-	-----	++-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0287 =	0220,0296 =	0255,0287 =	0255,0296		
+++++---	-----+-	-----	++---	-----	-----	-----	-----	-----
-----	-----	---	0245,9229 =	0282N,9229				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0245,0287 =	0245,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0224,9229 =	0294N,9229				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0260,9229 =	0286,9229				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0201,9229 =	0246,0287 =	0246,0296 =	0246,9229 =		
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0270,9229 =	0292,9229 =	0296,9229			
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0287,0292 =	0292,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0243N,0287 =	0243N,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0282N,0287 =	0282N,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0270,0287 =	0270,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	023501,0296 =	023502,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0234,0287 =	0234,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0287,0288N =	0288N,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0240,0287 =	0240,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0277,0287 =	0277,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0287,9235 =	0296,9235				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0224,0287 =	0224,0296 =	0287,0294N =	0294N,0296		
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0287,9201 =	0296,9201				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0268,0287 =	0268,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0280,0287 =	0280,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0267,0287 =	0267,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0258,0287 =	0258,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0275,0287 =	0275,0296				
+++++---	-----+-	-----	++-	-----	-----	-----	-----	-----
-----	-----	---	0271,0287 =	0271,0296				

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+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0259,0287	=	0259,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0260,0287	=	0260,0296 = 0286,0287 = 0286,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0266,0287	=	0266,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0264,0287	=	0264,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	02010102L,0287	=	02010102L,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0276,0287	=	0276,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0274,0287	=	0274,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0230,0287	=	0230,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0253N,0287	=	0253N,0296 = 0281,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0242,0287	=	0242,0296	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,0297	=	0296,0297	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9205	=	0296,9205	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9207	=	0296,9207	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9209	=	0296,9209	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9211	=	0296,9211	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9213N	=	0296,9213N	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9216	=	0296,9216	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9218	=	0296,9218	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9219	=	0296,9219	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9220	=	0296,9220	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9221	=	0296,9221	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9223	=	0296,9223	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9225N	=	0296,9225N	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9232	=	0296,9232	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9233	=	0296,9233	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9234	=	0296,9234	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9238	=	0296,9238	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9239	=	0296,9239	-----	-----	-----
+++++	----	+	-----	-----	+	-----	-----	-----
-----	-----	---	0287,9240	=	0296,9240	-----	-----	-----

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+++++--- -+-----+-----
----- -+-----+-----
----- -+-----+-----
0287,9241 = 0296,9241
+++++--- -+-----+-----
----- -+-----+-----
0201,0287 = 0201,0296 = 020103,0296 = 020117,0287 =
020117,0296 = 0287,0296 = 0296,0296
+++++--- -+-----+-----
----- -+-----+-----
0233,0273 = 0252,0273
+++++--- -+-----+-----
----- -+-----+-----
0233,0293 = 0252,0293
+++++--- -+-----+-----
----- -+-----+-----
0220,0273 = 0255,0273
+++++--- -+-----+-----
----- -+-----+-----
0220,0293 = 0255,0293
+++++--- -+-----+-----
----- -+-----+-----
023501,0273 = 023502,0273
+++++--- -+-----+-----
----- -+-----+-----
023501,0293 = 023502,0293
+++++--- -+-----+-----
----- -+-----+-----
0224,0273 = 0273,0294N
+++++--- -+-----+-----
----- -+-----+-----
0224,0293 = 0293,0294N
+++++--- -+-----+-----
----- -+-----+-----
0260,0273 = 0273,0286
+++++--- -+-----+-----
----- -+-----+-----
0260,0293 = 0286,0293
+++++--- -+-----+-----
----- -+-----+-----
0253N,0273 = 0273,0281
+++++--- -+-----+-----
----- -+-----+-----
0253N,0293 = 0281,0293
+++++--- -+-----+-----
----- -+-----+-----
0201,0273 = 020103,0273 = 020117,0273 = 0209,0273 =
0273,0273 = 0273,0293 = 0273,0295
+++++--- -+-----+-----
----- -+-----+-----
0201,0293 = 020103,0293 = 020117,0293 = 0209,0293 =
0293,0293 = 0293,0295
+++++--- -+-----+-----
----- -+-----+-----
0209,0220 = 0209,0255
+++++--- -+-----+-----
----- -+-----+-----
0209,023501 = 0209,023502
+++++--- -+-----+-----
----- -+-----+-----
0209,0224 = 0209,0294N
+++++--- -+-----+-----
----- -+-----+-----
0209,0260 = 0209,0286
+++++--- -+-----+-----
----- -+-----+-----
0209,0253N = 0209,0281
+++++--- -+-----+-----
----- -+-----+-----
0201,0209 = 020103,0209 = 020117,0209 = 0209,0209
+++++--- -+-----+-----
----- -+-----+-----
0220,0239 = 0239,0255
+++++--- -+-----+-----
----- -+-----+-----
0220,0283N = 0255,0283N
+++++--- -+-----+-----
----- -+-----+-----
023501,0283N = 023502,0283N
+++++--- -+-----+-----
----- -+-----+-----
0224,0239 = 0239,0294N
+++++--- -+-----+-----
----- -+-----+-----
0224,0283N = 0283N,0294N

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+++++-----+-----+-----+-----+-----+-----+-----
----- 0201,0239 = 020103,0239 = 020117,0239 = 0239,0260 =
0239,0283N = 0260,0283N = 0283N,0286
+++++-----+-----+-----+-----+-----+-----+-----
----- 0253N,0283N = 0281,0283N
+++++-----+-----+-----+-----+-----+-----+-----
----- 0201,0283N = 020103,0283N = 020117,0283N = 0283N,0283N
+++++-----+-----+-----+-----+-----+-----+-----
----- 0211,0256 = 0256,9228
+++++-----+-----+-----+-----+-----+-----+-----
----- 0211,0262 = 0234,9228 = 0262,9228
+++++-----+-----+-----+-----+-----+-----+-----
----- 0224,9228 = 0294N,9228
+++++-----+-----+-----+-----+-----+-----+-----
----- 0260,9228 = 0286,9228
+++++-----+-----+-----+-----+-----+-----+-----
----- 0220,0269 = 0255,0269
+++++-----+-----+-----+-----+-----+-----+-----
----- 0201,9228 = 020117,9228 = 0211,0220 = 0211,0255 =
0220,9228 = 0229,9228 = 0255,9228
+++++-----+-----+-----+-----+-----+-----+-----
----- 0220,0229 = 0229,0255
+++++-----+-----+-----+-----+-----+-----+-----
----- 0211,0246 = 0229,0248
+++++-----+-----+-----+-----+-----+-----+-----
----- 0211,0234 = 0229,023501 = 0229,023502
+++++-----+-----+-----+-----+-----+-----+-----
----- 0224,0269 = 0269,0294N
+++++-----+-----+-----+-----+-----+-----+-----
----- 0211,0224 = 0211,0294N
+++++-----+-----+-----+-----+-----+-----+-----
----- 0224,0229 = 0229,0294N
+++++-----+-----+-----+-----+-----+-----+-----
----- 0260,0269 = 0269,0286
+++++-----+-----+-----+-----+-----+-----+-----
----- 0211,0260 = 0211,0286
+++++-----+-----+-----+-----+-----+-----+-----
----- 0229,0260 = 0229,0286
+++++-----+-----+-----+-----+-----+-----+-----
----- 0229,0253N = 0229,0281
+++++-----+-----+-----+-----+-----+-----+-----
----- 0201,0269 = 020117,0269 = 0229,0269
+++++-----+-----+-----+-----+-----+-----+-----
----- 0201,0211 = 020117,0211 = 0211,0229 = 0229,0290
+++++-----+-----+-----+-----+-----+-----+-----
----- 0201,0229 = 020103,0229 = 020117,0229 = 0229,0229
+++++-----+-----+-----+-----+-----+-----+-----
----- 0219,0220 = 0219,0255
+++++-----+-----+-----+-----+-----+-----+-----
----- 0220,0237 = 0237,0255
+++++-----+-----+-----+-----+-----+-----+-----
----- 0219,023501 = 0219,023502
+++++-----+-----+-----+-----+-----+-----+-----
----- 023501,0237 = 023502,0237
+++++-----+-----+-----+-----+-----+-----+-----
----- 0219,0253N = 0219,0281
+++++-----+-----+-----+-----+-----+-----+-----
----- 0201,0219 = 020103,0219 = 020117,0219 = 0219,0236 =
0219,0260 = 0219,9218

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+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0237,0260 = 0237,0286
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0237,0253N = 0237,0281
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0201,0237 = 020103,0237 = 020117,0237 = 0212,0236 =
0236,0237
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0220,0227 = 0227,0255
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0227,023501 = 0227,023502
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0227,0260 = 0227,0286
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0227,0253N = 0227,0281
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0201,0227 = 020103,0227 = 020117,0227
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0212,0220 = 0212,0255
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0212,023501 = 0212,023502
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0212,0260 = 0212,0286
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0212,0253N = 0212,0281
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0201,0212 = 020103,0212 = 020117,0212
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0220,0236 = 0236,0255
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 023501,0236 = 023502,0236
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0224,0236 = 0236,0294N
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0236,0260 = 0236,0286
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0236,0253N = 0236,0281
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0201,0236 = 020103,0236 = 020117,0236 = 0236,0236
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0220,0231 = 0231,0255
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0231,023501 = 0231,023502
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0224,0231 = 0231,0294N
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0231,0260 = 0231,0286
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0231,0253N = 0231,0281
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ----- --- 0201,0231 = 020103,0231 = 020117,0231 = 0231,0231
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ++----- --- 0220,9231 = 0255,9231
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- +----- --- 0216,0220 = 0216,0255
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- ++----- --- 023501,9231 = 023502,9231
+++++--- ----- +-+---+----- +-----+-----+----- -----
----- +----- --- 0216,023501 = 0216,023502
    
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+++++	-----	-----	+	-----	-----	-----	-----	-----	-----
-----	++	-----	---	0224,9231	=	0294N,9231			
+++++	-----	-----	+	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0216,0224	=	0216,0294N			
+++++	-----	-----	+	-----	-----	-----	-----	-----	-----
-----	++	-----	---	0260,9231	=	0286,9231			
+++++	-----	-----	+	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0216,0260	=	0216,0286			
+++++	-----	-----	+	-----	-----	-----	-----	-----	-----
-----	++	-----	---	0253N,9231	=	0281,9231			
+++++	-----	-----	+	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0216,0253N	=	0216,0281			
+++++	-----	-----	+	-----	-----	-----	-----	-----	-----
-----	++	-----	---	0201,9231	=	020103,9231	=	020117,9231	=
9231,9231									
+++++	-----	-----	+	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0201,0216	=	020103,0216	=	020117,0216	=
0216,0216									
+++++	-----	-----	---	0220,0252	=	0252,0255			
+++++	-----	-----	---	023501,0252	=	023502,0252			
+++++	-----	-----	---	0224,0252	=	0252,0294N			
+++++	-----	-----	---	0252,0260	=	0252,0286			
+++++	-----	-----	---	0233,9214	=	0252,9214			
+++++	-----	-----	---	0252,0253N	=	0252,0281			
+++++	-----	-----	---	0201,0252	=	020103,0252	=	020117,0252	=
0233,0295	=	0252,0252	=	0252,0295					
+++++	-----	-----	---	0220,0233	=	0233,0255			
+++++	-----	-----	---	0224,0233	=	0233,0294N			
+++++	-----	-----	---	0233,0260	=	0233,0286			
+++++	-----	-----	---	0201,0233	=	020103,0233	=	020117,0233	
+++++	-----	-----	---	0220,9214	=	0255,9214			
+++++	-----	-----	---	0220,0295	=	0255,0295			
+++++	-----	-----	---	023501,9214	=	023502,9214			
+++++	-----	-----	---	023501,0295	=	023502,0295			
+++++	-----	-----	---	0224,9214	=	0294N,9214			
+++++	-----	-----	---	0224,0295	=	0294N,0295			
+++++	-----	-----	---	0260,9214	=	0286,9214			
+++++	-----	-----	---	0260,0295	=	0286,0295			
+++++	-----	-----	---	0253N,9214	=	0281,9214			

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+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0201,9214 = 020103,9214 = 020117,9214 = 0295,9214 =
9214,9214
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0253N,0295 = 0281,0295
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0201,0295 = 020103,0295 = 020117,0295 = 0295,0295
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0246,0256 = 0256,0270
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0246,0278 = 0270,0278
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0224,0256 = 0256,0294N
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0224,0278 = 0278,0294N
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0256,0260 = 0256,0286
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0253N,0256 = 0256,0281
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0234,0278 = 023501,0256 = 023502,0256 = 023503,0256 =
0256,0278 = 0256,0290 = 0262,0278
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0201,0256 = 020103,0256 = 020117,0256 = 0220,0256 =
0234,0256 = 0245,0256 = 0245,0262 = 0255,0256 = 0256,0256 = 0256,0262 =
0256,0282N = 0256,0288N = 0256,0292
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0260,0278 = 0278,0286
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0201,0278 = 020117,0278 = 0220,0278 = 0245,0278 =
0255,0278 = 0278,0282N = 0278,0288N = 0278,0292
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0220,0245 = 0245,0255
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0220,0246 = 0246,0255
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0220,0292 = 0255,0292
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0220,0243N = 0243N,0255
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0220,0282N = 0255,0282N
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0220,0270 = 0255,0270
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0224,0262 = 0262,0294N
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0260,0262 = 0262,0286
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0253N,0262 = 0262,0281
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0220,023501 = 0220,023502 = 023501,0255 = 023501,0262 =
023502,0262 = 023503,0262 = 0262,0290
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0201,0262 = 020103,0262 = 020117,0262 = 0220,0234 =
0220,0262 = 0234,0255 = 0234,0262 = 0255,0262 = 0262,0262 = 0262,0288N
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0220,0288N = 0255,0288N
+++++--- ----- +----- +----- +----- +-----
----- ----- --- 0220,0240 = 0240,0255

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+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0277	=	0255,0277	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	-----	0220,9235	=	0255,9235	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0224	=	0220,0294N	=	0224,0255	=	0255,0294N
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,9201	=	0255,9201	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0268	=	0255,0268	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0280	=	0255,0280	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0267	=	0255,0267	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0258	=	0255,0258	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0275	=	0255,0275	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,023503	=	023503,0255	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0271	=	0255,0271	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0259	=	0255,0259	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0260	=	0220,0286	=	0255,0260	=	0255,0286
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0266	=	0255,0266	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0264	=	0255,0264	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	02010102L,0220	=	02010102L,0255	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0276	=	0255,0276	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0274	=	0255,0274	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0230	=	0230,0255	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,9224	=	0255,9224	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0253N	=	0220,0281	=	0253N,0255	=	0255,0281
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0242	=	0242,0255	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0290	=	0255,0290	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,0297	=	0255,0297	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,9205	=	0255,9205	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,9207	=	0255,9207	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,9209	=	0255,9209	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,9211	=	0255,9211	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0220,9213N	=	0255,9213N	-----	-----	-----	-----

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+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9216 =	0255,9216				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9218 =	0255,9218				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
+-----	-----	---		0220,9219 =	0255,9219				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-+	-----	---		0220,9220 =	0255,9220				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
--+	-----	---		0220,9221 =	0255,9221				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9223 =	0255,9223				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9225N =	0255,9225N				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9232 =	0255,9232				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9233 =	0255,9233				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9234 =	0255,9234				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9238 =	0255,9238				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9239 =	0255,9239				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9240 =	0255,9240				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0220,9241 =	0255,9241				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0201,0220 =	0201,0255 =	020103,0220 =	020103,0255 =		
020117,0220 =	0220,0220 =	0220,0255							
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0245,0248 =	0248,0282N				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0245,0246 =	0245,0270 =	0246,0282N			
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		023501,0245 =	023502,0245				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0224,0245 =	0245,0294N				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0245,0260 =	0245,0286				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0245,0253N =	0245,0281				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0201,0245 =	020103,0245 =	020117,0245 =	0245,0245 =		
0245,0282N =	0245,0292 =	0282N,0292							
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0234,0248 =	023501,0246 =	023502,0246			
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0224,0248 =	0248,0294N				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0224,0246 =	0246,0294N				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0248,0260 =	0248,0286				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0246,0260 =	0246,0286				
+++++---	-----	-----	++	-----	-----	-----	-----	-----	+
-----	-----	---		0246,0253N =	0246,0281				



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+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0201,0248 = 0246,0248 = 0246,0290 = 0248,0270 =
0248,0292
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0201,0246 = 020103,0246 = 020117,0246 = 0246,0246 =
0246,0270 = 0246,0292 = 0270,0292
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 023501,0292 = 023502,0292
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0224,0292 = 0292,0294N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0260,0292 = 0286,0292
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0253N,0292 = 0281,0292
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0201,0292 = 020103,0292 = 020117,0292 = 0292,0292
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 023501,0243N = 023502,0243N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0224,0243N = 0243N,0294N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0243N,0260 = 0243N,0286
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0243N,0253N = 0243N,0281
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0201,0243N = 020103,0243N = 020117,0243N = 0243N,0243N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 023501,0282N = 023502,0282N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0224,0282N = 0282N,0294N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0260,0282N = 0282N,0286
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0253N,0282N = 0281,0282N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0201,0282N = 020103,0282N = 020117,0282N = 0282N,0282N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 023501,0270 = 023502,0270
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0224,0270 = 0270,0294N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0260,0270 = 0270,0286
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0253N,0270 = 0270,0281
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0201,0270 = 020103,0270 = 020117,0270 = 0270,0270
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 023501,0240 = 023502,0240
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 023501,0277 = 023502,0277
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- +----- 023501,9235 = 023502,9235
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0224,023501 = 0224,023502 = 023501,0294N = 023502,0294N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0224,0234 = 0234,0294N
+++++----- +----- +----- +----- +----- +----- +----- +-----
----- 0224,0288N = 0288N,0294N

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+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9201	=	023502,9201				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0268	=	023502,0268				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0280	=	023502,0280				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0267	=	023502,0267				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0258	=	023502,0258				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0275	=	023502,0275				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0271	=	023502,0271				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0259	=	023502,0259				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0260	=	023501,0286 = 023502,0260 = 023502,0286				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0234,0260	=	0234,0286				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0266	=	023502,0266				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0264	=	023502,0264				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	02010102L,023501	=	02010102L,023502				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0276	=	023502,0276				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0274	=	023502,0274				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0230,023501	=	0230,023502				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0253N	=	023502,0253N				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0234,0253N	=	0234,0281				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0242	=	023502,0242				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0297	=	023502,0297				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9205	=	023502,9205				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9207	=	023502,9207				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9209	=	023502,9209				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9211	=	023502,9211				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9213N	=	023502,9213N				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9216	=	023502,9216				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9218	=	023502,9218				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9219	=	023502,9219				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9220	=	023502,9220				

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+++++--- ----- +----- +----- ----- +-----
--+----- ----- --- 023501,9221 = 023502,9221
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 023501,9223 = 023502,9223
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 023501,9225N = 023502,9225N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 023501,9232 = 023502,9232
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 023501,9233 = 023502,9233
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 023501,9234 = 023502,9234
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 023501,9238 = 023502,9238
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 023501,9239 = 023502,9239
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- +--- 023501,9240 = 023502,9240
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- -+- 023501,9241 = 023502,9241
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0201,023501 = 0201,023502 = 020117,023501 = 0234,023501
= 0234,023502 = 0234,023503 = 0234,0290 = 023501,0288N = 023502,0288N =
023503,0288N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0201,0234 = 020103,0234 = 020117,0234 = 0234,0234 =
0234,0288N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0260,0288N = 0286,0288N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0253N,0288N = 0281,0288N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0201,0288N = 020103,0288N = 020117,0288N = 0288N,0288N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0224,0240 = 0240,0294N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0224,0277 = 0277,0294N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0240,0260 = 0240,0286
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0240,0253N = 0240,0281
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0201,0240 = 020103,0240 = 020117,0240 = 0240,0240 =
0240,0267 = 0240,0277 = 0267,0277
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0260,0277 = 0277,0286
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0253N,0277 = 0277,0281
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0201,0277 = 020103,0277 = 020117,0277 = 0277,0277
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0224,9201 = 0294N,9201
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0224,0268 = 0268,0294N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0224,0280 = 0280,0294N
+++++--- ----- +----- +----- ----- +-----
-----+--- ----- --- 0224,0267 = 0267,0294N

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+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0258 = 0258,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0275 = 0275,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,023503 = 023503,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0271 = 0271,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0259 = 0259,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0260 = 0224,0286 = 0260,0294N = 0286,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0266 = 0266,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0264 = 0264,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	02010102L,0224 = 02010102L,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0276 = 0276,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0274 = 0274,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0230 = 0230,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0253N,9235 = 0281,9235	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9224 = 0294N,9224	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0253N = 0224,0281 = 0253N,0294N = 0281,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0242 = 0242,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0290 = 0290,0294N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0297 = 0294N,0297	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0201,9235 = 020103,9235 = 020117,9235 = 0294N,9235	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9205 = 0294N,9205	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9207 = 0294N,9207	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9209 = 0294N,9209	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9211 = 0294N,9211	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9213N = 0294N,9213N	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9216 = 0294N,9216	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9218 = 0294N,9218	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
+	-----	---	0224,9219 = 0294N,9219	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,9220 = 0294N,9220	-----	-----	-----	-----	-----	-----
+++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
---	-----	---	0224,9221 = 0294N,9221	-----	-----	-----	-----	-----	-----

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+++++--- - - - - - +
-----+--- - - - - - 0224,9223 = 0294N,9223
+++++--- - - - - - +
-----+--- - - - - - 0224,9225N = 0294N,9225N
+++++--- - - - - - +
-----+--- - - - - - 0224,9232 = 0294N,9232
+++++--- - - - - - +
-----+--- - - - - - 0224,9233 = 0294N,9233
+++++--- - - - - - +
-----+--- - - - - - 0224,9234 = 0294N,9234
+++++--- - - - - - +
-----+--- - - - - - 0224,9238 = 0294N,9238
+++++--- - - - - - +
-----+--- - - - - - 0224,9239 = 0294N,9239
+++++--- - - - - - +
-----+--- - - - - - 0224,9240 = 0294N,9240
+++++--- - - - - - +
-----+--- - - - - - 0224,9241 = 0294N,9241
+++++--- - - - - - +
-----+--- - - - - - 0201,0224 = 0201,0294N = 020103,0224 = 020103,0294N =
020117,0224 = 020117,0294N = 0224,0294N = 0294N,0294N
+++++--- - - - - - +
-----+--- - - - - - 0260,9201 = 0286,9201
+++++--- - - - - - +
-----+--- - - - - - 0260,0268 = 0268,0286
+++++--- - - - - - +
-----+--- - - - - - 0253N,9201 = 0281,9201
+++++--- - - - - - +
-----+--- - - - - - 0201,9201 = 020103,9201 = 020117,9201 = 0268,9201 =
9201,9201
+++++--- - - - - - +
-----+--- - - - - - 0253N,0268 = 0268,0281
+++++--- - - - - - +
-----+--- - - - - - 0201,0268 = 020103,0268 = 020117,0268 = 0268,0268
+++++--- - - - - - +
-----+--- - - - - - 0260,0280 = 0280,0286
+++++--- - - - - - +
-----+--- - - - - - 0253N,0280 = 0280,0281
+++++--- - - - - - +
-----+--- - - - - - 0201,0280 = 020103,0280 = 020117,0280 = 0280,0280
+++++--- - - - - - +
-----+--- - - - - - 0260,0267 = 0267,0286
+++++--- - - - - - +
-----+--- - - - - - 0253N,0267 = 0267,0281
+++++--- - - - - - +
-----+--- - - - - - 0201,0267 = 020103,0267 = 020117,0267 = 0267,0267
+++++--- - - - - - +
-----+--- - - - - - 0258,0260 = 0258,0286
+++++--- - - - - - +
-----+--- - - - - - 0260,0275 = 0275,0286
+++++--- - - - - - +
-----+--- - - - - - 0253N,0258 = 0258,0281
+++++--- - - - - - +
-----+--- - - - - - 0201,0258 = 020103,0258 = 020117,0258 = 0258,0258 =
0258,0275
+++++--- - - - - - +
-----+--- - - - - - 0253N,0275 = 0275,0281
+++++--- - - - - - +
-----+--- - - - - - 0201,0275 = 020103,0275 = 020117,0275 = 0275,0275

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```

+++++---
-----
023503,0260 = 023503,0286
+++++---
-----
0201,023503 = 020117,023503
+++++---
-----
0260,0271 = 0271,0286
+++++---
-----
0253N,0271 = 0271,0281
+++++---
-----
0201,0271 = 020103,0271 = 020117,0271 = 0271,0271
+++++---
-----
0259,0260 = 0259,0286
+++++---
-----
0253N,0259 = 0259,0281
+++++---
-----
0201,0259 = 020103,0259 = 020117,0259 = 0259,0259
+++++---
-----
0260,0266 = 0266,0286
+++++---
-----
0260,0264 = 0264,0286
+++++---
-----
02010102L,0260 = 02010102L,0286
+++++---
-----
0260,0276 = 0276,0286
+++++---
-----
0260,0274 = 0274,0286
+++++---
-----
0230,0260 = 0230,0286
+++++---
-----
0260,9224 = 0286,9224
+++++---
-----
0253N,0260 = 0253N,0286 = 0260,0281 = 0281,0286
+++++---
-----
0242,0260 = 0242,0286
+++++---
-----
0260,0290 = 0286,0290
+++++---
-----
0260,0297 = 0286,0297
+++++---
-----
0260,9205 = 0286,9205
+++++---
-----
0260,9207 = 0286,9207
+++++---
-----
0260,9209 = 0286,9209
+++++---
-----
0260,9211 = 0286,9211
+++++---
-----
0260,9213N = 0286,9213N
+++++---
-----
0260,9216 = 0286,9216
+++++---
-----
0260,9218 = 0286,9218
+++++---
-----
0260,9219 = 0286,9219
+++++---
-----
0260,9220 = 0286,9220
+++++---
-----
0260,9221 = 0286,9221
  
```

101.412-24/04 – including *Taq* polymerase
 101.412-24u/04u – without *Taq* polymerase

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+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0260,9223 = 0286,9223	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0260,9225N = 0286,9225N	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0260,9232 = 0286,9232	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0260,9233 = 0286,9233	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0260,9234 = 0286,9234	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0260,9238 = 0286,9238	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0260,9239 = 0286,9239	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0260,9240 = 0286,9240	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	+	-----	---	0260,9241 = 0286,9241	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0201,0260 = 0201,0286 = 020103,0260 = 020103,0286 =	-----	-----	-----	-----	-----	-----
		-----		020117,0260 = 020117,0286 = 0260,0260 = 0260,0286	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0253N,0266 = 0266,0281	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0201,0266 = 020103,0266 = 020117,0266 = 0266,0266	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0253N,0264 = 0264,0281	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0201,0264 = 020103,0264 = 020117,0264 = 0264,0264	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	02010102L,0253N = 02010102L,0281	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0201,02010102L = 02010102L,02010102L = 02010102L,020103	-----	-----	-----	-----	-----	-----
		-----		= 02010102L,020117	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0253N,0276 = 0276,0281	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0201,0276 = 020103,0276 = 020117,0276 = 0276,0276	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0253N,0274 = 0274,0281	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0201,0274 = 020103,0274 = 020117,0274 = 0274,0274	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0230,0253N = 0230,0281	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0201,0230 = 020103,0230 = 020117,0230 = 0230,0230	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0242,0253N = 0242,0281	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0253N,0297 = 0281,0297	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0253N,9205 = 0281,9205	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0253N,9207 = 0281,9207	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0253N,9209 = 0281,9209	-----	-----	-----	-----	-----	-----
+++++	---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----		-----	---	0253N,9211 = 0281,9211	-----	-----	-----	-----	-----	-----

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+++++	---	0253N,9213N = 0281,9213N	-----+	-----	-----+
+++++	---	0253N,9216 = 0281,9216	-----+	-----	-----+
+++++	---	0253N,9218 = 0281,9218	-----+	-----	-----+
+++++	---	0253N,9219 = 0281,9219	-----+	-----	-----
-+	---	0253N,9220 = 0281,9220	-----+	-----	-----
+++++	---	0253N,9221 = 0281,9221	-----+	-----	-----
+++++	---	0253N,9223 = 0281,9223	-----+	-----	-----
+++++	---	0201,9224 = 020117,9224 = 0253N,9224	-----+	-----	-----
+++++	---	0253N,9225N = 0281,9225N	-----+	-----	-----
+++++	---	0253N,9232 = 0281,9232	-----+	-----	-----
+++++	---	0253N,9233 = 0281,9233	-----+	-----	-----
+++++	---	0253N,9234 = 0281,9234	-----+	-----	-----
+++++	---	0253N,9238 = 0281,9238	-----+	-----	-----
+++++	---	0253N,9239 = 0281,9239	-----+	-----	-----
+++++	---	0253N,9240 = 0281,9240	-----+	-----	-----
+++++	---	0253N,9241 = 0281,9241	-----+	-----	-----
+++++	---	0201,0253N = 0201,0281 = 020103,0253N = 020117,0253N = 020117,0281 = 0253N,0253N = 0253N,0281	-----+	-----	-----
+++++	---	0201,0242 = 020103,0242 = 020117,0242 = 0242,0242	-----+	-----	-----
+++++	---	0201,0290 = 020117,0290	-----+	-----	-----
+++++	---	0201,0297 = 020103,0297 = 020117,0297 = 0297,0297	-----+	-----	-----
+++++	---	0201,9205 = 020103,9205 = 020117,9205 = 9205,9205	-----+	-----	-----
+++++	---	0201,9207 = 020103,9207 = 020117,9207 = 9207,9207	-----+	-----	-----
+++++	---	0201,9209 = 020103,9209 = 020117,9209 = 9209,9209	-----+	-----	-----
+++++	---	0201,9211 = 020103,9211 = 020117,9211 = 9211,9211	-----+	-----	-----
+++++	---	0201,9213N = 020103,9213N = 020117,9213N = 9213N,9213N	-----+	-----	-----
+++++	---	0201,9216 = 020103,9216 = 020117,9216 = 9216,9216	-----+	-----	-----
+++++	---	0201,9218 = 020103,9218 = 020117,9218 = 9218,9218	-----+	-----	-----
+++++	---	0201,9219 = 020103,9219 = 020117,9219 = 9219,9219	-----+	-----	-----
+++++	---	0201,9220 = 020103,9220 = 020117,9220 = 9220,9220	-----+	-----	-----

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+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
--+-----	-----	---	0201,9221	=	020103,9221	=	020117,9221	=	9221,9221
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,9223	=	020103,9223	=	020117,9223	=	9223,9223
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,9225N	=	020103,9225N	=	020117,9225N	=	9225N,9225N
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,9232	=	020103,9232	=	020117,9232	=	9232,9232
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,9233	=	020103,9233	=	020117,9233	=	9233,9233
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,9234	=	020103,9234	=	020117,9234	=	9234,9234
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,9238	=	020103,9238	=	020117,9238	=	9238,9238
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,9239	=	020103,9239	=	020117,9239	=	9239,9239
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,9240	=	020103,9240	=	020117,9240	=	9240,9240
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,9241	=	020103,9241	=	020117,9241	=	9241,9241
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0201,0201	=	0201,020103	=	0201,020117	=	020103,020117
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0238	=	0238,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,9217	=	9202,9217				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0203	=	0203,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0213	=	0213,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0265	=	0265,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0254	=	0254,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0244	=	0244,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,9237	=	9202,9237				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,9236	=	9202,9236				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0249	=	0249,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0219	=	0219,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0237	=	0237,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0227	=	0227,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0212	=	0212,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,9204	=	9202,9204				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,9235	=	9202,9235				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0224	=	0224,9202				
+++++---	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----+	-----	---	0202,0222	=	0222,9202				

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++++++	-----	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,9202 = 9202,9202	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0212,9217 = 0213,9217	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0203,0238 = 0222,0238	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0203,0212 = 0203,0213	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0203,9217 = 0222,9217 = 9217,9217	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0203,0203 = 0203,0222	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0222,0249 = 0249,0249	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0222,9204 = 9204,9204	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0212,0238 = 0213,0238 = 0238,0238	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0212,0213 = 0213,0213	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0224,0254 = 0237,9237	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0219,0254 = 0237,0244	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0212,0254 = 0237,0254	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0212,0219 = 0219,0237	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0212,0237 = 0237,0237	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0212,0227 = 0227,0227	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020117,0208 = 0208,0255	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020117,9203 = 0255,9203	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020117,0255 = 0255,0255	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,0263 = 0263,0263	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0202,9215 = 9215,9215	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,0279 = 0286,9208	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0204,9208 = 0217,0257	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0205,0221 = 0205,0287	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020103,0205 = 0205,0206 = 0205,0284	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0208,0221 = 0208,0287	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0208,0211 = 0208,9228	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020103,0208 = 0206,0208 = 0208,0284	-----	-----	-----	-----	-----	-----
+++++---	++-----	---+	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,9222 = 0287,9222	-----	-----	-----	-----	-----	-----

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+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,9236 =	0221,9236	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
---+-----	-----	---+	020103,9222 =	0206,9222 =	0228,9222	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0214,0221 =	0214,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020103,0214 =	0206,0214 =	0214,0284	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0299 =	0287,0299	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0299 =	023502,0299	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020103,0299 =	0206,0299 =	0299,0299	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0257 =	0257,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020103,9208 =	0206,9208	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0257 =	023502,0257	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020103,0257 =	0206,0257	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0284 =	0284,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0284 =	023502,0284	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020103,0284 =	0206,0284 =	0284,0284	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,9212 =	0221,0291 =	0221,9212 =	0287,0291 =	-----	-----	-----
0291,9212	-----	-----	-----	-----	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0291 =	023502,0291	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020103,0291 =	0206,0291 =	0291,0291	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0254 =	0254,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0244 =	0244,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0228 =	0228,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0206,9229 =	0221,9229	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,023501 =	0221,023502	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0251 =	0251,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,9237 =	0287,9237	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0241 =	0241,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0279 =	0279,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0261 =	0261,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,0272 =	0272,0287	-----	-----	-----	-----	-----
+++++--	---+--+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0221,9206 =	0287,9206	-----	-----	-----	-----	-----

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- - - - - +	- - - - -	- - -	0221,9226 =	0287,9226					
+ + + + - - - + - - + -	- - - - -	- - -	0221,9227 =	0287,9227					
+ + + + - - - + - - + -	- - - - -	- - -	020103,0221 =	0206,0221 =	0206,0287 =	0221,0221 =			
0221,0287									
+ + + + - - - + - - + -	- - - - -	- - -	020103,0210 =	0206,0210 =	0210,0228				
+ + + + - - - + - - + -	- - - - -	- - -	023501,0254 =	023502,0254					
+ + + + - - - + - - + -	- - - - -	- - -	020103,0254 =	0206,0254					
+ + + + - - - + - - + -	- - - - -	- - -	023501,0244 =	023502,0244					
+ + + + - - - + - - + -	- - - - -	- - -	020103,0244 =	0206,0244					
+ + + + - - - + - - + -	- - - - -	- - -	0228,023501 =	0228,023502					
+ + + + - - - + - - + -	- - - - -	- - -	020103,0228 =	0206,0228 =	0228,0228				
+ + + + - - - + - - + -	- - - - -	- - -	023501,0251 =	023502,0251					
+ + + + - - - + - - + -	- - - - -	- - -	023501,9237 =	023502,9237					
+ + + + - - - + - - + -	- - - - -	- - -	023501,0241 =	023502,0241					
+ + + + - - - + - - + -	- - - - -	- - -	023501,0279 =	023502,0279					
+ + + + - - - + - - + -	- - - - -	- - -	023501,0261 =	023502,0261					
+ + + + - - - + - - + -	- - - - -	- - -	023501,0272 =	023502,0272					
+ + + + - - - + - - + -	- - - - -	- - -	023501,9206 =	023502,9206					
+ + + + - - - + - - + -	- - - - -	- - -	023501,9226 =	023502,9226					
+ + + + - - - + - - + -	- - - - -	- - -	023501,9227 =	023502,9227					
+ + + + - - - + - - + -	- - - - -	- - -	0206,023501 =	0206,023502					
+ + + + - - - + - - + -	- - - - -	- - -	020103,0251 =	0206,0251 =	0251,0251				
+ + + + - - - + - - + -	- - - - -	- - -	020103,9237 =	0206,9237					
+ + + + - - - + - - + -	- - - - -	- - -	020103,0241 =	0206,0241 =	0241,0241				
+ + + + - - - + - - + -	- - - - -	- - -	020103,0279 =	0206,0279					
+ + + + - - - + - - + -	- - - - -	- - -	020103,0261 =	0206,0261 =	0261,0261				
+ + + + - - - + - - + -	- - - - -	- - -	020103,0272 =	0206,0272 =	0272,0272				
+ + + + - - - + - - + -	- - - - -	- - -	020103,9206 =	0206,9206 =	9206,9206				
+ + + + - - - + - - + -	- - - - -	- - -	020103,9226 =	0206,9226 =	9226,9226				
+ + + + - - - + - - + -	- - - - -	- - -	020103,9227 =	0206,9227 =	9227,9227				

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+----+	-----	-----	-----	-----	-----	-----	-----	-----
-----	-----	---	020103,0206	=	0206,0206	-----	-----	-----
+----+	-----	-----	-----	-+	-----	-+	-----	-----
-----	-----	---	020103,023501	=	020103,023502	-----	+	-----
+----+	++-----	+-----+	-----	-----	-----	-----	-----	-----
-----	-----	---	0210,0217	=	0210,9210	-----	-----	-----
+----+	-+-----	+-----+	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9210	=	023502,9210	-----	-----	-----
+----+	-+-----	+-----+	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,023501	=	0217,023502	-----	+	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0215N,0287	=	0215N,9212	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0287,9203	=	9203,9212	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0287,9230	=	9212,9230	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0218,0287	=	0218,9212	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0207,0287	=	0207,9212	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0211,9203	=	9203,9228	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0215N,023501	=	0215N,023502	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0207,0215N	=	0215N,0215N	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9203	=	023503,9203 = 0278,9203 = 0290,9203	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9230	=	023502,9230	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0218,023501	=	0218,023502	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0207,023501	=	0207,023502	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0207,9230	=	9230,9230	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0207,0218	=	0218,0218	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0239	=	023502,0239	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0233,023501	=	0233,023502	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0217,9210	=	9210,9210	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9236	=	023502,9236	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9208	=	023502,9208	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0210,023501	=	0210,023502	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,9212	=	023502,9212	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0287,9212	=	9212,9212	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	0248,0287	=	0290,9229	-----	-----	-----
+----+	-----	++-----	-----	-----	-----	-----	-----	-----
-----	-----	---	023501,0287	=	023502,0287	-----	-----	-----

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-----	-----	---	0211,0278	=	0278,9228			
--+++--	-----	-+-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	023501,9228	=	023502,9228			
--+++--	-----	-+-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	0211,9228	=	0290,9228	=	9228,9228	
--+++--	-----	-+-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	023501,0269	=	023502,0269			
--+++--	-----	-+-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	0211,023501	=	0211,023502			
--+++--	-----	-+-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	0211,0269	=	0269,0269	=	0269,0290	
--+++--	-----	-+-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	0211,0211	=	0211,0290			
--+++--	-----	-----	---++-+-	-+-----	+-----	-----	+-----	-----
-----	-----	---	023501,0278	=	023502,0278	=	023503,0278	
--+++--	-----	-----	---++-+-	-+-----	+-----	-----	+-----	-----
-----	-----	---	0278,0278	=	0278,0290			
--+++--	-----	-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	023501,9224	=	023502,9224			
--+++--	-----	-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	023501,0281	=	023502,0281			
--+++--	-----	-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	023501,023501	=	023501,023502	=	023501,023503	=
023501,0290	=	023502,023503	=	023502,0290				
--+++--	-----	-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	023503,023503	=	023503,0290			
--+++--	-----	-----	---+-----	-+-----	+-----	-----	+-----	-----
-----	-----	---	0281,9224	=	9224,9224			

¹The A*02010102L and A*020103 and A*020117 amplification patterns differ from the amplification pattern of the other A*0201 alleles. The A*023501, A*023502 and A*023503 amplification patterns differ. These different A*02 amplification patterns have been considered in these calculations.

SPECIFICITY TABLE

HLA-A*02 SSP subtyping

Specificities and sizes of the PCR products of the 91 primer mixes used for HLA-A*02 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-A*02 alleles ³	Other amplified HLA-A alleles ⁴
1	360 bp	800 bp	02010101-020115, 020117-020606, 0208, 0209, 0212-0214, 0216, 0219-0222, 0224-0232N, 0234, 0236-0238, 0240- 0246, 0249-0268, 0270-0277, 0279, 0280, 0282N-0286, 0288N, 0289, 0291- 0297, 0299, 9201, 9202, 9204-9207, 9209, 9211, 9213N- 9223, 9225N-9227, 9231-9235, 9237-9241	0309, 1106, 1118, 2603, 2606, 2621, 2630, 3013, 3016, 3208, 6805, 6815, 6820, 7406, 8001 ^{weakly}
2	230 bp	1070 bp	02010101-020102, 020104-020115, 020117-0204, 0207, 0209, 0212, 0213, 0215N-022002, 0222, 0224-0227, 0229- 0234, 0236-0240, 0242, 0243N, 0245- 0247, 0249, 0250, 0252, 0253N, 0255, 0256, 0258-0260, 0262-0268, 0270, 0271, 0273-0277, 0280, 0282N, 0283N, 0285, 0286, 0288N, 0289, 0292-0297, 9201-9205, 9207, 9209-9211, 9213N- 9221, 9223, 9225N, 9230-9235, 9238-9241	0309, 7406
3 ⁵	175 bp	1070 bp	02010101-020115, 020117-020302, 0205-	68020101-680202, 6815, 6818N, 6823,

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			0216, 0218, 022001-0222, 0224-0238, 0240-0243N, 0245-0256, 0258-0264, 0266-0278, 0280-0285, 0287-0297, 0299, 9201-9207, 9209, 9211-9234, 9236-9241	6827, 6828, 6831, 6834, 6840, 6901
4^{6,7}	80 bp	1070 bp	02010101-020115, 020118-020119, 020301-0204, 020601-0207, 0209-0213, 0215N-0222, 0224-023501, 023503-0244, 0245 ^{weakly} , 0246, 0249, 0251-0254, 0256 ^{weakly} , 0257-0262, 0264-0277, 0278 ^{weakly} , 0279-0297, 0299, 9201, 9202, 9204-9214, 9216-9221, 9223-9228, 9230-9241	030103 ^{weakly} , 0323, 260702, 3308, 3309, 6830, 7404
5⁶	125 bp	1070 bp	02010101-020115, 020117-020119, 0204, 020601-0207, 0209-0211, 0214-0218, 022001-0221, 0225, 0226, 0228-0236, 0239-0243N, 0245, 0246, 0248, 0251-0253N, 0255-0262, 0264, 0266, 0267, 0268 ^{weakly} , 0269-0297, 0299, 9201, 9203, 9205-9214, 9216, 9218-9221, 9223-9234, 9238-9241	0317 ^{weakly} , 2301, 2304-2319Q, 241301-241302, 2418 ^{weakly} , 2424, 6808, 6901
6^{5,6,8}	75 bp	800 bp	0202-020302, 0205, 0208, 0222, 0247, 0249, 0250, 0263, 9202, 9204, 9215, 9217, 9222, 9236	680101-6807, 6810-6825, 6827-6842
7⁷	175 bp	1070 bp	0202, 0205, 0208, 0214, 0247, 0263, 9202, 9215	
8⁹	415, 505 bp	1070 bp	0202, 0205, 0214, 0232N, 0247, 0263,	

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9202, 9215			
9⁶	105 bp	1070 bp	020301, 020302 ^{weakly} , 0225, 0238, 9217
10^{6,8}	115 bp	800 bp	020301, 020302 ^{weakly} , 0213, 0226, 0238, 0299, 9217
11^{5,10}	225, 335 bp	1070 bp	0204, 021701-021702, 0257, 0265, 0289, 9208, 9210
12^{5,8,11}	195, 235 bp	1070 bp	0205-020606, 0208, 0210, 0214, 0221, 0228, 0241, 0244, 0251, 0254, 0257, 0261, 0272, 0279, 0284, 0285, 0291, 0299, 9206, 9208, 9222, 9226, 9227, 9237
13⁶	145 bp	800 bp	0205, 0208, 0214, 0284
14^{6,7,12}	95, 170 bp	1070 bp	0207, 0215N, 0218, 0291, 9203, 9212, 9230
15^{5,6,13}	125, 265, 305 bp	800 bp	0221, 0287, 0296, 9212, 9229, 9236
16	155 bp	1070 bp	0209, 0249, 0250, 0273, 0293, 9222
			1116, 68020101-680202, 6815, 6818N, 6825, 6827, 6828, 6831, 6834, 6840
17^{5,14}	205, 360 bp	1070 bp	0210, 021701-021702, 0239, 0283N, 9208, 9210
18⁸	175 bp	1070 bp	0211, 0229, 0269, 9228
19^{6,7}	125 bp	1070 bp	0212, 0213, 0219, 0227, 0237, 0238, 0244, 0254
			24020101-2405, 2407-2411N, 2414, 2415, 2417, 2419, 2420, 2423, 2425-2464, 2466-2486N, 6809, 6826
20^{6,7}	295 bp	1070 bp	0249
21⁷	220 bp	1070 bp	0215N
22⁷	160 bp	1070 bp	0219, 0236, 0237, 0254
			2301, 2302, 2305-2319Q, 24020101-240215, 2404-

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				2409N, 2411N, 241301-2415, 2417, 2419, 2420, 2423 ^{weakly} , 2424- 2432, 2434-2464, 2466-2474, 2476- 2486N, 6826
23 ^{5,6,7,15}	140, 180 bp	800 bp	021701-021702, 0231, 9208, 9210	
24 ^{6,7}	115 bp	1070 bp	0227	2459
25 ⁶	145 bp	1070 bp	0216, 9231	2455 ^{weakly}
26 ^{6,8,16}	125, 165 bp	800 bp	0233, 0252	
27 ^{6,17}	95, 145 bp	1070 bp	0210, 0228, 0250, 0252, 0273, 0293, 0295, 9210, 9214, 9217, 9222	1116, 3013, 3016, 680101-6811N, 6813-6842
28	235 bp	800 bp	0208, 022001-022002, 0255, 0256, 0262, 0278, 9203, 9228	2620, 3008, 680302
29 ⁶	220 bp	1070 bp	0245, 0246, 0248, 0256 ^{weakly} , 0278 ^{weakly} , 0292, 9203, 9229 ^{weakly}	3008
30 ^{7,8}	160 bp	800 bp	0243N, 9204	
31 ^{6,18}	95, 220 bp	1070 bp	0245, 0256, 0278, 0282N, 9203	3008
32 ¹⁹	230, 255 bp	1070 bp	0246-0248, 0270, 9229	
33 ^{6,7,8}	325 bp	1070 bp	0219, 0236, 0237, 0254	6826
34 ^{6,20}	120, 180 bp	800 bp	0234-023502, 0256, 0262, 0278, 0288N, 9203	300101-300102, 3008, 301101- 301102, 3014L- 3020, 3023, 3024
35 ^{6,21}	110, 155 bp	1070 bp	0240, 0251, 0277, 9230	2301, 2302 ^{weakly} , 2304-2319Q, 2424, 2471
36 ^{5,6,22}	85, 445 bp	1070 bp	0224, 0265, 0294N, 9235, 9237	0309, 1106, 1118, 2603, 2606, 2621, 2630, 3013, 3016, 3208, 7406, 8001 ^{weakly}
37 ^{6,23}	130, 145 bp	1070 bp	0238, 0268, 9201	2310 ^{weakly} , 2410, 2446 ^{weakly} , 2610
38 ^{6,7}	125 bp	800 bp	0241, 0280, 9217	
39 ^{6,7}	75 bp	1070 bp	0218	
40 ^{6,7,8,24}	90, 210 bp	1070 bp	0240, 0251, 0267, 9230	

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41⁸	185 bp	1070 bp	0202, 0205, 0208, 0214, 021701-021702, 0247, 0257, 0258, 0263, 0275, 9202, 9208, 9210, 9215	
42⁵	225 bp	800 bp	0234-023503, 0256, 0262, 9203	0113, 0117, 03010101-0307, 0309-0311N, 0313- 0331, 0333-0335, 0337-0339, 3408
43^{7,25}	180, 225 bp	800 bp	020301-020302, 0222, 0249, 0271, 9204, 9217, 9236	2622
44	155 bp	800 bp	0259	
45^{6,26}	105, 185 bp	1070 bp	0219, 0239, 0244, 0260, 0279, 0286	0120, 2414
46^{6,27}	70, 205 bp	800 bp	0261, 0266	
47^{6,8}	165 bp	800 bp	0263	
48⁶	110 bp	1070 bp	0264, 0272	
49⁶	145 bp	1070 bp	0238, 9201	2310 ^{weakly} , 2410, 2446 ^{weakly} , 2610
50⁶	140 bp	800 bp	02010102L	
51	410 bp	1070 bp	0265, 0280, 9214, 9217	0309, 1106, 1118, 3208, 6805, 6820, 7406, 8001 ^{weakly}
52	185 bp	800 bp	0276	3022
53	225 bp	1070 bp	0214, 021701-021702, 0257, 0258, 9208, 9210	2301, 230301-2313, 2315-2319Q, 241301, 2418, 2424, 2907
54	350 bp	800 bp	027401-027402	
55⁷	200 bp	1070 bp	0230	
56	275 bp	1070 bp	0253N, 0281, 9224	
57⁶	105 bp	1070 bp	0242	
58	255 bp	800 bp	0211, 023501-023503, 0248, 0269, 0278, 0290, 9228	3008, 680302
59^{6,7}	145 bp	800 bp	0297	
60	345 bp	1070 bp	0250, 0265, 0273, 9222, 9235	2603, 2606, 2621, 2630, 3208, 6805, 6815, 6820, 7406
61	185 bp	1070 bp	0250, 0273, 9222	1116, 680101- 6811N, 6813-6842
62	180 bp	800 bp	0269	680101-6832, 6834- 6842

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63	160 bp	800 bp	9205	
64⁶	125 bp	1070 bp	9206	2472
65	185 bp	1070 bp	9207	
66	170 bp	800 bp	9209	
67⁶	120 bp	800 bp	9211	
68	215 bp	1070 bp	9213N	
69⁸	170 bp	1070 bp	9214	
70⁶	125 bp	800 bp	9215	
71	260 bp	800 bp	9216	
72^{5,6}	95 bp	1070 bp	0219, 0244, 9218	0317, 2301 ^{weakly} , 2302 ^{weakly} , 2304- 2319Q ^{weakly} , 24020101-2411N, 241301-2415, 2417- 2420, 2422, 2423, 2424 ^{weakly} , 2425- 2464, 2466-2486N
73	200 bp	1070 bp	9219	
74	175 bp	800 bp	9220	
75	205 bp	1070 bp	9221	6814
76	230 bp	800 bp	9222	
77⁶	85 bp	1070 bp	9223	
78	240 bp	1070 bp	9224	
79	225 bp	1070 bp	9225N	
80	230 bp	1070 bp	9226	
81	315 bp	1070 bp	9227	
82⁶	130 bp	1070 bp	9231	
83⁶	100 bp	800 bp	9232	
84	185 bp	800 bp	9233	
85	260 bp	800 bp	9234	
86	200 bp	800 bp	9235	
87	155 bp	1070 bp	9238	
88	240 bp	1070 bp	9239	
89⁶	115 bp	1070 bp	9240	3315
90^{6,8}	105 bp	800 bp	9241	
91	155 bp	800 bp	0250, 0273, 0293, 9222	1116, 68020101- 680202, 6815, 6818N, 6825, 6827, 6828, 6831, 6834, 6840

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¹ Alleles 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*02 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 length 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.

² The 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*02 subtyping.

In addition, wells number 6, 10, 13, 15, 23, 26, 28, 30, 34, 38, 42, 43, 44, 46, 47, 50, 52, 54, 58, 59, 62, 63, 66, 67, 70, 71, 74, 76, 83, 84, 85, 86, 90 and 91 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

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

³ For several HLA-B alleles 1st and 4th exon 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. We assume that unknown sequences in the 1st and 4th exons are conserved within allelic groups.

⁴ Due to the sharing of sequence motifs between HLA-A alleles non-HLA-A*02 alleles will be amplified by primer mixes 1 to 6, 9 to 12, 16, 17, 19, 22, 24, 25, 27 to 29, 31, 33 to 37, 42, 43, 45, 49, 51 to 53, 58, 60 to 62, 64, 72, 75, 89 and 91.

⁵ The specific primers in primer mixes 3, 6, 11, 12, 15, 17, 23, 36, 42 and 72 may yield less specific PCR products than the other HLA-A*02 primer mixes, most pronounced for primer mixes 3 and 72.

⁶ Short specific PCR fragments are less intense and not as sharp as longer specific bands.

⁷ Primer mixes 4, 7, 14, 19, 20, 21, 22, 23, 24, 30, 33, 38, 39, 40, 43, 55 and 59 have a tendency of giving rise to a primer oligomer artefact, most pronounced for primer mixes 14, 23, 33, 39 and 55.

⁸ Primer mixes 6, 10, 12, 18, 26, 30, 33, 40, 41, 47, 69 and 90 have a tendency of giving rise to nonspecific amplifications.

⁹ Primer mix 8: Specific PCR fragment of 415 bp in the A*0202, 0205, 0214, 0247, 0263, 9202 and 9215 alleles. Specific PCR fragment of 505 bp in the A*0232N allele.

¹⁰ Primer mix 11: Specific PCR fragment of 225 bp in the A*0289 allele. Specific PCR fragment of 335 bp in the A*0204, 021701-021702, 0257, 0265, 9208, 9210 and the A*2312, 2428, 2430, 2442, 3208, 6805, 6820 and 7406 alleles.

Primer mix 11 may give rise to a long fragment of approx. 600 bp in some HLA-A alleles. This band should not be considered in the interpretation of HLA-A*02 typings.

¹¹ Primer mix 12: Specific PCR fragment of 195 bp in A*0285 allele. Specific PCR fragment of 235 bp in the A*0205 to 020606, 0208, 0210, 0214, 0221, 0228, 0241, 0244, 0251, 0254, 0257, 0261, 0272, 0279, 0284, 0291, 0299, 9206, 9208, 9222, 9226, 9227, 9237 and the A*1106, 1118, 2603, 2606, 2621, 2630, 6805, 6815 and 6820 alleles.

¹² Primer mix 14: Specific PCR fragment of 95 bp in A*9203 allele. Specific PCR fragment of 170 bp in the A*0207, 0215N, 0218, 0291, 9212 and 9230 alleles.

¹³ Primer mix 15: Specific PCR fragment of 125 bp in the A*0221 allele. Specific PCR fragment of 265 bp in the A*0287, 9212, 9229 and 9236 alleles. Specific PCR fragment of 305 bp in the A*0296 allele.

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¹⁴Primer mix 17: Specific PCR fragment of 205 bp in the A*0283N allele. Specific PCR fragment of 360 bp in the A*0210, 021701-021702, 0239, 9208, 9210 and the A*2312, 2428, 2430 and 2442 alleles.

¹⁵Primer mix 23: Specific PCR fragment of 140 bp in the A*0231 allele. Specific PCR fragment of 180 bp in the A*021701-021702, 9208 and 9210 alleles.

¹⁶Primer mix 26: Specific PCR fragment of 125 bp in the A*0233 allele. Specific PCR fragment of 165 bp in the A*0252 allele.

¹⁷Primer mix 27: Specific PCR fragments of 95 bp in the A*0228 and the A*3013 and 3016 alleles. Specific PCR fragments of 145 bp in A*0210, 0250, 0252, 0273, 0293, 0295, 9210, 9214, 9217, 9222 and the A*1116, 6801010 to 6811N, 6813 to 6842.

¹⁸Primer mix 31: Specific PCR fragment of 95 bp in A*0282N allele. Specific PCR fragments of 220 bp in A*0245, 0256, 0278, 9203 and the A*3008 alleles.

¹⁹Primer mix 32: Specific PCR fragment of 230 bp in the A*0246, 0248, 0270 and 9229 alleles. Specific PCR fragment of 255 bp in the A*0247 allele.

²⁰Primer mix 34: Specific PCR fragment of 120 bp in the A*0288N allele. Specific PCR fragment of 180 bp in the A**0234 to 023502, 0256, 0262, 0278, 9203 and the A*300101-300102, 3008, 301101-301102, 3014L to 3020, 3023 and 3024 alleles.

Primer mix 34 may give rise to a long fragment of approx. 600 bp in some HLA-A alleles. This band should not be considered in the interpretation of HLA-A*02 typings.

²¹Primer mix 35: Specific PCR fragment of 110 bp in A*0240, 0251, 9230 and the A*2301, 2302^{weakly}, 2304 to 2319Q, 2424 and 2471 alleles. Specific PCR fragment of 155 bp in A*0277 allele.

²²Primer mix 36: Specific PCR fragment of 85 bp in A*0294N allele. Specific PCR fragments of 445 bp in the A*0224, 0265, 9235, 9237 and the A*0309, 1106, 1118, 2603, 2606, 2621, 2630, 3013, 3016, 3208, 7406 and 8001^{weakly} alleles.

²³Primer mix 37: Specific PCR fragment of 130 bp in the A*0268 allele. Specific PCR fragments of 145 bp in A*0238, 9201 and the A*2310^{weakly}, 2410, 2446^{weakly} and 2610 alleles.

²⁴Primer mix 40: Specific PCR fragment of 90 bp in the A*0267 allele. Specific PCR fragment of 210 bp in the A*0240, 0251 and 9230 alleles.

²⁵Primer mix 43: Specific PCR fragment of 180 bp in the A*0271 allele. Specific PCR fragment of 225 bp in the A*020301-020302, 0222, 0249, 9204, 9217, 9236 and the A*2622 alleles.

²⁶Primer mix 45: Specific PCR fragment of 105 bp in the A*0260 allele. Specific PCR fragment of 185 bp in the A*0219, 0239, 0244, 0279, 0286 and the A*0120, 2414 alleles.

²⁷Primer mix 46: Specific PCR fragment of 70 bp in the A*0266 allele. Specific PCR fragment of 205 bp in the A*0261 allele.

INTERPRETATION TABLE																				
HLA-A*02 high resolution SSP typing																				
Amplification patterns of the HLA-A*0201 to *9241 alleles																				
Well ³																				
4	5	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7	7	7
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
145	140	410	185	225	350	200	275	105	255	145	345	185	180	160	125	185	170	130	215	170
140	185	225	350	200	275	105	255	145	345	185	180	160	125	185	170	130	215	170	125	260
1070	800	1070	800	1070	800	1070	1070	800	800	1070	1070	800	800	1070	1070	800	800	1070	1070	800
800	1070	800	1070	800	1070	1070	800	800	1070	1070	800	800	1070	1070	800	800	1070	1070	800	800
4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	7	7	7
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Length of spec.																				
PCR product(s)																				
Length of int.																				
pos. control ¹																				
Well No.																				
HLA-A allele ²																				
*02010101, 02010103 020102, 020104- 020115, 020118- 020119																				
*02010102L																				
*020103																				
*020117																				
*0202																				
*020301																				
*020302																				
*0204																				
*0205																				
*020601-020606																				
*0207																				
*0208																				
*0209																				
*0210																				
*0211																				
*0212																				
*0213																				
*0214																				
*0215N																				
*0216																				
*021701-021702																				
*0218																				
*0219																				
*022001-022002																				
*0221																				
*0222																				
*0224																				
*0225																				
*0226																				
*0227																				
*0228																				
*0229																				
*0230																				
*0231																				
*0232N																				
4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	7	7	7
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
Well No.																				
HLA-A allele ²																				

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101.412-24u/04u – without Taq polymerase

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																																								Well No.				
4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9	HLA-A allele ²						
																																							*0233					
																																							*0234					
																																							*023501					
																																							*023502					
																																							*023503					
																																							*0236					
																																							*0237					
																																							*0238					
																																							*0239					
																																							*0240					
																																							*0241					
																																							*0242					
																																							*0243N					
																																							*0244					
																																							*0245					
																																							*0246					
																																							*0247					
																																							*0248					
																																							*0249					
																																							*0250					
																																							*0251					
																																							*0252					
																																							*0253N					
																																							*0254					
																																							*0255					
																																							*0256					
																																							*0257					
																																							*0258					
																																							*0259					
																																							*0260					
																																							*0261					
																																							*0262					
																																							*0263					
																																							*0264					
																																							*0265					
																																							*0266					
																																							*0267					
																																							*0268					
																																							*0269					
																																							*0270					
																																							*0271					
																																							*0272					
																																							*0273					
																																							*027401-027402					
																																							*0275					
																																							*0276					
																																							*0277					
																																							*0278					
																																							*0279					
																																							*0280					
																																							*0281					
4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9	Well No.
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	HLA-A allele ²	

101.412-24/04 – including *Taq* polymerase

101.412-24u/04u – without *Taq* polymerase

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																								Well No.																			
4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	9	9	HLA-A allele ²				
																																									*9235		
																																									*9236		
																																									*9237		
																																									*9238		
																																									*9239		
																																									*9240		
																																									*9241		
																																									*0113, 0117, 03010101-030102, 030104-0307, 0310, 0311N, 0313-0316, 0318-0322, 0324- 0331, 0333-0335, 0337-0339		
																																									*0120		
																																									*030103		
																																									*0309		
																																									*0317		
																																									*0323		
																																									*1106, 1118		
																																									*1116		
																																									*2301, 2305-2309, 2311N, 2313, 2315- 2319Q		
																																									*2302		
																																									*230301-230302		
																																									*2304		
																																									*2310		
																																									*2312		
																																									*2314		
																																									*24020101-240215, 2404, 2405, 2407- 2409N, 2411N, 2415, 2417, 2419, 2420, 2425-2427, 2429, 2431, 2432, 2434- 2441, 2443-2445N, 2447-2454, 2457, 2458, 2460N-2464, 2466-2470, 2473, 2474, 2476-2486N		
																																									*240301-240302, 2433, 2475		
																																									*2406		
																																									*2410		
																																									*241301		
																																									*241302		
																																									*2414		
																																									*2418		
																																									*2422		
																																									*2423		
																																									*2424		
4	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	Well No.				
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	HLA-A allele ²

4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9		Well No.	
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1					HLA-A allele ²		
																																						*2428, 2430, 2442	
																																							*2446
																																							*2455
																																							*2456
																																							*2459
																																							*2471
																																							*2472
																																							*2603, 2606, 2621, 2630
																																							*260702, 3308, 3309
																																							*2610
																																							*2620
																																							*2622
																																							*2907
																																							*300101-300102, 301101-301102, 3014L, 3015, 3017-3020, 3023, 3024
																																							*3008
																																							*3013
																																							*3016
																																							*3022
																																							*3208
																																							*3315
																																							*3408
																																							*680101-680107, 680301, 6804, 6806, 6807, 6810, 6811N, 6813, 6816, 6817, 6819, 6821, 6822, 6824, 6829, 6832, 6835-6839, 6841
																																							*68020101-680202, 6818N, 6827, 6828, 6831, 6834, 6840
																																							*680302
																																							*6805, 6820
																																							*6808
																																							*6809
																																							*6812
																																							*6814
																																							*6815
																																							*6823
																																							*6825
																																							*6826
																																							*6830
																																							*6833
																																							*6842
																																							*6901
																																							*7404
																																							*7406
																																							*8001
4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	9	9	Well No.	
9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1					HLA-A allele ²		

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Lot-specific information

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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*02 subtyping. .

In addition, wells number 6, 10, 13, 15, 23, 26, 28, 30, 34, 38, 42, 43, 44, 46, 47, 50, 52, 54, 58, 59, 62, 63, 66, 67, 70, 71, 74, 76, 83, 84, 85, 86, 90 and 91 contain the primer pair giving rise to the shorter, 800 bp, internal positive control band in order to allow kit identification.

²The sequence of A*020116 has been renamed to A*9234.

The sequence of A*020120 has been shown to be identical to A*020118

The sequence of the A*0223 allele has been shown to be identical to A*0222.

The sequence of the A*0298 allele has been shown to be identical to A*0296.

³Primer mix 8: Specific PCR fragment of 415 bp in the A*0202, 0205, 0214, 0247, 0263, 9202 and 9215 alleles. Specific PCR fragment of 505 bp in the A*0232N allele.

Primer mix 11: Specific PCR fragment of 225 bp in the A*0289 allele. Specific PCR fragment of 335 bp in the A*0204, 021701-021702, 0257, 0265, 9208, 9210 and the A*2312, 2428, 2430, 2442, 3208, 6805, 6820 and 7406 alleles.

Primer mix 11 may give rise to a long fragment of approx. 600 bp in some HLA-A alleles. This band should not be considered in the interpretation of HLA-A*02 typings.

Primer mix 12: Specific PCR fragment of 195 bp in A*0285 allele. Specific PCR fragment of 235 bp in the A*0205 to 020606, 0208, 0210, 0214, 0221, 0228, 0241, 0244, 0251, 0254, 0257, 0261, 0272, 0279, 0284, 0291, 0299, 9206, 9208, 9222, 9226, 9227, 9237 and the A*1106, 1118, 2603, 2606, 2621, 2630, 6805, 6815 and 6820 alleles.

Primer mix 14: Specific PCR fragment of 95 bp in A*9203 allele. Specific PCR fragment of 170 bp in the A*0207, 0215N, 0218, 0291, 9212 and 9230 alleles.

Primer mix 15: Specific PCR fragment of 125 bp in the A*0221 allele. Specific PCR fragment of 265 bp in the A*0287, 9212, 9229 and 9236 alleles. Specific PCR fragment of 305 bp in the A*0296 allele.

Primer mix 17: Specific PCR fragment of 205 bp in the A*0283N allele. Specific PCR fragment of 360 bp in the A*0210, 021701-021702, 0239, 9208, 9210 and the A*2312, 2428, 2430 and 2442 alleles.

Primer mix 23: Specific PCR fragment of 140 bp in the A*0231 allele. Specific PCR fragment of 180 bp in the A*021701-021702, 9208 and 9210 alleles.

Primer mix 26: Specific PCR fragment of 125 bp in the A*0233 allele. Specific PCR fragment of 165 bp in the A*0252 allele.

Primer mix 27: Specific PCR fragments of 95 bp in the A*0228 and the A*3013 and 3016 alleles. Specific PCR fragments of 145 bp in A*0210, 0250, 0252, 0273, 0293, 0295, 9210, 9214, 9217, 9222 and the A*1116, 6801010 to 6811N, 6813 to 6842.

Primer mix 31: Specific PCR fragment of 95 bp in A*0282N allele. Specific PCR fragments of 220 bp in A*0245, 0256, 0278, 9203 and the A*3008 alleles.

Primer mix 32: Specific PCR fragment of 230 bp in the A*0246, 0248, 0270 and 9229 alleles. Specific PCR fragment of 255 bp in the A*0247 allele.

Primer mix 34: Specific PCR fragment of 120 bp in the A*0288N allele. Specific PCR fragment of 180 bp in the A**0234 to 023502, 0256, 0262, 0278, 9203 and the A*300101-300102, 3008, 301101-301102, 3014L to 3020, 3023 and 3024 alleles.

Primer mix 34 may give rise to a long fragment of approx. 600 bp in some HLA-A alleles. This band should not be considered in the interpretation of HLA-A*02 typings.

Primer mix 35: Specific PCR fragment of 110 bp in A*0240, 0251, 9230 and the A*2301, 2302^{weakly}, 2304 to 2319Q, 2424 and 2471 alleles. Specific PCR fragment of 155 bp in A*0277 allele.

Primer mix 36: Specific PCR fragment of 85 bp in A*0294N allele. Specific PCR fragments of 445 bp in the A*0224, 0265, 9235, 9237 and the A*0309, 1106, 1118, 2603, 2606, 2621, 2630, 3013, 3016, 3208, 7406 and 8001^{weakly} alleles.

Primer mix 37: Specific PCR fragment of 130 bp in the A*0268 allele. Specific PCR fragments of 145 bp in A*0238, 9201 and the A*2310^{weakly}, 2410, 2446^{weakly} and 2610 alleles.

Primer mix 40: Specific PCR fragment of 90 bp in the A*0267 allele. Specific PCR fragment of 210 bp in the A*0240, 0251 and 9230 alleles.

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Primer mix 43: Specific PCR fragment of 180 bp in the A*0271 allele. Specific PCR fragment of 225 bp in the A*020301-020302, 0222, 0249, 9204, 9217, 9236 and the A*2622 alleles.

Primer mix 45: Specific PCR fragment of 105 bp in the A*0260 allele. Specific PCR fragment of 185 bp in the A*0219, 0239, 0244, 0279, 0286 and the A*0120, 2414 alleles.

Primer mix 46: Specific PCR fragment of 70 bp in the A*0266 allele. Specific PCR fragment of 205 bp in the A*0261 allele.

w', might be weakly amplified.

101.412-24/04 – including *Taq* polymerase101.412-24u/04u – without *Taq* polymeraseLot No.: **91E**

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Tube No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	360	230	175	80	125	75	175	415	105	115	225	195
PCR product								505			335	235
Length of int.	800	1070	1070	1070	1070	800	1070	1070	1070	800	1070	1070
pos. control ¹												
5'-primer(s) ²	292	102	362	200	453	506	402	270	453	453	292	98
	5'-CT C 3'	5'-ACA 3'	5'-g Ag 3'	5'-C CA 3'	5'-AAA 3'	5'-g CA 3'	5'-CTg 3'	5'-AAA 3'	5'-AAA 3'	5'-AAA 3'	5'-CT C 3'	5'-C TA 3'
											648	362
											5'-CAA 3'	5'-g Ag 3'
3'-primer(s) ³	368	292	497	240	539	539	538	402	517	527	362	292
	5'-CA T 3'	5'-gTg 3'	5'-Tg g 3'	5'-g gA 3'	5'-TC A 3'	5'-TC C 3'	5'-CCA 3'	5'-C gC 3'	5'-CgT 3'	5'-CC T 3'	5'-TC A 3'	5'-gTg 3'
				241			538	493			831	518
				5'-CgC 3'			5'-CAA 3'	5'-CTA 3'			5'-T CC 3'	5'-CCA 3'
Tube No.	1	2	3	4	5	6	7	8	9	10	11	12

Tube No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec.	145	95	125	155	205	175	125	295	220	160	140	115
PCR product		170	265		360						180	
Length of int.	800	1070	800	1070	1070	1070	1070	1070	1070	1070	800	1070
pos. control ¹												
5'-primer(s) ²	98	368	78	385	292	144	453	2 nd I	666	453	194	453
	5'-C TA 3'	5'-g Tg 3'	5'-TCT 3'	5'-gg C 3'	5'-CT C 3'	5'-gCA 3'	5'-AAA 3'	5'-CCA 3'	5'-gAA 3'	5'-AAA 3'	5'-C gg 3'	5'-AAA 3'
	355	445		666	666						368	
	5'-CC T 3'	5'-TC T 3'		5'-gAA 3'	5'-gAA 3'						5'-g TT 3'	
3'-primer(s) ³	200	497	160	497	368	268	538	538	843	570	292	527
	5'-TC C 3'	5'-Tg g 3'	5'-gTT 3'	5'-Tg g 3'	5'-CA A 3'	5'-TTg 3'	5'-CTg 3'	5'-CCg 3'	5'-g TT 3'	5'-C Cg 3'	5'-gTg 3'	5'-CC g 3'
	453		302	779	829	290					506	
	5'-T CT 3'		5'-gg T 3'	5'-CT T 3'	5'-CTA 3'	5'-CA A 3'					5'-TgT 3'	
			343									
			5'-ACA 3'									
Tube No.	13	14	15	16	17	18	19	20	21	22	23	24

Tube No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec.	145	125	95	235	220	160	95	230	325	120	110	85
PCR product		165	145				220	255		180	155	445
Length of int.	1070	800	1070	800	1070	800	1070	1070	1070	800	1070	1070
pos. control ¹												
5'-primer(s) ²	453	2 nd I	238	78	78	666	78	78	2 nd I	144	453	292
	5'-AAA 3'	5'-CCA 3'	5'-Ag A 3'	5'-TCT 3'	5'-TCT 3'	5'-gAA 3'	5'-TCT 3'	5'-TCT 3'	5'-CCA 3'	5'-gCA 3'	5'-AAA 3'	5'-CT C 3'
			391				564			420		
			5'-AC g 3'				5'-TgA 3'			5'-TAg 3'		
			391									
			5'-AC g 3'									
3'-primer(s) ³	559	368	292	270	257	781	256	265	570	282	524	335
	5'-CTC 3'	5'-CA g 3'	5'-gTg 3'	5'-A Cg 3'	5'-CC T 3'	5'-C CC 3'	5'-CTg 3'	5'-CCC 3'	5'-C Cg 3'	5'-g AC 3'	5'-CA C 3'	5'-g C 3'
		411	497	270		791	616	290		497	569	453
		5'-T CA 3'	5'-Tg g 3'	5'-A CA 3'		5'-Ag T 3'	5'-CgT 3'	5'-gA C 3'		5'-Tg g 3'	5'-AC A 3'	5'-T Cg 3'
Tube No.	25	26	27	28	29	30	31	32	33	34	35	36

101.412-24/04 – including *Taq* polymerase101.412-24u/04u – without *Taq* polymeraseLot No.: **91E**

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Tube No.	37	38	39	40	41	42	43	44	45	46	47	48
Length of spec.	130	125	75	90	185	225	180	155	105	70	165	110
PCR product	145			210			225		185	205		
Length of int.	1070	800	1070	1070	1070	800	800	800	1070	800	800	1070
pos. control ¹												
5'-primer(s) ²	453	414	453	355	355	98	355	125	355	78	78	235
	5'-AAA 3'	5'-CAG 3'	5'-AAA 3'	5'-CC g 3'	5'-CC C 3'	5'-C TT 3'	5'-CC g 3'	5'-C gA 3'	5'-CC g 3'	5'-TCT 3'	5'-TCT 3'	5'-Ag A 3'
					692					746		419
					5'-g AA 3'					5'-g AT 3'		5'-g TC 3'
3'-primer(s) ³	542	497	485	403	506	282	494	240	419	241	203	292
	5'-CT T 3'	5'-Tg g 3'	5'-CC T 3'	5'-gCA 3'	5'-Tg T 3'	5'-g AC 3'	5'-TC C 3'	5'-g gA 3'	5'-Cg A 3'	5'-CgC 3'	5'-TC A 3'	5'-gTg 3'
	559			524	831		539		497	777		497
	5'-CCg 3'			5'-CA C 3'	5'-T CC 3'		5'-TC C 3'		5'-Tg A 3'	5'-g CA 3'		5'-Tg g 3'
Tube No.	37	38	39	40	41	42	43	44	45	46	47	48

Tube No.	49	50	51	52	53	54	55	56	57	58	59	60
Length of spec.	145	140	410	185	225	350	200	275	105	255	145	345
PCR product												
Length of int.	1070	800	1070	800	1070	800	1070	1070	1070	800	800	1070
pos. control ¹												
5'-primer(s) ²	453	-111	292	98	355	2 nd I	81	78	78	78	666	292
	5'-AAA 3'	5'-ATC 3'	5'-CT C 3'	5'-C TC 3'	5'-CC C 3'	5'-CCA 3'	5'-CAG 3'	5'-TCT 3'	5'-TCT 3'	5'-TCT 3'	5'-gAA 3'	5'-CT C 3'
							385					
							5'-gg C 3'					
3'-primer(s) ³	559	4	418	240	538	595	240	302	142	292	768	355
	5'-CCg 3'	5'-ggC 3'	5'-gTC 3'	5'-g gA 3'	5'-CAA 3'	5'-CCg 3'	5'-g gA 3'	5'-gg C 3'	5'-TgA 3'	5'-gT C 3'	5'-g Tg 3'	5'-gA T 3'
						595		324				
						5'-CCT 3'		5'-T AC 3'				
Tube No.	49	50	51	52	53	54	55	56	57	58	59	60

Tube No.	61	62	63	64	65	66	67	68	69	70	71	72
Length of spec.	185	180	160	125	185	170	130	215	170	125	260	95
PCR product												
Length of int.	1070	800	800	1070	1070	800	800	1070	1070	800	800	1070
pos. control ¹												
5'-primer(s) ²	355	666	420	530	78	112	406	78	2 nd I	78	78	453
	5'-CC A 3'	5'-gAA 3'	5'-TAT 3'	5'-g gT 3'	5'-TCT 3'	5'-CC T 3'	5'-gC A 3'	5'-TCT 3'	5'-CCA 3'	5'-TCT 3'	5'-TCT 3'	5'-AAA 3'
3'-primer(s) ³	497	806	538	616	221	240	497	251	413	164	298	506
	5'-Tg g 3'	5'-CC A 3'	5'-CAA 3'	5'-CgT 3'	5'-AC A 3'	5'-g gA 3'	5'-Tg g 3'	5'-CC T 3'	5'-gC C 3'	5'-gC T 3'	5'-CAG 3'	5'-Tg C 3'
Tube No.	61	62	63	64	65	66	67	68	69	70	71	72

101.412-24/04 – including *Taq* polymerase101.412-24u/04u – without *Taq* polymeraseLot No.: **91E**

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Tube No.	73	74	75	76	77	78	79	80	81	82	83	84
Length of spec.	200	175	205	230	85	240	225	230	315	130	100	185
PCR product												
Length of int.	1070	800	1070	800	1070	1070	1070	1070	1070	1070	800	800
pos. control ¹												
5'-primer(s) ²	78	104	453	48	78	666	78	666	2 nd I	666	808	78
	5'-TCT 3'	5'-A TA 3'	5'-AAA 3'	5'-gCT 3'	5'-TCT 3'	5'-gAA 3'	5'-TCT 3'	5'-gAA 3'	5'-CCA 3'	5'-gAA 3'	5'-Cg A 3'	5'-TCT 3'
3'-primer(s) ³	239	240	616	106	121	866	260	853	559	755	868	221
	5'-gA T 3'	5'-g gA 3'	5'-CgC 3'	5'-CAT 3'	5'-gCA 3'	5'-AA A 3'	5'-T. T 3'	5'-CAT 3'	5'-A TT 3'	5'-CC A 3'	5'-CAA 3'	5'-AC C 3'
Tube No.	73	74	75	76	77	78	79	80	81	82	83	84

Tube No.	85	86	87	88	89	90	91
Length of spec.	260	200	155	240	115	105	155
PCR product							
Length of int.	800	800	1070	1070	1070	800	800
pos. control ¹							
5'-primer(s) ²	666	2 nd I	78	78	652	78	385
	5'-gAA 3'	5'-CCA 3'	5'-TCT 3'	5'-TCT 3'	5'-CTg 3'	5'-TCT 3'	5'-gg C 3'
3'-primer(s) ³	884	423	193	277	727	143	497
	5'-ggA 3'	5'-TAA 3'	5'-Cgg 3'	5'-ggT 3'	5'-CCA 3'	5'-CTA 3'	5'-Tg g 3'
Tube No.	85	86	87	88	89	90	91

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*02 subtyping. .

In addition, wells number 6, 10, 13, 15, 23, 26, 28, 30, 34, 38, 42, 43, 44, 46, 47, 50, 52, 54, 58, 59, 62, 63, 66, 67, 70, 71, 74, 76, 83, 84, 85, 86, 90 and 91 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 5' upstream region, 2nd, 3rd or 4th exons or the 2nd 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.

CELL LINE VALIDATION SHEET					Well															
HLA-A*02 SSP subtyping kit																				
				Lot No.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					200738501	200738502	200738503	200738504	200738505	200738506	200849407	200738508	200738509	200738510	200849411	200738512	200738513	200738514	200738515	200738516
	IHWC cell line	A*	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	9007 DEM	*0201	*3101		+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*2601			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*2402			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*0201			+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*0201			+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*2402			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*s902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953549	*0301	*8001		W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*3301	*7401		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*0201			+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*0201			+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*0217			-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
22	9056 KOSE	*0201			+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-
23	9061 31227ABO	*0201			+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*3201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*3301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*0205			+	-	+	+	-	+	+	+	-	-	-	+	+	-	-	-
27	9191 CJ1007	*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	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	*0201	*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		+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-

101.412-24/04 – including *Taq* polymerase
 101.412-24u/04u – without *Taq* polymerase

Lot No.: **91E**

Lot-specific information

www.olerup.com

CELL LINE VALIDATION SHEET																					
HLA-A*02 SSP subtyping kit																					
				Lot No.:	Well																
					17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
					200738517	200738518	200738519	200738520	200738521	200738522	200849423	200738524	200738525	200738526	200849427	200738528	200738529	200738530	200849431	200738532	
	IHWC cell line	A*	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	9007 DEM	*0201	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*2601			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*2402			-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*2402			-	-	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*s902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953549	*0301	*8001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*3301	*7401		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*0217			+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9061 31227ABO	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*3201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*3301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*0205			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CJ1007	*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	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	*0201	*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		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



CELL LINE VALIDATION SHEET																					
HLA-A*02 SSP subtyping kit																					
				Lot No.:	Well																
					33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
					200849433	200738534	200738535	200738536	200738537	200738538	200738539	200738540	200738541	200738542	200738543	200738544	200738545	200738546	200738547	200738548	
	IHWC cell line	A*	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	9007 DEM	*0201	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*2601			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*2402			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*2402			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*s902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953549	*0301	*8001		-	-	-	W	-	-	-	-	-	+	-	-	-	-	-	-	-
18	9257 32367	*3301	*7401		-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
19	9038 BM16	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*0217			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
22	9056 KOSE	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9061 31227ABO	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*3201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*3301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*0205			-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
27	9191 CJ1007	*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	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	*0201	*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		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.412-24/04 – including *Taq* polymerase
 101.412-24u/04u – without *Taq* polymerase

Lot No.: **91E**

Lot-specific information

www.olerup.com

CELL LINE VALIDATION SHEET																			
HLA-A*02 SSP subtyping kit																			
				Well															
				49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
				Lot No.:															
				200738549	200738550	200738551	200738552	200738553	200738554	200849455	200738556	200738557	200738558	200738559	200738560	200738561	200738562	200738563	200849464
	IHWC cell line	A*	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	9007 DEM	*0201	*3101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*2601		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31012		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*2402		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*s902		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953549	*0301	*8001	-	-	W	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*3301	*7401	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*0217		-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9061 31227ABO	*0201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*3201		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*3301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*0205		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CJ1007	*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	*31012		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31012		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	*0201	*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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.412-24/04 – including *Taq* polymerase
 101.412-24u/04u – without *Taq* polymerase

Lot No.: **91E**

Lot-specific information

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CELL LINE VALIDATION SHEET																					
HLA-A*02 SSP subtyping kit																					
				Lot No.:	Well																
					65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	
	IHWC cell line	A*	A*		200738565	200738566	200738567	200738568	200849469	200738570	200738571	200738572	200738573	200738574	200738575	200738576	200738577	200738578	200738579	200738580	
1	9001 SA	*2402			-	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-
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	9007 DEM	*0201	*3101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026 YAR	*2601			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107 LKT3	*2402			-	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-
11	9051 PITOUT	*2902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052 DBB	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9004 JESTHOM	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071 OLGA	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075 DKB	*2402			-	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-
16	9037 SWEIG007	*s902			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282 CTM3953549	*0301	*8001		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257 32367	*3301	*7401		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038 BM16	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059 SLE005	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064 AMALA	*0217			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056 KOSE	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9061 31227ABO	*0201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035 JBUSH	*3201			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049 IBW9	*3301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285 WT49	*0205			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191 CJ1007	*2410	*2901		-	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-
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	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104 DHIF	*31012			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	*0201	*0207		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076 T7526	*0206	*0207		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057 TEM	*6601			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239 SHJO	*2301	*2402		-	-	-	-	-	-	-	W	-	-	-	-	-	-	-	-	-
46	9013 SCHU	*0301			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045 TUBO	*0216	*0301		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303 TER-ND	*0201	*1101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CELL LINE VALIDATION SHEET															
HLA-A*02 SSP subtyping kit															
				Well											
				81	82	83	84	85	86	87	88	89	90	91	
				200738581	200738582	200738583	200738584	200738585	200849486	200849487	200849488	200849489	200849490	200849491	
	IHWC cell line	A*	A*	Lot No.:											
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	9007 DEM	*0201	*3101	-	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*2601		-	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*2402		-	-	-	-	-	-	-	-	-	-	-	
11	9051 PITOUT	*2902		-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*0201		-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*0201		-	-	-	-	-	-	-	-	-	-	-	
14	9071 OLGA	*31012		-	-	-	-	-	-	-	-	-	-	-	
15	9075 DKB	*2402		-	-	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*s902		-	-	-	-	-	-	-	-	-	-	-	
17	9282 CTM3953549	*0301	*8001	-	-	-	-	-	-	-	-	-	-	-	
18	9257 32367	*3301	*7401	-	-	-	-	-	-	-	-	-	-	-	
19	9038 BM16	*0201		-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*0201		-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*0217		-	-	-	-	-	-	-	-	-	-	-	
22	9056 KOSE	*0201		-	-	-	-	-	-	-	-	-	-	-	
23	9061 31227ABO	*0201		-	-	-	-	-	-	-	-	-	-	-	
24	9035 JBUSH	*3201		-	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*3301		-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*0205		-	-	-	-	-	-	-	-	-	-	-	
27	9191 CJ1007	*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	*31012		-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*31012		-	-	-	-	-	-	-	-	-	-	-	
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	*0201	*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	-	-	-	-	-	-	-	-	-	-	-	

101.412-24/04 – including *Taq* polymerase101.412-24u/04u – without *Taq* polymeraseLot No.: **91E**

Lot-specific information

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CERTIFICATE OF ANALYSIS**Olerup SSP® HLA-A*02 SSP**

Product number:

101.412-24/04 – including *Taq* pol.101.412-24u/04u – without *Taq* pol.

Lot number:

91E

Expiry date:

2010-July-01

Number of tests:

24 tests – Product No. 101.412-24

4 tests – Product No. 101.412-04

Number of wells per test:

91

Well specifications:

Well No.	Production No.	Well No.	Production No.	Well No.	Production No.
1	2007-385-01	33	2008-494-33	65	2007-385-65
2	2007-385-02	34	2007-385-34	66	2007-385-66
3	2007-385-03	35	2007-385-35	67	2007-385-67
4	2007-385-04	36	2007-385-36	68	2007-385-68
5	2007-385-05	37	2007-385-37	69	2008-494-69
6	2007-385-06	38	2007-385-38	70	2007-385-70
7	2008-494-07	39	2007-385-39	71	2007-385-71
8	2007-385-08	40	2007-385-40	72	2007-385-72
9	2007-385-09	41	2007-385-41	73	2007-385-73
10	2007-385-10	42	2007-385-42	74	2007-385-74
11	2008-494-11	43	2007-385-43	75	2007-385-75
12	2007-385-12	44	2007-385-44	78	2007-385-76
13	2007-385-13	45	2007-385-45	77	2007-385-77
14	2007-385-14	46	2007-385-46	78	2007-385-78
15	2007-385-15	47	2007-385-47	79	2007-385-79
16	2007-385-16	48	2007-385-48	80	2007-385-80
17	2007-385-17	49	2007-385-49	81	2007-385-81
18	2007-385-18	50	2007-385-50	82	2007-385-82
19	2007-385-19	51	2007-385-51	83	2007-385-83
20	2007-385-20	52	2007-385-52	84	2007-385-84
21	2007-385-21	53	2007-385-53	85	2007-385-85
22	2007-385-22	54	2007-385-54	86	2008-494-86
23	2007-385-23	55	2008-494-55	87	2008-494-87
24	2007-385-24	56	2007-385-56	88	2008-494-88
25	2007-385-25	57	2007-385-57	89	2008-494-89
26	2007-385-26	58	2007-385-58	90	2008-494-90
27	2008-494-27	59	2007-385-59	91	2008-494-91
28	2007-385-28	60	2007-385-60		
29	2007-385-29	61	2007-385-61		
30	2007-385-30	62	2007-385-62		
31	2008-494-31	63	2007-385-63		
32	2007-385-32	64	2008-494-64		

101.412-24/04 – including *Taq* polymerase101.412-24u/04u – without *Taq* polymeraseLot No.: **91E**

Lot-specific information

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

No DNAs carrying the alleles to be amplified by primer solutions 9, 10, 20, 21, 24, 26, 29, 30, 31, 32, 33, 38, 39, 40, 43, 44, 45, 46, 47, 48, 50, 52, 54, 55, 56, 57, 58, 59, 60, 63 to 71 and 73 to 90 were available. The specificities of the primers in primer solutions 9, 10, 20, 26, 31, 32, 33, 40, 43, 45, 46, 52, 56, 58, 69, 70 and 75 were tested by separately adding one additional 5'-primer, respectively one additional 3'-primer. In primer solutions 21, 24, 29, 30, 39, 47, 50, 54, 57, 59, 60, 65, 68, 71, 73, 76 to 82, 84 to 90 it was only possible to test the 5'-primer, the 3'-primer were not possible to test. In primer solutions 38, 44, 48, 55, 63, 64, 66, 67, 74 and 83 it was only possible to test the 3'-primer, the 5'-primer was not possible to test.

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

Date of approval: 2008-July-14

Approved by:

Quality Control, Supervisor

Lot No.: **91E**

Lot-specific information

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Declaration of Conformity

Product name: *Olerup* SSP® HLA-A*02
Product number: 101.412-24/04, 101.412-24u/04u
Lot number: 91E

Intended use: HLA-A*02 high resolution histocompatibility testing

Manufacturer: *Olerup* SSP AB
Hasselstigen 1
SE-133 33 Saltsjöbaden, Sweden
Phone: +46-8-717 88 27
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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 9001:2000 and ISO 13485:2003, following the provisions of the 98/79/EC Directive on *in vitro* diagnostic medical devices, Annex II List B, as transposed into the national laws of the Member States of the European Union.

The Technical Documentation File is maintained at *Olerup* SSP AB, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.

The Authorized Representative located within the Community is: *Olerup* SSP AB.

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

Saltsjöbaden, Sweden
2008-July-14

Olle Olerup
Managing Director

HLA-A*02

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101.412-24/04 – including *Taq* polymerase

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101.412-24/04 – including *Taq* polymerase101.412-24u/04u – without *Taq* polymeraseLot No.: **91E**

Lot-specific information

www.olerup.com**ADDRESSES:****Manufacturer:****Olerup SSP AB**, Hasselstigen 1, SE-133 33 Saltsjöbaden, Sweden.**Tel:** +46-8-717 88 27**Fax:** +46-8-717 88 18**E-mail:** info-ssp@olerup.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:** support-at@olerup.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:** info.us@olerup.com**Web page:** <http://www.olerup.com>For information on *Olerup* SSP distributors worldwide, contact **Olerup GmbH**.