

101.422-24/03 – including *Taq* polymerase, IFU-01
101.422-24u/03u – without *Taq* polymerase, IFU-02

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

Lot No.: **2L4**

Lot-specific information

Olerup SSP® HLA-A*24

Product number:	101.422-24/03 – including <i>Taq</i> pol. 101.422-24u/03u – without <i>Taq</i> pol.
Lot number:	2L4
Expiry date:	2024-06-01
Number of tests:	24 tests – Product No. 101.422-24/24u 3 tests – Product No. 101.422-03/03u
Number of wells per test:	95+1
Storage - pre-aliquoted primers:	dark, between -15°C and -25°C
- PCR Master Mix:	between -15°C and -25°C
- Adhesive PCR seals	RT

This Product Description is only valid for Lot No. 2L4.

Complete product documentation consists of generic Instructions for Use (IFU), lot specific Product Insert, Worksheet and Certificate.

**CHANGES COMPARED TO THE PREVIOUS OLERUP SSP®
HLA-A*24 LOT (5H7)**

- The product documentation has been updated for new alleles of IMGT 3.39.0.
- The kit resolution focuses on common and well documented (CWD) alleles¹.

- ¹As described in section Uniquely Identified Alleles.

The HLA-A*24 specificity and interpretation tables have been updated for the HLA-A alleles described since the previous *Olerup SSP®* HLA-A*24 lot was made (**Lot No. 5H7**).

The HLA-A*24 primer set is unchanged compared to the previous *Olerup SSP®* HLA-A*24 (**Lot No. 5H7**).

¹S. J. Mack, P. Cano, J. A. Hollenbach et al.
Common and well-documented HLA alleles: 2012 update to the CWD catalogue. *Tissue Antigens*, 2013, 81, 194–203



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MA123 v02 SSP PI Template
Date: June 2022, Rev. No: 02

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Changes in Revision R01 compared to R00:

1. In primer mixes 3 and 5, the reactivity for A*24:52 was changed from negative to weak.

Changes in Revision R02 compared to R01:

1. Primer mix 24 amplifies the A*24:129 and the A*01:02:01-01:02:02, 01:20, 01:188, 01:190, 01:307 and 23:09 alleles. This correction has been implemented in the specificity and interpretation tables.



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Well **96** contains Negative Control primer pairs, that will amplify the majority of the *Olerup* SSP[®] HLA Class I, DRB, DQB1, DPB1 and DQA1 amplicons as well as all the amplicons generated by the control primer pairs matching the human growth hormone gene.

HLA-specific PCR product sizes range from 75 to 200 base pairs.

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

Length of PCR product	105	200	105	80	75	80	85
5'-primer¹	164	340	440	45	45	43	36
	5'-CAC ^{3'}	5'-Agg ^{3'}	5'-TTA ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-Tgg ^{3'}	5'-TAC ^{3'}
							36
							5'-TAT ^{3'}
3'-primer²	231	2nd I	507	59	58	57	47
	5'-TgC ^{3'}	5'-AAA ^{3'}	5'-TTg ^{3'}	5'-CTC ^{3'}	5'-ggC ^{3'}	5'-CTC ^{3'}	5'-ACA ^{3'}
							48
							5'-gCA ^{3'}
							48
							5'-gCC ^{3'}
							52
							5'-TgT ^{3'}
A*	+	+	+				
B*	+	+	+				
C*	+	+	+				
DRB1				+	+		
DRB3				+	+		
DRB5				+			
DQB1					+		
DPB1						+	
DQA1							+

¹The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon, matching the specificity-determining 3'-end of the primer is given. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

²The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2nd or 3rd exon or the 2nd intron, matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide and codon numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.



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PRODUCT DESCRIPTION

HLA-A*24 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the HLA-A*24:02 to A*24:484 alleles.

PLATE LAYOUT

Each test consists of 96 PCR reactions in a 96 well PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	NC

The 96 well PCR plate is marked with ‘HLA-A*24’ in silver/gray ink.

Well No. 1 is marked with ‘2L4’.

Wells 1 to 95 – HLA-A*24 high resolution primers.

Well 96 – Negative Control.

A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded. The PCR plates are covered with a PCR-compatible aluminium foil.

INTERPRETATION

Due to the sharing of sequence motifs between HLA-A alleles some non-HLA-A*24 alleles will be amplified by some primer mixes. For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-A*24 alleles, i.e. **A*24:02 to A*24:484**, recognized by the HLA Nomenclature Committee in January 2020^{1,2}, will be amplified by the primers in the HLA-A*24 subtyping kit³.

The HLA-A*24 kit enables separation of the confirmed HLA-A*24 alleles as listed in the IMGT/HLA database 3.27.0. An HLA allele is listed as confirmed by IMGT/HLA



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if it has been sequenced by more than a single laboratory or from multiple sources. Current allele confirmation status for HLA-A*24 alleles is listed below.

The HLA-A*24 kit also enables identification of many null and alternatively expressed alleles.

The following HLA-A*24 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix	Alleles	Primer mix
A*24:29, 24:271	29	A*24:84N, 24:218	73
A*24:37, 24:119	31	A*24:101, 24:111	83
A*24:47, 24:232N	36	A*24:102, 24:103	84
A*24:49, 24:126	38	A*24:104, 24:117	85
A*24:60N, 24:205	55	A*24:105, 24:121	86
A*24:72, 24:297	62	A*24:106, 24:136, 24:330	87
A*24:76, 24:98	76	A*24:115, 24:234	90
A*24:78, 24:353	68	A*24:116, 24:352	88
A*24:79, 24:249	67	A*24:135:01-24:135:02, 24:238	91
A*24:80, 24:184	69	A*24:206, 24:322	90, 94
A*24:81, 24:134	70	A*24:225:01-24:225:02, 24:240N	69, 83
A*24:82, 24:128	71	A*24:231, 24:410	95

¹HLA-A alleles listed on the IMGT/HLA web page 2020-January-20, release 3.39.0, www.ebi.ac.uk/imgt/hla.

²Alleles that have been deleted from or renamed in the official WHO HLA Nomenclature up to and including the last IMGT/HLA database release can be retrieved from web page <http://hla.alleles.org/alleles/deleted.html>.

³The HLA-A*24 primer set cannot separate the following alleles. These alleles can be distinguished by the HLA-A low resolution and/or HLA-A*02, HLA-A*23 and HLA-A*33 kits.

Alleles

A*24:164, 24:373, 24:399, 24:405 24:446,
 02:804, 33:19
 A*24:13:01-24:13:02, 23:104



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ALLELE CONFIRMATION STATUS

Allele	Status ¹	Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
A*24:02:01:01	Confirmed	A*24:02:42	Unconfirmed	A*24:02:92	Unconfirmed	A*24:35	Unconfirmed
A*24:02:01:02L	Confirmed	A*24:02:43	Unconfirmed	A*24:02:93	Unconfirmed	A*24:36N	Confirmed
A*24:02:01:03	Unconfirmed	A*24:02:44	Unconfirmed	A*24:02:94	Unconfirmed	A*24:37	Confirmed
A*24:02:01:04	Confirmed	A*24:02:45	Unconfirmed	A*24:02:95	Unconfirmed	A*24:38	Unconfirmed
A*24:02:01:05	Confirmed	A*24:02:46	Unconfirmed	A*24:02:96	Unconfirmed	A*24:39	Confirmed
A*24:02:01:06	Unconfirmed	A*24:02:47	Unconfirmed	A*24:02:97	Confirmed	A*24:40N	Unconfirmed
A*24:02:01:07	Unconfirmed	A*24:02:48	Unconfirmed	A*24:02:98	Confirmed	A*24:41	Unconfirmed
A*24:02:01:08	Unconfirmed	A*24:02:49	Confirmed	A*24:02:99	Unconfirmed	A*24:42	Unconfirmed
A*24:02:01:09	Unconfirmed	A*24:02:50	Unconfirmed	A*24:02:100	Unconfirmed	A*24:43	Confirmed
A*24:02:01:10	Unconfirmed	A*24:02:51	Unconfirmed	A*24:03:01:01	Confirmed	A*24:44	Unconfirmed
A*24:02:02	Confirmed	A*24:02:52	Unconfirmed	A*24:03:01:02	Confirmed	A*24:45N	Unconfirmed
A*24:02:03Q	Unconfirmed	A*24:02:53	Confirmed	A*24:03:02	Confirmed	A*24:46	Confirmed
A*24:02:04	Confirmed	A*24:02:54	Unconfirmed	A*24:03:03	Confirmed	A*24:47	Confirmed
A*24:02:05	Confirmed	A*24:02:55	Unconfirmed	A*24:03:04	Unconfirmed	A*24:48N	Unconfirmed
A*24:02:06	Confirmed	A*24:02:56	Unconfirmed	A*24:04	Confirmed	A*24:49	Unconfirmed
A*24:02:07	Unconfirmed	A*24:02:57	Unconfirmed	A*24:05:01	Confirmed	A*24:50	Confirmed
A*24:02:08	Unconfirmed	A*24:02:58	Confirmed	A*24:05:02	Unconfirmed	A*24:51	Unconfirmed
A*24:02:09	Unconfirmed	A*24:02:59	Confirmed	A*24:06	Unconfirmed	A*24:52	Confirmed
A*24:02:10	Unconfirmed	A*24:02:60	Unconfirmed	A*24:07:01	Confirmed	A*24:53	Confirmed
A*24:02:11	Unconfirmed	A*24:02:61	Confirmed	A*24:07:02	Unconfirmed	A*24:54	Unconfirmed
A*24:02:12	Unconfirmed	A*24:02:62	Confirmed	A*24:08	Confirmed	A*24:55	Unconfirmed
A*24:02:13	Confirmed	A*24:02:63	Unconfirmed	A*24:09N	Confirmed	A*24:56	Confirmed
A*24:02:14	Confirmed	A*24:02:64	Unconfirmed	A*24:10:01	Confirmed	A*24:57	Confirmed
A*24:02:15	Unconfirmed	A*24:02:65	Confirmed	A*24:10:02	Unconfirmed	A*24:58	Confirmed
A*24:02:16	Confirmed	A*24:02:66	Unconfirmed	A*24:11N	Confirmed	A*24:59	Confirmed
A*24:02:17	Unconfirmed	A*24:02:67	Unconfirmed	A*24:13:01	Unconfirmed	A*24:60N	Unconfirmed
A*24:02:18	Confirmed	A*24:02:68	Confirmed	A*24:13:02	Confirmed	A*24:61	Unconfirmed
A*24:02:19	Confirmed	A*24:02:69	Unconfirmed	A*24:14:01:01	Confirmed	A*24:62	Confirmed
A*24:02:20	Unconfirmed	A*24:02:70	Unconfirmed	A*24:14:01:02	Unconfirmed	A*24:63	Unconfirmed
A*24:02:21	Unconfirmed	A*24:02:71	Unconfirmed	A*24:15	Unconfirmed	A*24:64	Confirmed
A*24:02:22	Confirmed	A*24:02:72	Confirmed	A*24:17	Confirmed	A*24:66	Unconfirmed
A*24:02:23	Confirmed	A*24:02:73	Confirmed	A*24:18	Unconfirmed	A*24:67	Unconfirmed
A*24:02:24	Confirmed	A*24:02:74	Unconfirmed	A*24:19	Unconfirmed	A*24:68	Unconfirmed
A*24:02:25	Confirmed	A*24:02:75	Unconfirmed	A*24:20	Confirmed	A*24:69	Unconfirmed
A*24:02:26	Confirmed	A*24:02:76	Unconfirmed	A*24:21:01	Confirmed	A*24:70	Confirmed
A*24:02:27	Confirmed	A*24:02:77	Unconfirmed	A*24:21:02	Unconfirmed	A*24:71	Confirmed
A*24:02:28	Unconfirmed	A*24:02:78	Unconfirmed	A*24:21:03	Confirmed	A*24:72	Confirmed
A*24:02:29	Confirmed	A*24:02:79	Unconfirmed	A*24:22	Confirmed	A*24:73	Unconfirmed
A*24:02:30	Confirmed	A*24:02:80	Unconfirmed	A*24:23	Confirmed	A*24:74:01	Unconfirmed
A*24:02:31	Confirmed	A*24:02:81	Unconfirmed	A*24:24	Confirmed	A*24:74:02	Unconfirmed
A*24:02:32	Unconfirmed	A*24:02:82	Unconfirmed	A*24:25	Confirmed	A*24:75	Unconfirmed
A*24:02:33	Unconfirmed	A*24:02:83	Unconfirmed	A*24:26	Confirmed	A*24:76	Unconfirmed
A*24:02:34	Unconfirmed	A*24:02:84	Unconfirmed	A*24:27	Unconfirmed	A*24:77	Unconfirmed
A*24:02:35	Confirmed	A*24:02:85	Confirmed	A*24:28	Confirmed	A*24:78	Unconfirmed
A*24:02:36	Unconfirmed	A*24:02:86	Unconfirmed	A*24:29	Confirmed	A*24:79	Unconfirmed
A*24:02:37	Confirmed	A*24:02:87	Unconfirmed	A*24:30	Confirmed	A*24:80	Unconfirmed
A*24:02:38	Unconfirmed	A*24:02:88	Confirmed	A*24:31	Unconfirmed	A*24:81	Confirmed
A*24:02:39	Unconfirmed	A*24:02:89	Unconfirmed	A*24:32	Confirmed	A*24:82	Unconfirmed
A*24:02:40	Unconfirmed	A*24:02:90	Confirmed	A*24:33	Confirmed	A*24:83N	Unconfirmed
A*24:02:41	Unconfirmed	A*24:02:91	Unconfirmed	A*24:34	Unconfirmed	A*24:84N	Unconfirmed



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A*24:85	Confirmed	A*24:134	Unconfirmed	A*24:181	Unconfirmed	A*24:229	Unconfirmed
A*24:86N	Unconfirmed	A*24:135:01	Confirmed	A*24:182	Confirmed	A*24:230	Unconfirmed
A*24:87	Confirmed	A*24:135:02	Unconfirmed	A*24:183N	Confirmed	A*24:231	Confirmed
A*24:88	Unconfirmed	A*24:136	Unconfirmed	A*24:184	Confirmed	A*24:232N	Unconfirmed
A*24:89	Unconfirmed	A*24:137	Confirmed	A*24:185N	Unconfirmed	A*24:233	Confirmed
A*24:90:01N	Confirmed	A*24:138	Confirmed	A*24:186	Unconfirmed	A*24:234	Confirmed
A*24:90:02N	Unconfirmed	A*24:139	Unconfirmed	A*24:187	Unconfirmed	A*24:235	Confirmed
A*24:91	Unconfirmed	A*24:140	Unconfirmed	A*24:188	Confirmed	A*24:236	Unconfirmed
A*24:92	Unconfirmed	A*24:141	Unconfirmed	A*24:189	Unconfirmed	A*24:237	Unconfirmed
A*24:93	Confirmed	A*24:142:01	Unconfirmed	A*24:190	Unconfirmed	A*24:238	Confirmed
A*24:94	Unconfirmed	A*24:142:02	Unconfirmed	A*24:191	Unconfirmed	A*24:239	Unconfirmed
A*24:95	Confirmed	A*24:143	Unconfirmed	A*24:192	Confirmed	A*24:240N	Unconfirmed
A*24:96	Unconfirmed	A*24:144	Unconfirmed	A*24:193	Unconfirmed	A*24:241	Unconfirmed
A*24:97	Confirmed	A*24:145	Confirmed	A*24:194	Confirmed	A*24:242	Unconfirmed
A*24:98	Unconfirmed	A*24:146	Confirmed	A*24:195	Unconfirmed	A*24:243	Unconfirmed
A*24:99	Unconfirmed	A*24:147	Unconfirmed	A*24:196	Confirmed	A*24:244	Unconfirmed
A*24:100	Unconfirmed	A*24:148	Unconfirmed	A*24:197	Confirmed	A*24:245	Unconfirmed
A*24:101	Unconfirmed	A*24:149	Unconfirmed	A*24:198	Unconfirmed	A*24:246	Unconfirmed
A*24:102	Unconfirmed	A*24:150	Unconfirmed	A*24:199	Unconfirmed	A*24:247	Unconfirmed
A*24:103	Confirmed	A*24:151	Unconfirmed	A*24:200	Unconfirmed	A*24:248	Confirmed
A*24:104	Unconfirmed	A*24:152	Unconfirmed	A*24:201	Unconfirmed	A*24:249	Unconfirmed
A*24:105	Confirmed	A*24:153	Unconfirmed	A*24:202	Unconfirmed	A*24:250	Unconfirmed
A*24:106	Confirmed	A*24:154	Unconfirmed	A*24:203	Unconfirmed	A*24:251	Unconfirmed
A*24:107	Confirmed	A*24:155N	Unconfirmed	A*24:204	Unconfirmed	A*24:252N	Confirmed
A*24:108	Confirmed	A*24:156	Unconfirmed	A*24:205	Confirmed	A*24:253	Unconfirmed
A*24:109	Unconfirmed	A*24:157	Confirmed	A*24:206	Confirmed	A*24:254	Unconfirmed
A*24:110	Confirmed	A*24:158N	Unconfirmed	A*24:207:01	Confirmed	A*24:255	Confirmed
A*24:111	Unconfirmed	A*24:159	Confirmed	A*24:207:02	Unconfirmed	A*24:256	Unconfirmed
A*24:112	Unconfirmed	A*24:160	Confirmed	A*24:208	Unconfirmed	A*24:257	Unconfirmed
A*24:113	Confirmed	A*24:161	Unconfirmed	A*24:209	Unconfirmed	A*24:258	Unconfirmed
A*24:114	Unconfirmed	A*24:162	Unconfirmed	A*24:210	Unconfirmed	A*24:259	Unconfirmed
A*24:115	Confirmed	A*24:163N	Unconfirmed	A*24:212	Unconfirmed	A*24:260	Unconfirmed
A*24:116	Unconfirmed	A*24:164	Confirmed	A*24:213	Confirmed	A*24:261	Unconfirmed
A*24:117	Confirmed	A*24:165	Unconfirmed	A*24:214	Unconfirmed	A*24:262	Unconfirmed
A*24:118	Confirmed	A*24:166	Unconfirmed	A*24:215	Confirmed	A*24:263	Unconfirmed
A*24:119	Unconfirmed	A*24:167	Confirmed	A*24:216	Unconfirmed	A*24:264	Unconfirmed
A*24:120	Unconfirmed	A*24:168	Confirmed	A*24:217	Unconfirmed	A*24:265	Unconfirmed
A*24:121	Confirmed	A*24:169	Confirmed	A*24:218	Unconfirmed	A*24:266	Unconfirmed
A*24:122	Confirmed	A*24:170	Unconfirmed	A*24:219	Unconfirmed	A*24:267	Unconfirmed
A*24:123	Confirmed	A*24:171	Unconfirmed	A*24:220	Confirmed	A*24:268	Unconfirmed
A*24:124	Unconfirmed	A*24:172:01	Unconfirmed	A*24:221	Unconfirmed	A*24:269	Unconfirmed
A*24:125	Unconfirmed	A*24:172:02	Unconfirmed	A*24:222N	Unconfirmed	A*24:270	Unconfirmed
A*24:126	Unconfirmed	A*24:173	Confirmed	A*24:223	Unconfirmed	A*24:271	Unconfirmed
A*24:127	Unconfirmed	A*24:174	Unconfirmed	A*24:224	Unconfirmed	A*24:272	Unconfirmed
A*24:128	Confirmed	A*24:175	Unconfirmed	A*24:225:01	Confirmed	A*24:273	Unconfirmed
A*24:129	Confirmed	A*24:176	Unconfirmed	A*24:225:02	Confirmed	A*24:274	Unconfirmed
A*24:130	Unconfirmed	A*24:177	Unconfirmed	A*24:226:01	Unconfirmed	A*24:275	Confirmed
A*24:131	Unconfirmed	A*24:178	Unconfirmed	A*24:226:02	Unconfirmed	A*24:276	Confirmed
A*24:132N	Confirmed	A*24:179	Unconfirmed	A*24:227	Unconfirmed	A*24:277	Unconfirmed
A*24:133	Unconfirmed	A*24:180	Confirmed	A*24:228	Confirmed	A*24:278N	Unconfirmed



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Allele	Status ¹	Allele	Status ¹	Allele	Status ¹	Allele	Status ¹
A*24:279	Unconfirmed	A*24:309	Unconfirmed	A*24:337	Unconfirmed	A*24:367	Unconfirmed
A*24:280	Confirmed	A*24:310:01	Unconfirmed	A*24:338	Unconfirmed	A*24:368	Unconfirmed
A*24:281	Unconfirmed	A*24:310:02	Unconfirmed	A*24:339	Confirmed	A*24:369	Unconfirmed
A*24:282	Unconfirmed	A*24:311	Unconfirmed	A*24:340	Unconfirmed	A*24:370N	Unconfirmed
A*24:283	Unconfirmed	A*24:312N	Unconfirmed	A*24:341	Unconfirmed	A*24:371	Unconfirmed
A*24:284	Unconfirmed	A*24:313:01	Unconfirmed	A*24:342	Unconfirmed	A*24:372	Unconfirmed
A*24:285	Unconfirmed	A*24:313:02	Unconfirmed	A*24:343	Unconfirmed	A*24:373	Unconfirmed
A*24:286	Unconfirmed	A*24:314	Confirmed	A*24:344	Unconfirmed	A*24:374	Unconfirmed
A*24:287	Confirmed	A*24:315	Unconfirmed	A*24:345	Confirmed	A*24:375	Unconfirmed
A*24:288	Unconfirmed	A*24:316	Unconfirmed	A*24:346	Unconfirmed	A*24:376	Unconfirmed
A*24:289	Unconfirmed	A*24:317	Unconfirmed	A*24:347	Unconfirmed	A*24:377	Confirmed
A*24:290	Confirmed	A*24:318	Unconfirmed	A*24:348	Unconfirmed		
A*24:291	Unconfirmed	A*24:319	Unconfirmed	A*24:349	Unconfirmed		
A*24:292	Unconfirmed	A*24:320	Unconfirmed	A*24:350	Unconfirmed		
A*24:293	Confirmed	A*24:321	Unconfirmed	A*24:351	Unconfirmed		
A*24:294Q	Unconfirmed	A*24:322	Confirmed	A*24:352	Unconfirmed		
A*24:295	Unconfirmed	A*24:323N	Unconfirmed	A*24:353	Confirmed		
A*24:296	Unconfirmed	A*24:324	Confirmed	A*24:354	Unconfirmed		
A*24:297	Confirmed	A*24:325	Unconfirmed	A*24:355	Unconfirmed		
A*24:298	Unconfirmed	A*24:326	Unconfirmed	A*24:356	Confirmed		
A*24:299	Unconfirmed	A*24:327	Unconfirmed	A*24:357N	Confirmed		
A*24:300	Unconfirmed	A*24:328	Unconfirmed	A*24:358	Unconfirmed		
A*24:301	Unconfirmed	A*24:329	Unconfirmed	A*24:359N	Unconfirmed		
A*24:302	Confirmed	A*24:330	Unconfirmed	A*24:360	Unconfirmed		
A*24:303N	Unconfirmed	A*24:331	Confirmed	A*24:361	Unconfirmed		
A*24:304	Unconfirmed	A*24:332	Unconfirmed	A*24:362	Unconfirmed		
A*24:305	Unconfirmed	A*24:333	Unconfirmed	A*24:363	Unconfirmed		
A*24:306	Unconfirmed	A*24:334	Unconfirmed	A*24:364	Unconfirmed		
A*24:307	Confirmed	A*24:335	Unconfirmed	A*24:365	Unconfirmed		
A*24:308	Unconfirmed	A*24:336	Unconfirmed	A*24:366	Unconfirmed		

¹Allele status “confirmed” or “unconfirmed” as listed on the IMGT/HLA web page 2017-January-20, release 3.27.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-A*24 homo- and heterozygotes is available upon request.



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Lot-specific information
SPECIFICITY TABLE

HLA-A*24 SSP subtyping

Specificities and sizes of the PCR products of the 95+1 primer mixes used for HLA-A*24 SSP subtyping

Primer Mix	Size of spec. PCR product ¹	Size of control band ²	Amplified HLA-A*24 alleles ³	Other amplified HLA Class I alleles
1 ⁷	180 bp	800 bp	*24:02:01:01-24:02:09, 24:02:11-24:02:122, 24:02:124-24:11N, 24:13:01-24:15, 24:17-24:32, 24:34-24:64, 24:66-24:210, 24:212-24:252N, 24:254-24:386, 24:388N-24:470, 24:472-24:484	*02:19, 02:804, 23:01:01:01-23:68, 23:70-23:86, 23:88-23:108N, 33:19
2	245 bp	1070 bp	*24:03:01:01-24:03:04, 24:10:01:01-24:10:02, 24:18, 24:22, 24:33, 24:94, 24:125, 24:138, 24:167, 24:204, 24:207:01-24:207:02, 24:210, 24:289, 24:299-24:300, 24:315, 24:339-24:340, 24:374, 24:387, 24:441, 24:459, 24:461, 24:483	*02:17:02:01-02:17:04, 02:108, 02:110, 02:268, 02:300, 02:303, 02:617, 02:657, 02:680, 03:347, 11:139, 23:04, 23:83, 29:07, 29:49, 31:29, 33:187, B*18:27
3	210 bp	800 bp	*24:02:01:01-24:05:02, 24:07:01:01-24:11N, 24:17, 24:19-24:21:03, 24:23, 24:25-24:50, 24:52 ^w , 24:55-24:56, 24:58-24:63, 24:66-24:86N, 24:88-24:90:02N, 24:93, 24:95-24:106, 24:108-24:113, 24:115-24:132N, 24:134-24:137, 24:139-24:166, 24:168-24:187, 24:189-24:206, 24:208:01-24:210, 24:212-24:221, 24:223-24:226:02, 24:229-24:284, 24:286-24:288, 24:290, 24:292-24:295, 24:297-24:298, 24:300-24:303N, 24:305-24:314, 24:317-24:323N, 24:325-24:326, 24:328-24:338, 24:340-24:354, 24:356-24:380, 24:382-24:391, 24:393-24:411, 24:413-24:457, 24:459-24:470, 24:472-24:477, 24:479Q-24:480, 24:482-24:484	*02:804, 11:139, 23:105, 33:19
4 ⁵	220 bp	1070 bp	*24:06, 24:13:01-24:13:02, 24:18, 24:22, 24:24, 24:94, 24:138, 24:167, 24:188, 24:204, 24:207:01-24:207:02, 24:213, 24:228, 24:315, 24:339, 24:355, 24:381, 24:392	*02:17:02:01-02:17:04, 02:108, 02:110, 02:268, 02:300, 02:303, 02:617, 02:657, 02:680, 03:347, 23:01:01:01-23:33, 23:35-23:68, 23:70-23:104, 23:106N-23:108N, 29:07, 29:49, 31:29, 33:187, B*18:27
5	175 bp	1070 bp	*24:02:01:01-24:04, 24:06-24:11N, 24:13:01-24:13:02, 24:17-24:23, 24:25-24:50, 24:52 ^w , 24:54-24:56, 24:58-24:63, 24:66-24:91, 24:93, 24:95-24:113, 24:115-24:129, 24:131-24:137, 24:139-24:167, 24:169-24:187,	*01:301Q, 02:17:02:01 ^w , 02:17:03 ^w -02:17:04 ^w , 02:804, 03:347, 11:139, 23:14:01-23:14:02, 23:104, 33:19



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			24:189-24:193, 24:195-24:198, 24:200-24:210, 24:212-24:221, 24:223-24:227, 24:229-24:290, 24:292, 24:294Q-24:295, 24:297-24:303N, 24:305-24:315, 24:317-24:318, 24:320-24:323N, 24:325-24:341, 24:343, 24:345-24:391, 24:393-24:394, 24:396N-24:407, 24:409-24:411, 24:413-24:457, 24:459-24:470, 24:472-24:480, 24:482-24:484	
6⁵	175 bp	1070 bp	*24:05:01-24:05:02, 24:24, 24:199, 24:342, 24:392, 24:395	*23:01:01:01-23:13, 23:15-23:68, 23:70-23:73, 23:75-23:103N, 23:105-23:108N, 29:07, 29:49, 31:29, 33:187, B*18:27
7	335 bp	1070 bp	*24:02:01:01-24:03:04, 24:05:01- 24:11N, 24:13:01-24:13:02, 24:17- 24:18, 24:20:01:01-24:27, 24:29-24:43, 24:45N-24:50, 24:52, 24:54-24:56, 24:58-24:64, 24:66-24:88, 24:90:01N- 24:91, 24:93-24:108, 24:110-24:117, 24:119-24:128, 24:130-24:163N, 24:165-24:210, 24:212-24:254, 24:256-24:289, 24:292-24:295, 24:297-24:323N, 24:325-24:328, 24:330-24:372, 24:374-24:398, 24:400-24:403, 24:407-24:423, 24:425N-24:445N, 24:447Q-24:457, 24:459-24:470, 24:472-24:484	*23:01:01:01-23:26, 23:28-23:68, 23:70-23:74, 23:76-23:108N
8⁴	75 bp	1070 bp	*24:04, 24:109	
9	225 bp	800 bp	*24:07:01:01-24:07:03, 24:19, 24:24, 24:112, 24:131, 24:288, 24:290, 24:294Q, 24:339, 24:347:01- 24:347:02, 24:387, 24:406, 24:453, 24:457, 24:477	*03:72, 11:88, 23:13, 29:37, 29:56, 30:01:01:01-30:01:17, 30:11:01-30:11:02, 30:14L-30:20, 30:23-30:26, 30:30-30:31, 30:35- 30:43, 30:48-30:49, 30:52-30:54, 30:56, 30:58-30:60, 30:62-30:63, 30:65, 30:72-30:75, 30:78N, 30:81-30:83, 30:86-30:89, 30:91- 30:98, 30:102, 30:104, 30:106, 30:109-30:116, 30:118, 30:120, 30:122-30:123N, 30:125-30:126, 30:128-30:132N, 30:134-30:138, 30:140-30:143, 30:145N, 30:147- 30:148, 30:154, 30:159, 30:161, 30:163-30:165, 68:45, 68:117
10⁶	370 bp	800 bp	*24:02:01:01-24:02:04, 24:02:06- 24:02:88, 24:02:90-24:02:99, 24:02:101-24:06, 24:08-24:11N, 24:13:01-24:13:02, 24:17-24:18, 24:20:01:01-24:23, 24:25-24:50, 24:52, 24:54-24:56, 24:58-24:64, 24:66- 24:91, 24:93-24:107, 24:109-24:111, 24:113-24:117, 24:119-24:130, 24:132N-24:210, 24:212-24:251, 24:253-24:287, 24:289, 24:292-24:293, 24:295, 24:297-24:323N, 24:325-	*01:301Q, 02:10, 02:17:02:01- 02:17:04, 02:39, 02:108, 02:110, 02:148, 02:242, 02:244, 02:268, 02:300, 02:303, 02:398, 02:453, 02:604, 02:617, 02:628, 02:630, 02:657, 02:680, 02:804, 23:01:01:01-23:12, 23:14:01- 23:21, 23:23-23:68, 23:70-23:74, 23:76-23:108N, 31:29, 33:19, 33:187



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			24:328, 24:330-24:338, 24:340-24:346, 24:349-24:386, 24:388N-24:403, 24:405, 24:407-24:452, 24:454- 24:456N, 24:459-24:470, 24:472- 24:476, 24:478-24:484	
11 ⁷	200 bp 240 bp	1070 bp	*24:08, 24:42, 24:89, 24:310:01- 24:310:02, 24:342, 24:409 *24:61, 24:307	*02:76:01-02:76:02, 02:319, 02:666, 23:80, 30:22 *23:38N
12	235 bp	1070 bp	*24:25, 24:308	*23:05
13	160 bp	1070 bp	*24:02:01:01-24:02:135, 24:04-24:09N, 24:11N, 24:13:01-24:15, 24:17, 24:19- 24:20:01:02, 24:23-24:32, 24:34-24:64, 24:66-24:74:02, 24:76-24:93, 24:95- 24:109, 24:111-24:124, 24:126-24:137, 24:139-24:157, 24:159-24:166, 24:168-24:203, 24:205-24:206, 24:209, 24:212-24:218, 24:220-24:282, 24:284-24:288, 24:290-24:298, 24:301-24:314, 24:316-24:338, 24:341-24:348, 24:350-24:356, 24:358-24:373, 24:375-24:386, 24:388N-24:389N, 24:391-24:440, 24:442-24:458, 24:460, 24:462-24:470, 24:472-24:482, 24:484	*01:88:02-01:88:03, 01:236, 02:19, 02:36-02:37, 02:54, 02:255, 02:417, 02:468:01N, 02:723, 02:804, 02:848, 02:883, 02:895N, 11:209, 23:01:01:01- 23:02, 23:05-23:42, 23:44-23:68, 23:71-23:78, 23:80-23:82, 23:84N-23:107Q, 33:19, 68:26, 68:65, 68:115, 68:131
14 ⁴	95 bp 165 bp	1070 bp	*24:09N, 24:267 *24:251	*23:18
15 ⁴	105 bp 385 bp	800 bp	*24:19, 24:44, 24:100, 24:109, 24:260 *24:14:01:01-24:15, 24:51, 24:53, 24:57, 24:92, 24:291, 24:296, 24:324, 24:458	*11:325 *02:46, 02:48, 02:70, 02:129, 02:571, 03:30, 03:152, 03:273, 11:325, 30:07, 31:08, 32:05, 32:79, 33:21, 33:53
16 ⁴	85 bp	1070 bp	*24:17, 24:41, 24:208:01-24:208:02	*01:301Q, 03:347, 11:139, 23:53, 23:70, 29:07, 29:49
17	230 bp	1070 bp	*24:10:01:01-24:10:02, 24:46, 24:210, 24:300, 24:340, 24:377	*01:301Q, 11:139, 23:10
18	275 bp	1070 bp	*24:02:01:02L, 24:450Q	
19 ⁷	195 bp	1070 bp	*24:02:01:01-24:02:09, 24:02:11- 24:02:64, 24:02:66-24:02:122, 24:02:124-24:11N, 24:13:01-24:15, 24:17-24:32, 24:34-24:64, 24:66- 24:210, 24:212-24:386, 24:388N- 24:461, 24:463-24:470, 24:472-24:484	*02:19, 02:804, 23:01:01:01- 23:68, 23:70-23:86, 23:88- 23:108N, 33:19
20 ^{6,7}	470 bp	1070 bp	*24:11N	*01:04:01:01N-01:04:01:02N, 03:21N, 11:21N, 23:07N, 30:132N
21	155 bp 215 bp	800 bp	*24:31 *24:294Q	
22 ⁴	125 bp 180 bp	800 bp	*24:27 *24:33, 24:387	*02:01:01:01-02:01:14Q, 02:01:17-02:01:19, 02:01:21- 02:01:81, 02:01:83-02:01:163, 02:01:165-02:06:12, 02:06:14- 02:07:03, 02:07:05-02:18, 02:20:01-02:22:02, 02:24:01- 02:64:02, 02:66-02:68, 02:70- 02:97:02, 02:99:01-02:99:02,



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Lot-specific information

				02:101:01-02:131:02, 02:133-02:134, 02:136-02:178, 02:180-02:304, 02:306-02:454, 02:456-02:468:02N, 02:469 ^w , 02:470-02:613, 02:615-02:624, 02:626-02:650, 02:652-02:684, 02:686-02:691N, 02:693-02:803N, 02:805Q-02:821, 02:823-02:828, 02:830-02:914, 26:186, 66:36, 68:164, 69:01:01:01-69:08
23	190 bp	800 bp	*24:28, 24:30, 24:42, 24:89, 24:309, 24:379	*01:134, 01:229, 02:01:09, 02:05:05, 02:06:07, 02:07:12, 02:50, 02:76:02, 02:122, 02:243:02-02:243:03, 02:528:02, 02:591:01, 03:09, 03:89:02, 03:108, 03:172, 03:198, 03:330N, 11:06, 11:18, 11:312, 23:12, 25:11, 26:03:01:01-26:03:01:02, 26:06, 26:21, 26:30, 26:78, 26:92, 26:111, 26:177, 26:193, 29:19, 29:48, 32:08, 33:24, 33:184, 68:05, 68:15, 68:20, 74:06, 74:21
24	215 bp	800 bp	*24:24, 24:67, 24:129, 24:145, 24:156, 24:191, 24:290, 24:392	*01:02:01-01:02:02, 01:20, 01:188, 01:190, 01:307, 03:72, 11:88, 23:09, 23:51, 26:16, 29:37, 29:56, 30:01:01:01-30:04:03, 30:06, 30:09-30:20, 30:23-30:30, 30:32-30:54, 30:56-30:59N, 30:61-30:78N, 30:80-30:132N, 30:134-30:149, 30:151, 30:153-30:165, 32:07, 33:119, 68:45, 68:117
	240 bp		*24:19, 24:28, 24:44, 24:89, 24:290, 24:379, 24:406, 24:424	*02:76:01-02:76:02, 02:319, 02:666, 03:72, 11:88, 30:01:01:01-30:01:17, 30:11:01-30:11:02, 30:13-30:20, 30:23-30:24, 30:26, 30:30-30:31, 30:35-30:44, 30:46, 30:48-30:49, 30:52-30:54, 30:56, 30:58-30:60, 30:62-30:63, 30:65, 30:71-30:75, 30:78N, 30:81-30:83, 30:86-30:87, 30:89, 30:91-30:98, 30:102, 30:104, 30:106, 30:109-30:116, 30:118, 30:120, 30:122-30:123N, 30:125-30:126, 30:128-30:132N, 30:134-30:138, 30:140-30:143, 30:145N, 30:147-30:148, 30:154, 30:157, 30:159, 30:161, 30:163-30:165, 33:119, 68:45, 68:117



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25	205 bp	1070 bp	*24:13:01-24:13:02, 24:18, 24:24, 24:56, 24:94, 24:177, 24:188, 24:207:01-24:207:02, 24:228, 24:315, 24:355, 24:367, 24:381, 24:392	*02:17:02:01-02:17:04, 02:108, 02:110, 02:268, 02:300, 02:303, 02:617, 02:657, 03:347, 23:01:01:01-23:01:30, 23:03:01-23:65, 23:67-23:68, 23:70-23:104, 23:106N-23:108N, 29:07, 29:49, 31:29, 33:187, B*18:27
	230 bp		*24:18, 24:204, 24:213	*03:347
26⁴	90 bp 220 bp	800 bp	*24:96, 24:256 *24:22, 24:160, 24:299, 24:478	
27^{4,7}	80 bp 370 bp	800 bp	*24:32 *24:14:01:01-24:14:01:04, 24:324	*23:36, 32:05, 32:79 *02:46, 02:48, 02:70, 02:129, 02:571
28^{4,6,7}	75 bp 125 bp 155 bp	800 bp	*24:155N *24:266 *24:35, 24:264, 24:441	*02:691N *01:306, 11:193
29^{4,6,7}	75 bp 120 bp	800 bp	*24:155N *24:265, 24:271	*02:691N *01:45, 03:78, 11:108, 23:92, 23:96
	200 bp		*24:08, 24:29, 24:42, 24:89, 24:309-24:310:02, 24:342, 24:359N	*02:76:01-02:76:02, 02:319, 02:666, 23:80, 23:100, 30:22
30⁴	125 bp	800 bp	*24:21:01-24:21:03, 24:208:01-24:208:02	*01:301Q, 03:347, 11:139, 23:03:01-23:03:02, 23:70, 23:83, 29:07, 29:49, 31:29, 33:187, B*18:27
	200 bp		*24:59, 24:190, 24:210, 24:229, 24:285, 24:395	*01:301Q, 11:139
31	155 bp 235 bp	800 bp	*24:37 *24:04, 24:109, 24:119, 24:129	*01:02:01-01:02:02, 01:20, 01:188, 01:190, 01:307, 26:16, 29:37, 29:56, 30:57, 30:90
32	225 bp	1070 bp	*24:15, 24:41, 24:51, 24:92, 24:235	*01:01:01:01-01:01:65, 01:01:67-01:01:101, 01:01:103-01:04:01:02N, 01:06-01:33, 01:35-01:37:01:02, 01:39-01:41, 01:43-01:71, 01:73-01:101, 01:103-01:127, 01:129-01:138, 01:140:01-01:153, 01:155-01:166, 01:168-01:199, 01:201-01:220, 01:222-01:243, 01:245-01:266:02, 01:268-01:283, 01:285N-01:343, 11:27, 11:38-11:39, 11:94, 11:209, 11:271, 11:326, 23:31, 23:45, 23:55, 25:36, 25:59, 25:65, 26:29, 26:49, 32:13, 66:10, B*07:64, B*15:12:01-15:12:03, B*15:19, B*15:270, B*15:298, B*15:304N
33⁴	100 bp	1070 bp	*24:02:03Q, 24:39, 24:139	*01:01:38L, 11:01:98
34	195 bp	800 bp	*24:36N	
35	180 bp 205 bp	1070 bp	*24:142:01- 24:142:02 *24:45N, 24:88	
36^{4,7}	115 bp	1070 bp	*24:47, 24:124	*31:07, 31:10, B*51:290, B*52:87, B*53:58
	220 bp		*24:192	B*49:27



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	245 bp		*24:232N	
37	210 bp	1070 bp	*24:48N, 24:54	
38	145 bp	800 bp	*24:49	
	170 bp		*24:137	
	230 bp		*24:126	
39⁴	75 bp	800 bp	*24:185N	
	210 bp		*24:50	*02:129, 11:325
40⁴	95 bp	1070 bp	*24:02:03Q	*01:01:38L, 11:01:98
	225 bp		*24:08, 24:20:01:01-24:20:01:02, 24:88, 24:337, 24:342	
41	200 bp	1070 bp	*24:26, 24:62, 24:314	*01:39, 01:145, 23:45, 26:29, 26:49, 31:05, 32:13, 33:10, 66:10
	240 bp		*24:118, 24:132N	
42⁴	95 bp	1070 bp	*24:312N	*02:262, 02:547, 02:700, 02:910
	160 bp		*24:22, 24:160, 24:276, 24:299, 24:478	*26:16, 30:163, 33:119, 68:45, 68:117, C*04:81
	190 bp		*24:24, 24:67, 24:169, 24:290, 24:392	
43	160 bp	800 bp	*24:43, 24:159, 24:303N	*23:81
44	250 bp	800 bp	*24:51, 24:57, 24:92, 24:120, 24:458	*01:01:01:01-01:01:01:65, 01:01:67- 01:04:01:02N, 01:06-01:19, 01:21-01:33, 01:35-01:65, 01:67:01-01:71, 01:74-01:101, 01:103-01:129, 01:131-01:166, 01:168-01:199, 01:201-01:243, 01:245-01:266:02, 01:268-01:283, 01:285N-01:300, 01:302-01:343, 03:18, 03:97, 03:122, 03:135, 03:167, 11:27, 11:38-11:39, 11:94, 11:209, 11:271, 11:326, 25:36, 25:59, 25:65, 26:29, 26:49, 29:03, 29:33, 30:75, 31:05, 32:13, 33:10, 66:10, 68:26, 68:65, 68:115, 68:131, 80:01:01:01- 80:06
45^{7,8}	150 bp	1070 bp	*24:276	
	200 bp		*24:113, 24:370N	
	240 bp		*24:14:01:01-24:14:01:04, 24:52, 24:132N, 24:233, 24:291, 24:324	*01:20, 01:66, 01:73, 01:130, 02:19, 02:36-02:37, 02:54, 02:255, 02:417, 02:723, 02:848, 02:883, 25:36, 25:65, 26:29, 26:49, 66:10, B*07:64^w, B*15:12:01^w-15:12:03^w, B*15:19^w, B*15:270^w, B*15:298^w, B*15:304N^w
46⁴	110 bp	1070 bp	*24:15, 24:41, 24:51, 24:92, 24:235	*01:88:02-01:88:03, 01:236, 02:50, 02:73, 02:93:01-02:93:02, 02:122, 02:156, 02:172, 02:279, 02:594, 02:631, 02:651, 11:119:01-11:119:02, 11:209, 23:31, 23:45, 23:55, 26:10, 32:28, 32:66, 68:02:01:01-68:02:15, 68:15, 68:18N, 68:25, 68:27:01- 68:28, 68:31, 68:34, 68:40, 68:44, 68:48-68:49N, 68:51, 68:53-



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 MA123 v02 SSP PI Template
 Date: June 2022, Rev. No: 02

101.422-24/03 – including *Taq* polymerase, IFU-01
 101.422-24u/03u – without *Taq* polymerase, IFU-02

Visit www.caredx.com for
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Lot No.: **2L4**

Lot-specific information

				68:54, 68:60-68:62, 68:64, 68:67, 68:74, 68:77-68:78, 68:80-68:82, 68:86, 68:92, 68:97, 68:110, 68:119:01-68:119:02, 68:124- 68:125, 68:128, 68:138, 68:147, 68:153, 68:160, 68:163, 68:169- 68:170, 68:174, 68:178, 68:184, 68:186-68:187, 68:193, 68:198, 68:201, 68:216N, 68:219, 68:225, 69:04, B*07:136:02, B*40:323:02, B*44:59:02, B*44:136, B*51:136, C*07:204:01, C*07:482, C*12:37
47	195 bp 410 bp	800 bp	*24:18, 24:56, 24:123, 24:177, 24:355, 24:367, 24:381 *24:26	*03:347 *03:30, 03:152, 03:273, 11:325, 30:07, 31:08, 32:05, 32:79, 33:53
48⁵	195 bp	1070 bp	*24:24, 24:71, 24:315, 24:392	*23:01:01:01-23:23, 23:25-23:33, 23:35-23:56, 23:58-23:65, 23:67- 23:68, 23:70-23:103N, 23:105- 23:108N, 29:07, 29:49, 31:29, 33:187, B*18:27
49	165 bp 250 bp	1070 bp	*24:159 *24:23, 24:220	B*18:27
50	165 bp 225 bp 260 bp	1070 bp	*24:251 *24:34, 24:252N, 24:270 *24:163N, 24:255	*23:27
51	165 bp 215 bp	800 bp	*24:140 *24:38, 24:337	
52^{4,7}	75 bp 210 bp 240 bp	800 bp	*24:293 *24:264, 24:441 *24:40N	*11:359 *01:306, 11:193
53⁴	125 bp 160 bp 230 bp	1070 bp	*24:158N *24:303N *24:55, 24:315, 24:374	
54⁷	175 bp 285 bp	1070 bp	*24:58, 24:169, 24:359N *24:248	C*04:81 C*03:231, C*04:52, C*04:55, C*04:405, C*14:10, C*14:46:02
55⁴	80 bp 240 bp 275 bp	1070 bp	*24:205 *24:60N, 24:302, 24:307 *24:173	*23:40
56	270 bp	1070 bp	*24:63	*26:169, 68:92
57	135 bp	1070 bp	*24:64	*02:736, C*12:37
58	200 bp	1070 bp	*24:66, 24:96, 24:146, 24:308, 24:333	*23:46, 30:75
59	240 bp 280 bp	1070 bp	*24:68, 24:143 *24:127, 24:215, 24:288	*23:78
60	140 bp 210 bp 275 bp	800 bp	*24:250 *24:183N, 24:270 *24:69	
61^{4,6}	105 bp 165 bp 280 bp	800 bp	*24:70 *24:323N *24:127, 24:141, 24:288	
62⁴	120 bp	800 bp	*24:72, 24:91	*01:243, 02:106, 02:145



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Lot-specific information

	180 bp		*24:275	
	280 bp		*24:297	*23:16, 33:180, 68:107
63	135 bp	1070 bp	*24:73, 24:157, 24:453	*03:170, B*18:38, B*40:197, B*57:68
64^{4,7}	115 bp	1070 bp	*24:124	*31:07, 31:10
65⁴	80 bp	1070 bp	*24:75	*01:267
	155 bp		*24:194	
	180 bp		*24:275	
	235 bp		*24:90:01N-24:90:02N	*02:88N, 02:622N, 02:643N [?]
66	155 bp	800 bp	*24:77	*11:01:76, 11:106, 23:28, 32:05
67⁴	90 bp	1070 bp	*24:249, 24:267	*23:18, 23:88
	230 bp		*24:79	
68⁷	220 bp	800 bp	*24:143, 24:353	
	280 bp		*24:78, 24:141, 24:196	
69⁴	115 bp	1070 bp	*24:80, 24:225:01-24:225:02	C*04:302, C*14:14
	200 bp		*24:370N	
	265 bp		*24:184, 24:240N	
70⁴	110 bp	1070 bp	*24:134	
	200 bp		*24:96, 24:146	
	255 bp		*24:81, 24:356	
71⁴	120 bp	800 bp	*24:128, 24:269	*23:29
	205 bp		*24:183N, 24:199	
	250 bp		*24:82, 24:280	*29:13, 31:07-31:08, 31:10, 32:42, 32:97
72^{4,7}	120 bp	1070 bp	*24:83N, 24:265-24:266	
	150 bp		*24:354	
73⁴	100 bp	1070 bp	*24:84N	
	170 bp		*24:131, 24:138, 24:188, 24:218	*02:17:02:01-02:17:04, 02:108, 02:110, 02:268, 02:300, 02:303, 02:617, 02:657, 02:680
74	155 bp	1070 bp	*24:180, 24:323N	
	195 bp		*24:85, 24:197	
75	145 bp	1070 bp	*24:180	
	190 bp		*24:345	
	285 bp		*24:86N, 24:196, 24:215	*23:78
76⁷	175 bp	1070 bp	*24:76, 24:263	
	255 bp		*24:98, 24:220	B*18:27
77⁴	115 bp	800 bp	*24:331	
	145 bp		*24:122	
	210 bp		*24:06, 24:87, 24:138, 24:167, 24:285, 24:289, 24:339, 24:381	*02:680, 23:02, 23:66
78	140 bp	800 bp	*24:57, 24:92, 24:120, 24:458	*01:88:02-01:88:03, 01:236, 02:50, 02:73, 02:122, 02:156, 02:245, 02:334, 02:338, 02:890, 03:17:01, 03:171, 11:119:01-11:119:02, 11:209, 26:10, 29:101:01-29:101:02, 30:61, 30:74, 31:67-31:68, 32:28, 32:66, 33:32:01, 33:152, 68:01:01:01-68:01:21, 68:01:23-68:01:29, 68:01:31-68:43:02, 68:45-68:82, 68:84-68:90, 68:92-68:104:02,



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Lot-specific information

				68:106-68:122, 68:124-68:139, 68:141-68:144, 68:146-68:231
79	195 bp 250 bp	1070 bp	*24:182 *24:14:01:01-24:14:01:04, 24:93, 24:114, 24:233, 24:324	*23:76 *01:20, 01:66, 01:130, 02:19, 02:36-02:37, 02:54, 02:255, 02:417, 02:723, 02:848, 02:883
80	170 bp 220 bp	1070 bp	*24:140, 24:142:01-24:142:02 *24:95	
81⁴	100 bp 215 bp	1070 bp	*24:139 *24:97, 24:133, 24:377	
82	185 bp 230 bp 285 bp	1070 bp	*24:99, 24:130 *24:125, 24:302, 24:472 *24:248	*23:40 C*03:231, C*04:52, C*04:55, C*04:405, C*14:10, C*14:46:02 C*04:302, C*14:14
83⁴	125 bp 270 bp	800 bp	*24:111, 24:225:01-24:225:02 *24:101, 24:173, 24:240N	
84^{4,7}	105 bp 210 bp 290 bp	1070 bp	*24:103, 24:331 *24:107 *24:102, 24:287	
85	145 bp 210 bp	1070 bp	*24:117 *24:104	*03:30, 03:152, 03:273, 23:64, 32:05, 32:79
86	190 bp 255 bp	1070 bp	*24:121, 24:182 *24:105, 24:222N, 24:356	*23:76, 23:97
87⁴	90 bp	1070 bp	*24:17, 24:41, 24:62, 24:106, 24:208:01-24:208:02, 24:330	*01:301Q, 03:347, 11:139, 23:31, 23:45, 23:53, 23:70, 29:07, 29:49, 31:29, 33:187
	120 bp 190 bp		*24:110 *24:136, 24:197	
88⁴	75 bp 170 bp 420 bp	1070 bp	*24:185N *24:116, 24:137 *24:352	
89⁴	75 bp	1070 bp	*24:07:01:01-24:07:03, 24:108, 24:112, 24:131, 24:288, 24:339, 24:347:01-24:347:02, 24:387, 24:453, 24:457, 24:477 *24:192 *24:112, 24:414	*23:13 B*49:27 B*13:102, B*44:322, B*51:129
90⁴	220 bp 270 bp 100 bp 180 bp 265 bp 290 bp	1070 bp	*24:115, 24:206 *24:168 *24:322 *24:234, 24:287, 24:339, 24:347:02	*23:47
91⁴	80 bp 270 bp	1070 bp	*24:135:01-24:135:02, 24:357N *24:238	*23:45, 23:73
92	150 bp 185 bp	1070 bp	*24:354 *24:144, 24:263, 24:268	
93	170 bp	1070 bp	*24:74:01-24:74:02	23:102, B*13:90, B*37:90, B*44:63^w, B*57:105 *32:97
	245 bp 270 bp		*24:280 *24:112, 24:414	B*13:102, B*44:322, B*51:129
94⁴	105 bp 190 bp 220 bp 265 bp	800 bp	*24:206 *24:345 *24:278N *24:322	



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Lot-specific information

95⁴	115 bp	1070 bp	*24:269	
	145 bp		*24:231, 24:250	
	260 bp		*24:163N	
	355 bp		*24:14:01:01-24:14:01:04, 24:291, 24:410	*02:81, 02:87, 02:112, 02:124, 02:129, 02:136, 02:571, 23:82
96⁹	Negative Control			

¹Alleles are assigned by the presence of specific PCR product(s). However, the sizes of the specific PCR products may be helpful in the interpretation of HLA-A*24 SSP typings.

When the primers in a primer mix can give rise to HLA-specific PCR products of more than one length this is indicated if the size difference is more than 20 base pairs. Size differences of 20 base pairs or less are not given. For high resolution SSP kits, the alleles listed are specified according to amplicon length.

Nonspecific amplifications, i.e. a ladder or a smear of bands, may sometimes be seen. GC-rich primers have a higher tendency of giving rise to nonspecific amplifications than other primers.

PCR fragments longer than the control bands may sometimes be observed. Such bands should be disregarded and do not influence the interpretation of the SSP typings.

PCR fragments migrating faster than the control bands, but slower than a 400 bp fragment may be seen in some gel read-outs. Such bands can be disregarded and do not influence the interpretation of the SSP typings.

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherent feature of the primer pair(s) of a primer mix. More often it is due to other factors such as too low amount of DNA in the PCR reactions, taking too long time in setting up the PCR reactions, working at elevated room temperature or using thermal cyclers that are not pre-heated.

²The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

³For several HLA Class I alleles 1st and/or 4th exon(s) and beyond, as well as intron nucleotide sequences, are not available. In these instances it is not known whether some of the primers of the SSP sets are completely matched with the target sequences or not. Assumption is made that unknown sequences in these regions are conserved within allelic groups.

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

⁵Primer mixes 4, 6 and 48 may give rise to a lower yield of HLA-specific PCR product than the other A*24 primer mixes.

⁶Primer mixes 10, 20, 28, 29 and 61 have a tendency to giving rise to primer oligomer formation.

⁷Primer mixes 1, 11, 19, 20, 27, 28, 29, 36, 45, 52, 54, 64, 68, 72, 76 and 84 may have tendencies of unspecific amplifications.

⁸Primer mix 45 may give rise to a long fragment of approx. 500 bp in some HLA-A alleles. This band should not be considered in the interpretation of HLA-A*24 typings.

⁹Primer mix 96 contains a negative control, which will amplify a majority of HLA amplicons as well as the amplicons generated by the control primer pairs matching the human growth hormone gene. HLA-specific PCR product sizes range from 75 to 200 base pairs and the PCR product generated by the HGH positive control primer pair is 200 base pairs.

Abbreviations

‘w’, might be weakly amplified.

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



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101.422-24/03 – including *Taq* polymerase, IFU-01
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“Instructions for Use” (IFU)

Lot No.: 2L4

Lot-specific information

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec. PCR product	180	245	210	220	175	175	335	75	225	370	200	235
Length of int. pos. control ¹	800	1070	800	1070	1070	1070	1070	1070	800	800	1070	1070
5'-primer(s) ²	678 5'-AgA 3'	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	312 5'-ATT 3'	265 5'-CAg 3'	98 5'-CTC 3'	282 5'-CAC 3'	98 5'-CTC 3'	28 5'-TCg 3'
							315 5'-gCC 3'			282 5'-CAT 3'		
							317 5'-gCT 3'					
3'-primer(s) ³	819 5'-ggT 3'	570 5'-CAC 3'	539 5'-TCT 3'	538 5'-CAA 3'	502 5'-CTT 3'	502 5'-CTg 3'	368 5'-CAA 3'	299 5'-TCg 3'	282 5'-gAC 3'	368 5'-CAA 3'	256 5'-CCC 3'	92 5'-AAC 3'
	819 5'-ggA 3'			538 5'-CCA 3'					282 5'-gAC 3'		293 5'-ggA 3'	
				538 5'-CAg 3'							303 5'-AgT 3'	
				555 5'-CCA 3'								
Well No.	1	2	3	4	5	6	7	8	9	10	11	12

Well No.	13	14	15	16	17	18	19	20	21	22	23	24
Length of spec. PCR product	160	95	105	85	230	275	195	470	155	125	190	215
Length of int. pos. control ¹	1070	1070	800	1070	1070	1070	1070	1070	800	800	800	800
5'-primer(s) ²	453 5'-AAA 3'	678 5'-AgA 3'	265 5'-CAg 3'	368 5'-gTT 3'	368 5'-gTT 3'	2 nd 5'-CgA 3'	678 5'-AgA 3'	3 rd 5'-ATA 3'	144 5'-gCC 3'	485 5'-CAg 3'	144 5'-gCC 3'	98 5'-CTC 3'
	453 5'-AAA 3'									666 5'-gAA 3'		
3'-primer(s) ³	570 5'-CCg 3'	728 5'-CCT 3'	320 5'-AgA 3'	413 5'-gCC 3'	553 5'-CTg 3'	570 5'-CCg 3'	831 5'-TCC 3'	621 5'-ggg 3'	259 5'-CTg 3'	570 5'-CCg 3'	292 5'-gTg 3'	270 5'-ACA 3'
	570 5'-CAg 3'	742 5'-CTA 3'	341 5'-CgT 3'		559 5'-CCg 3'				320 5'-AgC 3'	806 5'-CCg 3'	292 5'-gTg 3'	299 5'-CCA 3'
	573 5'-AgT 3'	800 5'-ACC 3'	368 5'-CAT 3'		559 5'-CCg 3'							
Well No.	13	14	15	16	17	18	19	20	21	22	23	24



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101.422-24/03 – including *Taq* polymerase, IFU-01
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Visit www.caredx.com for
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Lot No.: **2L4**

Lot-specific information

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec. PCR product	205	90	80	75	75	125	155	225	100	195	180	115
				155	200						205	220
												245
Length of int. pos. control ¹	1070	800	800	800	800	800	800	1070	1070	800	1070	1070
5'-primer(s) ²	368 5'-gTT 3'	368 5'-gTT 3'	265 5'-CAg 3'	98 5'-CTC 3'	98 5'-CTC 3'	368 5'-gTT 3'	98 5'-CTC 3'	385 5'-ggC 3'	368 5'-gTT 3'	98 5'-CTC 3'	98 5'-CTT 3'	114 5'-Cgg 3'
				662 5'-CCg 3'	692 5'-ggC 3'				650 5'-CCC 3'		105 5'-Tgg 3'	140 5'-CAC 3'
				695 5'-CTC 3'	704 5'-TgT 3'						124 5'-gCC 3'	242 5'-gCT 3'
				741 5'-g.C 3'	741 5'-g.C 3'						124 5'-gCA 3'	243 5'-CCT 3'
3'-primer(s) ³	527 5'-CCT 3'	419 5'-CgA 3'	302 5'-ggC 3'	214 5'-CCA 3'	247 5'-TC 3'	453 5'-TCg 3'	212 5'-gCA 3'	570 5'-CCg 3'	427 5'-gTA 3'	250 5'-CA 3'	265 5'-CCC 3'	317 5'-ggA 3'
	539 5'-TCA 3'	545 5'-AgA 3'	355 5'-gAC 3'	777 5'-gCA 3'	265 5'-CCg 3'	453 5'-TCA 3'	289 5'-AgC 3'		427 5'-gTT 3'			
	555 5'-CCA 3'				777 5'-gCA 3'	527 5'-CCg 3'	299 5'-TCg 3'		705 5'-TCT 3'			
Well No.	25	26	27	28	29	30	31	32	33	34	35	36

Well No.	37	38	39	40	41	42	43	44	45	46	47	48
Length of spec. PCR product	210	145	75	95	200	95	160	250	150	110	195	195
Length of int. pos. control ¹	1070	800	800	1070	1070	1070	800	800	1070	1070	800	1070
5'-primer(s) ²	368 5'-gTT 3'	77 5'-CTT 3'	98 5'-CTA 3'	28 5'-TCg 3'	370 5'-TTA 3'	98 5'-CTC 3'	368 5'-gTT 3'	355 5'-CCA 3'	98 5'-CTC 3'	385 5'-ggC 3'	28 5'-TCC 3'	368 5'-gTT 3'
		134 5'-CCA 3'	232 5'-AgT 3'	650 5'-CCC 3'	375 5'-TgA 3'	418 5'-AgT 3'		363 5'-ATA 3'	360 5'-CAC 3'		115 5'-ggT 3'	
		160 5'-ACT 3'			404 5'-CCA 3'				362 5'-gAg 3'		368 5'-gTT 3'	
					414 5'-CAg 3'				362 5'-gAg 3'			
									375 5'-TgA 3'			
									410 5'-gTg 3'			
3'-primer(s) ³	532 5'-CTA 3'	265 5'-CCC 3'	265 5'-CCC 3'	81 5'-gAT 3'	570 5'-CCg 3'	153 5'-ACT 3'	485 5'-CA 3'	570 5'-CCg 3'	209 5'-gCC 3'	453 5'-TCT 3'	265 5'-CCC 3'	524 5'-CAC 3'
	544 5'-ggg 3'			705 5'-TCT 3'		209 5'-gCC 3'	488 5'-CCT 3'		256 5'-CTA 3'		527 5'-CCT 3'	524 5'-CAC 3'
						239 5'-gCT 3'	490 5'-AgT 3'		570 5'-CCg 3'			
						259 5'-gTT 3'						
						545 5'-AgA 3'						
Well No.	37	38	39	40	41	42	43	44	45	46	47	48



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Lot-specific information

Well No.	49	50	51	52	53	54	55	56	57	58	59	60
Length of spec.	165	165	165	75	125	175	80	270	135	200	240	140
PCR product	250	225	215	210	160	285	240				280	210
		260		240	230		275					275
Length of int.	1070	1070	800	800	1070	1070	1070	1070	1070	1070	1070	800
pos. control ¹												
5'-primer(s) ²	368 5'-gTT 3'	98 5'-CTC 3'	90 5'-AgC 3'	506 5'-gCA 3'	368 5'-gTT 3'	98 5'-CTC 3'	98 5'-CTC 3'	28 5'-TCg 3'	361 5'-AgT 3'	412 5'-ATA 3'	368 5'-gTT 3'	28 5'-TCg 3'
		678 5'-AgA 3'	142 5'-TCA 3'	630 5'-AAg 3'						414 5'-gAA 3'		678 5'-AgA 3'
				662 5'-CCg 3'								
3'-primer(s) ³	490 5'-AgT 3'	281 5'-A.T 3'	265 5'-CCC 3'	539 5'-TCT 3'	452 5'-..T 3'	221 5'-ACA 3'	137 5'-TgC 3'	127 5'-CTT 3'	453 5'-TCT 3'	570 5'-CCg 3'	559 5'-CAG 3'	131 5'-ggA 3'
	570 5'-CAG 3'	290 5'-CAA 3'		831 5'-TCC 3'	485 5'-CA 3'	239 5'-gCT 3'	293 5'-ggA 3'				582 5'-TAg 3'	775 5'-AgT 3'
	583 5'-gTg 3'	316 5'-gAA 3'			559 5'-CTC 3'	247 5'-TC 3'	295 5'-TCA 3'				605 5'-gCA 3'	843 5'-gTT 3'
		800 5'-ACC 3'				343 5'-T 3'	299 5'-TCg 3'				614 5'-TgA 3'	852 5'-ACC 3'
		852 5'-ACC 3'					330 5'-TgT 3'					
		895 5'-A 3'										
Well No.	49	50	51	52	53	54	55	56	57	58	59	60

Well No.	61	62	63	64	65	66	67	68	69	70	71	72
Length of spec.	105	120	135	115	80	155	90	220	115	110	120	120
PCR product	165	180			155		230	280	200	200	205	150
	280	280			180				265	255	250	
					235							
Length of int.	800	800	1070	1070	1070	800	1070	800	1070	1070	800	1070
pos. control ¹												
5'-primer(s) ²	368 5'-gTT 3'	379 5'-ACA 3'	409 5'-ggC 3'	243 5'-CCT 3'	420 5'-TAG 3'	144 5'-gCC 3'	678 5'-AgA 3'	368 5'-gTT 3'	98 5'-CTC 3'	349 5'-CTT 3'	98 5'-CAC 3'	667 5'-AgA 3'
		476 5'-CAA 3'			420 5'-TAA 3'			1021 5'-gAg 3'		359 5'-CCT 3'	113 5'-CCA 3'	692 5'-ggC 3'
		530 5'-ggT 3'			476 5'-CAA 3'					412 5'-ATA 3'	228 5'-ATg 3'	695 5'-CTC 3'
		542 5'-gAA 3'			504 5'-AAC 3'					499 5'-TCC 3'	678 5'-AgA 3'	699 5'-TAA 3'
					575 5'-gCg 3'							
3'-primer(s) ³	434 5'-CCC 3'	616 5'-CgT 3'	502 5'-CTT 3'	317 5'-ggA 3'	616 5'-CgT 3'	256 5'-CTg 3'	727 5'-CCA 3'	559 5'-CAG 3'	163 5'-Cgg 3'	570 5'-CCg 3'	317 5'-ggA 3'	777 5'-gCA 3'
	493 5'-CTA 3'						728 5'-CCT 3'	605 5'-gCC 3'	178 5'-gAg 3'		753 5'-gTC 3'	
	605 5'-gCC 3'						866 5'-gAT 3'	610 5'-CTT 3'	180 5'-TCC 3'		842 5'-Tgg 3'	
	614 5'-TgA 3'							614 5'-TgT 3'	256 5'-CTA 3'		843 5'-gTT 3'	
								1047 5'-TT 3'	323 5'-AgC 3'			
									324 5'-TAC 3'			
Well No.	61	62	63	64	65	66	67	68	69	70	71	72



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For *In Vitro* Diagnostic Use
MA123 v02 SSP PI Template
Date: June 2022, Rev. No: 02

101.422-24/03 – including *Taq* polymerase, IFU-01
101.422-24u/03u – without *Taq* polymerase, IFU-02

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

Lot No.: **2L4**

Lot-specific information

Well No.	73	74	75	76	77	78	79	80	81	82	83	84
Length of spec.	100	155	145	175	115	140	195	170	100	185	125	105
PCR product	170	195	190	255	145		250	220	215	230	270	210
			285		210					285		290
Length of int.	1070	1070	1070	1070	800	800	1070	1070	1070	1070	800	1070
pos. control ¹												
5'-primer(s) ²	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	368 5'-gTT 3'	355 5'-CCA 3'	355 5'-CCg 3'	88 5'-Tgg 3'	368 5'-gTT 3'	98 5'-CTC 3'	98 5'-CTC 3'	368 5'-gTT 3'
				640 5'-Tgg 3'			360 5'-CAC 3'	124 5'-gCC 3'		368 5'-gTT 3'		
				650 5'-CCT 3'			365 5'-gAC 3'	124 5'-gCA 3'				
							416 5'-CCg 3'	142 5'-TCA 3'				
3'-primer(s) ³	426 5'-TCT 3'	473 5'-CgA 3'	473 5'-CgA 3'	583 5'-gTg 3'	442 5'-gAg 3'	453 5'-TCT 3'	570 5'-CCg 3'	265 5'-CCC 3'	427 5'-gTT 3'	299 5'-TCg 3'	178 5'-gAg 3'	422 5'-AgC 3'
	497 5'-Tgg 3'	493 5'-CTA 3'	518 5'-CCT 3'	587 5'-CCC 3'	473 5'-CgC 3'				536 5'-gCC 3'	343 5'-T 3'	180 5'-TCC 3'	442 5'-gAg 3'
		518 5'-CCA 3'	605 5'-gCA 3'	777 5'-gCA 3'	539 5'-TCC 3'				542 5'-CTg 3'	505 5'-gCT 3'	190 5'-ggT 3'	538 5'-gTg 3'
		525 5'-ACT 3'	610 5'-CTT 3'						553 5'-CTg 3'	517 5'-CgT 3'	324 5'-TAC 3'	616 5'-CCT 3'
			616 5'-CgT 3'							553 5'-CTT 3'	330 5'-TgT 3'	617 5'-CCA 3'
											333 5'-CTg 3'	
Well No.	73	74	75	76	77	78	79	80	81	82	83	84

Well No.	85	86	87	88	89	90	91	92	93	94	95
Length of spec.	145	190	90	75	75	100	80	150	170	105	115
PCR product	210	255	120	170	220	180	270	185	245	190	145
			190	420	270	265			270	220	260
						290				265	355
Length of int.	1070	1070	1070	1070	1070	1070	1070	1070	1070	800	1070
pos. control ¹											
5'-primer(s) ²	98 5'-CTT 3'	349 5'-CTT 3'	368 5'-gTT 3'	17 5'-gCT 3'	89 5'-gAA 3'	368 5'-gTT 3'	368 5'-gTT 3'	626 5'-CCA 3'	89 5'-gAA 3'	368 5'-gTT 3'	317 5'-gCT 3'
	159 5'-gAA 3'	358 5'-TCg 3'		134 5'-CCA 3'	140 5'-CAC 3'			630 5'-AAT 3'	113 5'-CCA 3'		678 5'-AgA 3'
		359 5'-C.A 3'		141 5'-ATg 3'	282 5'-CAg 3'			640 5'-Tgg 3'	186 5'-Agg 3'		
		416 5'-CCg 3'		232 5'-AgT 3'				667 5'-AgA 3'	186 5'-AgA 3'		
		419 5'-gTC 3'									
3'-primer(s) ³	265 5'-CCC 3'	570 5'-CCg 3'	418 5'-gTC 3'	265 5'-CCC 3'	317 5'-ggA 3'	421 5'-ggT 3'	397 5'-gAg 3'	777 5'-gCA 3'	317 5'-ggA 3'	430 5'-gCT 3'	391 5'-CCA 3'
			448 5'-CAC 3'			430 5'-gCT 3'	399 5'-AgC 3'			518 5'-CCT 3'	753 5'-gTC 3'
			518 5'-CCA 3'			506 5'-TgA 3'	419 5'-gT 3'			549 5'-AgC 3'	775 5'-AgT 3'
			521 5'-ggA 3'			594 5'-CCT 3'	595 5'-CCA 3'			594 5'-CCT 3'	784 5'-ATg 3'
						616 5'-CCT 3'					895 5'-A 3'
						616 5'-CgC 3'					
Well No.	85	86	87	88	89	90	91	92	93	94	95



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For *In Vitro* Diagnostic Use
MA123 v02 SSP PI Template
Date: June 2022, Rev. No: 02

101.422-24/03 – including *Taq* polymerase, IFU-01
 101.422-24u/03u – without *Taq* polymerase, IFU-02

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

Lot No.: **2L4**

Lot-specific information

¹The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 1070 or 800 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the shorter, 800 bp, internal positive control band. The well distribution of the internal controls can help in orientation of the kit on gel photo, as well as allow for kit identification. In the presence of a specific amplification the intensity of the control band often decreases.

²The nucleotide position matching the specificity-determining 3'-end of the primer is given. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.

³The nucleotide position matching the specificity-determining 3'-end of the primer is given in the anti-sense direction. Nucleotide numbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.



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For *In Vitro* Diagnostic Use
 MA123 v02 SSP PI Template
 Date: June 2022, Rev. No: 02

101.422-24/03 – including *Taq* polymerase, IFU-01
 101.422-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **2L4**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A*24 SSP subtyping kit ²																				
				Well																
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
				Prod. No.	201903901	201903902	201903903	201903904	201903905	201903906	202020607	201903908	201903909	201903910	201903911	201903912	201903913	201903914	201903915	201903916
	IHWC cell line ¹	A*	A*																	
1	9001 SA	*24:02		+	-	+	-	+	-	+	-	-	+	-	-	+	-	-	-	
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*24:02		+	-	+	-	+	-	+	-	-	+	-	-	+	-	-	-	
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075 DKB	*24:02		+	-	+	-	+	-	+	-	-	+	-	-	+	-	-	-	
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*02:17		-	+	-	+	W	-	-	-	-	+	-	-	-	-	-	-	
22	9056 KOSE	*02:01		-	-	-	-	W	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*24:10	*29:01	+	+	+	-	+	-	+	-	-	+	-	-	-	-	-	-	
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099 LZL	*02:17		-	+	-	+	W	-	-	-	-	+	-	-	-	-	-	-	
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*23:01	*24:02	+	-	+	+	+	+	+	-	-	+	-	-	+	-	-	-	
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



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101.422-24/03 – including *Taq* polymerase, IFU-01
101.422-24u/03u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **2L4**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A*24 SSP subtyping kit ²																				
				Well																
				17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
				Prod. No.	201903917	201903918	201903919	201903920	201903921	201903922	201903923	201903924	201903925	201903926	201903927	201903928	201903929	201903930	201903931	201903932
	HW	C	cell line ¹	A*	A*															
1	9001	SA		*24:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	
2	9280	LK707		*02:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
3	9011	E4181324		*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	
4	9275	GU373		*30:01		-	-	-	-	-	-	-	+	-	-	-	-	-	-	
5	9009	KAS011		*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	+	
6	9353	SM		*02:01	*26:03	-	-	-	-	-	+	+	-	-	-	-	-	-	-	
7	9020	QBL		*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025	DEU		*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026	YAR		*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9107	LKT3		*24:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	
11	9051	PITOUT		*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	9052	DBB		*02:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
13	9004	JESTHOM		*02:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
14	9071	OLGA		*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075	DKB		*24:02		-	-	+	-	-	-	-	-	-	-	-	-	-	-	
16	9037	SWEIG007		*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9282	CTM3953540		*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	9257	32367		*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	9038	BM16		*02:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
20	9059	SLE005		*02:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
21	9064	AMALA		*02:17		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
22	9056	KOSE		*02:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
23	9124	IHL		*02:01	*34:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
24	9035	JBUSH		*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049	IBW9		*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285	WT49		*02:05		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
27	9191	CH1007		*24:10	*29:01	+	-	+	-	-	-	-	-	-	-	-	-	-	-	
28	9320	BEL5GB		*02:01	*29:02	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
29	9050	MOU		*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021	RSH		*30:01	*68:02	-	-	-	-	-	-	-	+	-	-	-	-	-	-	
31	9019	DUCAF		*30:02		-	-	-	-	-	-	-	+	-	-	-	-	-	-	
32	9297	HAG		*02:01		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
33	9098	MT14B		*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104	DHIF		*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	9302	SSTO		*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024	KT17		*02:06	*11:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
37	9065	HHKB		*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099	LZL		*02:17		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
39	9315	CML		*01:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
40	9134	WHONP199		*02:07	*30:01	-	-	-	-	-	+	-	+	-	-	-	-	-	-	
41	9055	H0301		*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
42	9066	TAB089		*02:07		-	-	-	-	-	+	-	-	-	-	-	-	-	-	
43	9076	T7526		*02:06	*02:07	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
44	9057	TEM		*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239	SHJO		*23:01	*24:02	-	-	+	-	-	-	-	-	+	-	-	-	-	-	
46	9013	SCHU		*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045	TUBO		*02:16	*03:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	
48	9303	TER-ND		*02:01	*11:01	-	-	-	-	-	+	-	-	-	-	-	-	-	-	



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For *In Vitro* Diagnostic Use
MA123 v02 SSP PI Template
Date: June 2022, Rev. No: 02

101.422-24/03 – including *Taq* polymerase, IFU-01
 101.422-24u/03u – without *Taq* polymerase, IFU-02

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 “Instructions for Use” (IFU)

Lot No.: **2L4**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A*24 SSP subtyping kit ²																				
				Well																
				33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
				Prod. No.	201903933	201903934	201903935	201903936	201903937	201903938	201903939	201903940	201903941	201903942	201903943	201903944	201903945	201903946	201903947	201903948
	IHWC cell line ¹	A*	A*																	
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



0197

101.422-24/03 – including *Taq* polymerase, IFU-01
 101.422-24u/03u – without *Taq* polymerase, IFU-02

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

Lot No.: **2L4**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A*24 SSP subtyping kit ²																				
				Well																
				49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	
				Prod. No.	201903949	201903950	201903951	201903952	201903953	201903954	201903955	201903956	201903957	201903958	201903959	201903960	201903961	201903962	201903963	201903964
	IHWC cell line ¹	A*	A*																	
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



0197

101.422-24/03 – including *Taq* polymerase, IFU-01
 101.422-24u/03u – without *Taq* polymerase, IFU-02

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

Lot No.: **2L4**

Lot-specific information

CELL LINE VALIDATION SHEET																				
HLA-A*24 SSP subtyping kit ²																				
				Well																
				65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	
				Prod. No.	201903965	201903966	201903967	201903968	201903969	201903970	201903971	201903972	201903973	201903974	201903975	201903976	201903981	201903982	201903983	201903980
IHCW cell line ¹		A*	A*																	
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



0197

101.422-24/03 – including *Taq* polymerase, IFU-01
 101.422-24u/03u – without *Taq* polymerase, IFU-02

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

Lot No.: **2L4**

Lot-specific information

CELL LINE VALIDATION SHEET																			
HLA-A*24 SSP subtyping kit ²																			
				Well															
				81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	
				Prod. No.	201903981	201903982	201903983	201903984	201903985	201903986	201903987	201903988	201903989	201903990	201903991	201903992	201903993	201903994	201903995
	IHWC cell line ¹	A*	A*																
1	9001 SA	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	9280 LK707	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	9011 E4181324	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	9275 GU373	*30:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	9009 KAS011	*01:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	9353 SM	*02:01	*26:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	9020 QBL	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	9025 DEU	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	9026 YAR	*26:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	9107 LKT3	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	9051 PITOUT	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	9052 DBB	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	9004 JESTHOM	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	9071 OLGA	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	9075 DKB	*24:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	9037 SWEIG007	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	9282 CTM3953540	*03:01	*80:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	9257 32367	*33:03	*74:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	9038 BM16	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	9059 SLE005	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	9064 AMALA	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	9056 KOSE	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	9124 IHL	*02:01	*34:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	9035 JBUSH	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	9049 IBW9	*33:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	9285 WT49	*02:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	9191 CH1007	*24:10	*29:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	9320 BEL5GB	*02:01	*29:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	9050 MOU	*29:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	9021 RSH	*30:01	*68:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	9019 DUCAF	*30:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
32	9297 HAG	*02:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
33	9098 MT14B	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34	9104 DHIF	*31:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
35	9302 SSTO	*32:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
36	9024 KT17	*02:06	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
37	9065 HHKB	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
38	9099 LZL	*02:17		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
39	9315 CML	*01:01	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
40	9134 WHONP199	*02:07	*30:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
41	9055 H0301	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
42	9066 TAB089	*02:07		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
43	9076 T7526	*02:06	*02:07	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44	9057 TEM	*66:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
45	9239 SHJO	*23:01	*24:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46	9013 SCHU	*03:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
47	9045 TUBO	*02:16	*03:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
48	9303 TER-ND	*02:01	*11:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



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101.422-24/03 – including *Taq* polymerase, IFU-01
 101.422-24u/03u – without *Taq* polymerase, IFU-02

Visit www.caredx.com for
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Lot No.: **2L4**

Lot-specific information

¹The provided cell line HLA specificities are retrieved from the <http://www.ihwg.org/hla> web site. The specificity of an individual cell line may thus be subject to change.

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

No DNAs carrying the alleles to be amplified by primer solutions 8, 11, 21, 26 to 29, 35, 36, 38, 39, 41 to 43, 45, 47, 50 to 72, 74 to 77, 79 to 86, 88 and 90 to 95 were available. The specificities of the primers in primer solutions 8, 11, 26 to 29, 36, 38, 39, 41, 42, 45, 47, 51, 53, 54, 56 to 59, 63, 64, 68, 70, 71, 76, 77, 79, 80, 82, 84, 85, 88, 90, 91, 93 and 95 were tested by separately adding one, two or three additional 5'-primers, respectively one, two or three additional 3'-primers.

In primer solutions 21, 43, 50, 55, 60, 61, 66, 67, 69, 74, 75, 81, 83 and 94 it was only possible to test the 5'-primers, the 3'-primers were not possible to test.

In primer solutions 35, 52, 62, 65, 72, 86 and 92 it was only possible to test the 3'-primers, the 5'-primers were not possible to test.

In primer solutions 7, 10, 22, 28, 29, 36, 38, 39, 41, 45, 47, 51, 68, 70, 71, 76, 79, 80, 85, 88, 89 and 93 one or more 5'-primers were not possible to test, and in primer solutions 1, 4, 11, 13, 15, 17, 23, 28, 29, 31, 33, 37, 40, 42, 45, 49, 53, 54, 59, 68, 71, 73, 76, 77, 82, 84, 87, 90, 91 and 95 one or more 3'-primers were not possible to test.

Additional primers in primer solutions 4, 15, 22, 25, 30, 33, 40, 49 and 89 were tested by separately adding additional 5'-primers or 3'-primers.



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101.422-24/03 – including *Taq* polymerase, IFU-01
101.422-24u/03u – without *Taq* polymerase, IFU-02

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Lot No.: **2L4**

Lot-specific information

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For *In Vitro* Diagnostic Use

MA123 v02 SSP PI Template

Date: June 2022, Rev. No: 02