101.563-24/03 – including *Taq* pol., IFU-01
101.563-24u/03u – without *Taq* pol., IFU-02

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Lot No.: 5K4 **Lot-specific information**

Olerup SSP® HLA-B*44

Product number:	**101.563-24/03 – including *Taq* pol.** **101.563-24u/03u – without *Taq* pol.**
Lot number:	**5K4**
Expiry date:	**2023-11-01**
Number of tests:	**24 tests – Product No. 101.563-24/24u** **3 tests – Product No. 101.563-03/03u**
Number of wells per test:	**63+1**
Storage - pre-aliquoted primers:	**dark at -20ºC**
- PCR Master Mix:	**-20ºC**
- Adhesive PCR seals	**RT**
- Product Insert	**RT**

This Product Description is only valid for Lot No. 5K4.

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

CHANGES COMPARED TO THE PREVIOUS *OLERUP* SSP® HLA-B*44 LOT (3H9).

- The product documentation has been updated for new alleles of IMGT 3.37.0.
- The kit resolution focuses on common and well documented (CWD) alleles[1].

[1]As described in section Uniquely Identified Alleles.

The HLA-B*44 primer set, specificity and interpretation tables have been updated for the HLA-B alleles described since the previous *Olerup* SSP® HLA-B*44 lot was made **(Lot No. 3H9)**.

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

Well	5'-primer	3'-primer	rationale
60	-	Modified	3'-primer modified for improved HLA-specific amplification.

Change in revision R01 compared to R00:
1. Primer mix 43 amplifies the B*44:115 allele. This has been corrected in the Specificity and Interpretation Tables.

[1]S. 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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Lot No.: 5K4 **Lot-specific information**

Well **64** contains Negative Control primer pairs, that will amplify a 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'-primer[1]	**164**	**340**	**440**	**45**	**45**	**43**	**36**
	5'-CAC3'	5'-Agg3'	5'-TTA3'	5'-Tgg3'	5'-Tgg3'	5'-Tgg3'	5'-TAC3'
							36
							5'-TAT3'
3'-primer[2]	**231**	**2nd I**	**507**	**59**	**58**	**57**	**47**
	5'-TgC3'	5'-AAA3'	5'-TTg3'	5'-CTC3'	5'-ggC3'	5'-CTC3'	5'-ACA3'
							48
							5'-gCA3'
							48
							5'-gCC3'
							52
							5'-TgT3'
A*	+	+	+				
B*	+	+	+				
C*	+	+	+				
DRB1				+	+		
DRB3				+	+		
DRB5				+			
DQB1					+		
DPB1						+	
DQA1							+

[1]The 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 codonnumbering as on the www.ebi.ac.uk/imgt/hla web site. The sequence of the 3 terminal nucleotides of the primer is given.
[2]The 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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Lot No.: 5K4 **Lot-specific information**

PRODUCT DESCRIPTION

HLA-B*44 SSP subtyping

CONTENT

The primer set contains 5'- and 3'-primers for identifying the B*44:02 to B*44:476 alleles.

PLATE LAYOUT

Each test consists of 64 PCR reactions in a 64 well cut PCR plate.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	NC

The 64 well cut PCR plate is marked with 'HLA-B*44' in silver/gray ink.
Well No. 1 is marked with the Lot No.'5K4'.
Wells 1 to 63 – HLA-B*44 high resolution primers.
Well 64 – Negative Control (NC).
A faint row of numbers is seen between wells 1 and 2 or wells 7 and 8 of the PCR trays. These stem from the manufacture of the trays, and should be disregarded.
The PCR plates are covered with a PCR-compatible foil.

INTERPRETATION

Due to the sharing of sequence motifs between HLA-B alleles non-HLA-B*44 alleles will be amplified by some primer mixes. For further details see Specificity Table.

UNIQUELY IDENTIFIED ALLELES

All the HLA-B*44 alleles, i.e. **B*44:02 to B*44:476**, recognized by the HLA Nomenclature Committee in July 2019[1,2] will be amplified by the primers in the HLA-B*44 subtyping kit.

The HLA-B*44 kit enables separation of the confirmed HLA-B*44 alleles as listed in the IMGT/HLA database 3.29.0. An HLA allele is listed as confirmed by IMGT/HLA if it has been sequenced by more than a single laboratory or from multiple sources. Current allele confirmation status for HLA-B*44 alleles is listed below.

The HLA-B*44 kit also enables identification of many null and alternatively expressed alleles.

Lot No.: 5K4 **Lot-specific information**

The following HLA-B*44 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

Alleles	Primer mix	Alleles	Primer mix
B*44:21, 44:326	21	B*44:78, 44:136	48
B*44:58N, 44:139	47	B*44:79:01-44:79:02, 44:192	44
B*44:69:01, 44:85	26	B*44:94, 44:98	52
B*44:72, 44:93	47	B*44:118, 44:98	31
B*44:74, 44:169	18	B*44:160Q, 44:198N	56

[1]HLA-B alleles listed on the IMGT/HLA web page 2019-July-10, release 3.37.0, www.ebi.ac.uk/imgt/hla.
[2]Alleles 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.

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Lot No.: 5K4 **Lot-specific information**

ALLELE CONFIRMATION STATUS

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

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Lot No.: 5K4 **Lot-specific information**

Allele	Status[1]	Allele	Status[1]	Allele	Status[1]	Allele	Status[1]
B*44:87	**Confirmed**	**B*44:135**	**Confirmed**	B*44:185	Unconfirmed	B*44:233	Unconfirmed
B*44:88	**Confirmed**	B*44:136	Unconfirmed	B*44:186	Unconfirmed	B*44:234	Unconfirmed
B*44:89	Unconfirmed	**B*44:137**	**Confirmed**	B*44:187	Unconfirmed	B*44:235	Unconfirmed
B*44:90	Unconfirmed	B*44:138Q	Unconfirmed	**B*44:188**	**Confirmed**	B*44:236	Unconfirmed
B*44:91	**Confirmed**	**B*44:139**	**Confirmed**	B*44:189	Unconfirmed	B*44:237N	Unconfirmed
B*44:92	**Confirmed**	B*44:140	Unconfirmed	B*44:190	Unconfirmed	B*44:238	Unconfirmed
B*44:93	Unconfirmed	B*44:141	Unconfirmed	**B*44:191**	**Confirmed**	B*44:239	Unconfirmed
B*44:94	Unconfirmed	B*44:142	Unconfirmed	B*44:192:01	Unconfirmed	B*44:240	Unconfirmed
B*44:95	Unconfirmed	**B*44:143**	**Confirmed**	B*44:192:02	Unconfirmed	B*44:241	Unconfirmed
B*44:96	**Confirmed**	B*44:144	Unconfirmed	B*44:193	Unconfirmed	B*44:242	Unconfirmed
B*44:97	**Confirmed**	B*44:145	Unconfirmed	B*44:194	Unconfirmed	B*44:243	Unconfirmed
B*44:98	**Confirmed**	**B*44:146**	**Confirmed**	B*44:195N	Unconfirmed	B*44:244	Unconfirmed
B*44:99	Unconfirmed	B*44:147	Unconfirmed	B*44:196	Unconfirmed	B*44:245	Unconfirmed
B*44:100	Unconfirmed	**B*44:148**	**Confirmed**	B*44:197	Unconfirmed	B*44:247	Unconfirmed
B*44:101	Unconfirmed	B*44:149N	Unconfirmed	B*44:198N	Unconfirmed	B*44:248	Unconfirmed
B*44:102	Unconfirmed	B*44:150	Unconfirmed	B*44:199	Unconfirmed	B*44:249	Unconfirmed
B*44:103	Unconfirmed	B*44:151	Unconfirmed	B*44:200	Unconfirmed	**B*44:250**	**Confirmed**
B*44:104	**Confirmed**	B*44:152	Unconfirmed	B*44:201	Unconfirmed	B*44:251	Unconfirmed
B*44:105	Unconfirmed	B*44:153	Unconfirmed	B*44:202	Unconfirmed	B*44:252	Unconfirmed
B*44:106	**Confirmed**	B*44:154	Unconfirmed	B*44:203	Unconfirmed	**B*44:253**	**Confirmed**
B*44:107	**Confirmed**	B*44:155	Unconfirmed	B*44:204	Unconfirmed	B*44:254	Unconfirmed
B*44:108N	Unconfirmed	B*44:156	Unconfirmed	B*44:205:01	Unconfirmed	B*44:255	Unconfirmed
B*44:109	Unconfirmed	B*44:157	Unconfirmed	B*44:205:02	Unconfirmed	B*44:256	Unconfirmed
B*44:110	**Confirmed**	B*44:158	Unconfirmed	B*44:206	Unconfirmed	B*44:257	Unconfirmed
B*44:111	**Confirmed**	**B*44:159**	**Confirmed**	B*44:207	Unconfirmed	**B*44:258**	**Confirmed**
B*44:112	Unconfirmed	B*44:160Q	Unconfirmed	B*44:208	Unconfirmed	**B*44:259**	**Confirmed**
B*44:113	Unconfirmed	B*44:161	Unconfirmed	B*44:209	Unconfirmed	B*44:260	Unconfirmed
B*44:114	Unconfirmed	B*44:162	Unconfirmed	B*44:210	Unconfirmed	B*44:261	Unconfirmed
B*44:115	**Confirmed**	B*44:163	Unconfirmed	B*44:211	Unconfirmed	B*44:262	Unconfirmed
B*44:116	Unconfirmed	B*44:164	Unconfirmed	B*44:212	Unconfirmed	**B*44:263**	**Confirmed**
B*44:117	**Confirmed**	B*44:165	Unconfirmed	B*44:213	Unconfirmed	B*44:264	Unconfirmed
B*44:118	Unconfirmed	B*44:166	Unconfirmed	B*44:214	Unconfirmed	B*44:265	Unconfirmed
B*44:119	Unconfirmed	B*44:167	Unconfirmed	B*44:215	Unconfirmed	B*44:266	Unconfirmed
B*44:120	**Confirmed**	B*44:168	Unconfirmed	B*44:216	Unconfirmed	B*44:267N	Unconfirmed
B*44:121	Unconfirmed	B*44:169	Unconfirmed	B*44:217N	Unconfirmed	B*44:268	Unconfirmed
B*44:122	**Confirmed**	B*44:170	Unconfirmed	B*44:218	Unconfirmed	B*44:269	Unconfirmed
B*44:123	Unconfirmed	B*44:171N	Unconfirmed	B*44:219	Unconfirmed	B*44:270	Unconfirmed
B*44:124	Unconfirmed	B*44:172	Unconfirmed	B*44:220	Unconfirmed	**B*44:271**	**Confirmed**
B*44:125	Unconfirmed	**B*44:173**	**Confirmed**	**B*44:221**	**Confirmed**		
B*44:126:01	**Confirmed**	B*44:174	Unconfirmed	B*44:222	Unconfirmed		
B*44:126:02	Unconfirmed	B*44:175	Unconfirmed	B*44:223	Unconfirmed		
B*44:127	Unconfirmed	B*44:176	Unconfirmed	B*44:224	Unconfirmed		
B*44:128:01	Unconfirmed	**B*44:177**	**Confirmed**	B*44:225	Unconfirmed		
B*44:128:02	Unconfirmed	B*44:178	Unconfirmed	**B*44:226**	**Confirmed**		
B*44:129	Unconfirmed	B*44:179	Unconfirmed	**B*44:227**	**Confirmed**		
B*44:130	Unconfirmed	B*44:180	Unconfirmed	B*44:228	Unconfirmed		
B*44:131	Unconfirmed	B*44:181	Unconfirmed	B*44:229	Unconfirmed		
B*44:132	**Confirmed**	B*44:182	Unconfirmed	B*44:230	Unconfirmed		
B*44:133	Unconfirmed	B*44:183	Unconfirmed	B*44:231	Unconfirmed		
B*44:134	Unconfirmed	B*44:184	Unconfirmed	B*44:232	Unconfirmed		

[1]Allele status "confirmed" or "unconfirmed" as listed on the IMGT/HLA web page 2017-August-10, release 3.29.0, www.ebi.ac.uk/imgt/hla.

RESOLUTION IN HOMO- AND HETEROZYGOTES

Results file with resolution in HLA-B*44 homo- and heterozygotes is available upon request.

101.563-24/03 – including *Taq* pol., IFU-01
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Lot No.: 5K4 **Lot-specific information**

SPECIFICITY TABLE

HLA-B*44 SSP subtyping

Specificities and sizes of the PCR products of the 63+1 primer mixes used for HLA-B*44 SSP subtyping

Primer Mix	Size of spec. PCR product[1]	Size of control band[2]	Amplified HLA-B*44 alleles[3]	Other amplified HLA Class I alleles
1	260 bp	**800 bp**	*44:02:01:01-44:02:38, 44:02:40-44:02:57, 44:02:59-44:14, 44:17, 44:19N, 44:21-44:30, 44:32-44:36, 44:38-44:40, 44:43:01-44:46, 44:48-44:53:02, 44:55-44:63, 44:66-44:90, 44:92-44:98, 44:102-44:105, 44:107-44:131, 44:133-44:134, 44:136-44:137, 44:139-44:149N, 44:151-44:157, 44:159-44:165, 44:167-44:183, 44:185-44:189, 44:191-44:192:03, 44:194, 44:196, 44:198N-44:212, 44:214-44:229, 44:231-44:233, 44:235, 44:237N-44:245, 44:247-44:267N, 44:269-44:274, 44:277-44:289, 44:291-44:304, 44:306N-44:338, 44:340-44:346, 44:437-44:439, 44:441-44:458, 44:460-44:476	*07:359, 27:127, 35:45, 35:71, 35:169, 35:309, 35:452, 51:42, 53:22, 57:07, 57:93, 57:119, 83:01, **C*15:25**
2[4]	90 bp	**800 bp**	*44:02:01:01-44:02:09, 44:02:11-44:05:04, 44:09-44:33, 44:35-44:38, 44:41:01-44:43:02, 44:45-44:56N, 44:58N-44:59:02, 44:61N-44:80, 44:82, 44:84:01-44:110, 44:112-44:129, 44:131-44:133, 44:135-44:144, 44:146-44:155, 44:157-44:167, 44:169-44:193, 44:195N-44:199, 44:201-44:209, 44:211-44:220, 44:222-44:223, 44:226-44:244, 44:247-44:257, 44:259-44:268, 44:270:01-44:346, 44:437-44:444, 44:446-44:476	*13:129, 15:53, 15:212, 18:107, 35:63, 35:217, 35:317, 40:01:01-40:01:10, 40:01:12-40:06:20, 40:06:22-40:09, 40:11:01-40:11:02, 40:13-40:16, 40:18-40:20:01:02, 40:22N-40:40, 40:42-40:45, 40:47-40:57, 40:59-40:82, 40:84-40:92, 40:94-40:136, 40:138-40:148, 40:150-40:169, 40:171-40:176, 40:178-40:184, 40:186:01-40:208, 40:210-40:214, 40:216N-40:247, 40:249-40:264, 40:266-40:281, 40:283-40:293, 40:295-40:324, 40:326-40:350, 40:352-40:363, 40:366-40:372N, 40:374-40:377, 40:379-40:400, 40:402-40:429, 40:431-40:443, 41:01:01:01-41:11, 41:13-41:21, 41:23-41:35, 41:37-41:40, 41:42-41:57, 41:59-41:63, 45:01:01:01-45:21, 45:23-45:25, 47:01:01:02-47:10, 49:01:01:01-49:02, 49:04:01-49:14, 49:16-49:24, 49:28-49:41, 49:43-49:47, 49:49-49:64, 50:01:01:01-50:02, 50:04-50:06, 50:08-50:20, 50:31-50:64, 57:51, 57:69, **C*16:85**
3	225 bp	**800 bp**	*44:02:01:01-44:02:57, 44:02:59-44:02:63, 44:05:01-44:06, 44:08-44:09, 44:11-44:12, 44:14,	*08:49, 08:60, 08:76, 08:129, 08:181, 27:127, 35:38, 35:115, 35:169, 35:260, 37:01:01:01-37:01:07, 37:01:09,

			44:16-44:17, 44:19N, 44:21-44:25, 44:27:01:01-44:27:03, 44:33-44:34:02, 44:42, 44:44, 44:48-44:49, 44:51-44:53:02, 44:55, 44:58N-44:59:02, 44:62-44:63, 44:66-44:68, 44:70-44:75, 44:78, 44:80, 44:83-44:84:02, 44:86-44:91, 44:93, 44:95, 44:97, 44:101-44:102, 44:104, 44:112-44:113, 44:116-44:119, 44:121, 44:123, 44:126:01-44:127, 44:131-44:134, 44:136-44:137, 44:139-44:140, 44:142, 44:145, 44:148-44:149N, 44:151-44:152, 44:162, 44:168-44:173, 44:176-44:177, 44:179, 44:185, 44:187, 44:190-44:191, 44:195N-44:196, 44:200-44:201, 44:206, 44:208, 44:211-44:212, 44:214, 44:216-44:221, 44:225-44:226, 44:229, 44:235, 44:238, 44:240-44:244, 44:249, 44:253-44:255, 44:257, 44:260-44:265, 44:267N, 44:269-44:270:02, 44:273-44:274, 44:279, 44:287-44:289, 44:291-44:293, 44:296-44:297, 44:301, 44:303N, 44:306N, 44:308, 44:311-44:316, 44:320-44:322, 44:326-44:327, 44:329-44:331, 44:334N-44:335, 44:337-44:338, 44:341N-44:344, 44:437, 44:439, 44:441-44:442, 44:445-44:446, 44:448N-44:449N, 44:451-44:453, 44:455, 44:457, 44:461-44:465, 44:467-44:468, 44:470, 44:473	37:01:11-37:01:20, 37:03N-37:06:02, 37:08, 37:10-37:38, 37:41-37:43, 37:45-37:50, 37:52-37:65, 37:67-37:82N, 37:84-37:87, 37:89-37:90, 41:48, 42:13, 53:22, 57:09, 57:24, 57:119, 83:01, **C*15:25**
4	160 bp	1070 bp	*44:03:01:01-44:03:54, 44:07, 44:13, 44:26, 44:30, 44:32, 44:36-44:40, 44:46-44:47, 44:50:01-44:50:03, 44:54, 44:57, 44:60-44:61N, 44:64:01-44:65, 44:69:01-44:69:02, 44:79:01-44:79:02, 44:81, 44:85, 44:92, 44:94, 44:96, 44:98, 44:103, 44:105, 44:108N-44:111, 44:114-44:115, 44:120, 44:122, 44:124-44:125, 44:128:01-44:130, 44:141, 44:143, 44:147, 44:153-44:157, 44:159-44:161, 44:163:01-44:165, 44:167, 44:174-44:175, 44:178, 44:180-44:183, 44:186:01-44:186:02, 44:188-44:189, 44:192:01-44:194, 44:197-44:199, 44:202-44:205:02, 44:207, 44:209-44:210:02, 44:215, 44:222,	*07:359, 18:166, 40:414, 49:61, 51:42, 51:261, 52:26, 58:114, **A*23:31, C*03:433, C*07:231**

			44:224, 44:227-44:228, 44:231-44:234, 44:237N, 44:239, 44:245, 44:247-44:248, 44:252, 44:258-44:259, 44:266, 44:268, 44:271-44:272, 44:277-44:278, 44:280-44:281, 44:283-44:284, 44:286, 44:290, 44:294-44:295, 44:298, 44:300, 44:302, 44:304-44:305, 44:307, 44:309N-44:310N, 44:317-44:319, 44:323-44:325, 44:328N, 44:332-44:333N, 44:336, 44:345N-44:346, 44:438N, 44:440, 44:443-44:444, 44:447, 44:450, 44:454, 44:456, 44:458, 44:460, 44:466N, 44:469, 44:471-44:472, 44:474-44:476	
5[4]	75 bp 255 bp	1070 bp	*44:04, 44:28:01-44:28:02, 44:56N, 44:76 *44:70	*07:20, 07:140, 07:153, 35:45, **C*04:345, C*05:102, C*14:61**
6	170 bp 195 bp	1070 bp	*44:39 *44:05:01-44:05:04, 44:10, 44:15:01:01-44:15:01:02, 44:17-44:18, 44:25, 44:31, 44:43:01-44:43:02, 44:58N, 44:62, 44:70, 44:75, 44:77-44:78, 44:82, 44:107, 44:117, 44:123, 44:134, 44:136, 44:139-44:140, 44:144, 44:158, 44:184, 44:213, 44:226, 44:230, 44:236, 44:250-44:251, 44:256, 44:263-44:264, 44:288, 44:308, 44:330, 44:339-44:340, 44:465	*07:20, 07:140, 07:153, 15:14, 15:91, 15:131, 15:161, 15:518, 18:56, 18:169, 35:45, 35:71, 35:169, 35:309, 35:452, 38:158, 40:132, 40:178, 45:01:01:01-45:02, 45:05-45:07, 45:09, 45:11-45:23, 45:25, 46:17, 49:20, 50:02, 50:56, 51:23, 51:108, 52:15, 53:22, 57:07, 57:93, 57:119, 58:07, 82:01:01:01-82:03, **C*02:82, C*04:345, C*05:102, C*05:184, C*06:165, C*08:93, C*14:61, C*15:25**
7	155 bp	1070 bp	*44:06, 44:29, 44:89, 44:285	*18:67, 18:136, 37:34, 38:06-38:07, 49:03, 51:01:01:01-51:01:39, 51:01:41-51:24:05, 51:26-51:46, 51:48-51:53, 51:55-51:77, 51:79-51:103, 51:105-51:111, 51:113-51:146, 51:148-51:266, 51:268-51:283, 51:286-51:303, 52:01:01:01-52:01:28, 52:01:30-52:01:44, 52:03-52:15, 52:17-52:19, 52:21:01-52:31:02, 52:33-52:93, 53:01:01:01-53:01:17, 53:01:19-53:02, 53:04-53:08:02, 53:10, 53:14-53:29, 53:32-53:35, 53:37, 53:40-53:54, 53:56, 57:120, 58:01:01:01-58:02:02, 58:04-58:16:02, 58:18-58:29, 58:31N-58:35, 58:37-58:43, 58:45:01-58:63, 58:65-58:110, 58:112-58:115
8[4]	90 bp	1070 bp	*44:07-44:08, 44:57, 44:194, 44:445	*13:58, 13:98, 15:183, 15:345, 18:80, 18:102, 27:52, 27:67, 35:84, 35:90, 35:150:01-35:150:02, 35:184, 35:201, 35:441, 40:83, 40:170, 40:185, 40:209, 40:373, 41:41, 46:10, 49:42, 50:07, 51:103, 51:119, 52:83

Lot No.: 5K4 **Lot-specific information**

9[4]	120 bp 195 bp	1070 bp	*44:23N *44:10, 44:15:01:01-44:15:01:02, 44:18, 44:140, 44:339-44:340	*45:01:01:01-45:01:08, 45:05-45:07, 45:11-45:23, 45:25, 49:20, 50:02, 50:56, 82:01:01:01-82:03
10[4]	125 bp 150 bp 175 bp	**800 bp**	*44:24, 44:181 *44:92 *44:237N	*13:132, 41:55, **C*02:167, C*05:205**
11	150 bp	**800 bp**	*44:02:01:01-44:03:50, 44:03:52-44:05:04, 44:07, 44:10-44:39, 44:41:01-44:43:02, 44:45, 44:47-44:56N, 44:58N-44:59:02, 44:61N-44:74, 44:76-44:82, 44:84:01-44:89, 44:91-44:126:02, 44:128:01-44:128:02, 44:132-44:133, 44:135-44:155, 44:157-44:200, 44:202-44:209, 44:211-44:245, 44:247-44:253, 44:255-44:276, 44:278-44:344, 44:346, 44:437, 44:439-44:444, 44:446-44:457, 44:459-44:476	*37:06:01-37:06:02, 40:13, 40:19, 40:47, 40:96, 40:109-40:110, 40:117, 40:157, 40:188, 40:201, 40:292, 40:340, 40:394, 41:46, 41:60, 47:01:01:02-47:01:05, 47:03-47:10, 49:01:01:01-49:02, 49:04:01-49:14, 49:16-49:20, 49:22-49:25, 49:27-49:64, 51:112, 53:30, 53:39, 57:45, 57:51, 57:69, 58:111, **C*16:85**
12	145 bp	1070 bp	*44:09, 44:46, 44:75, 44:90, 44:129, 44:131, 44:254, 44:277, 44:438N	*07:133, 08:155, 15:46, 15:53, 15:106, 15:143, 15:212, 15:525, 18:48, 18:107, 35:19, 35:47, 35:63, 35:154, 35:217, 35:274, 35:317, 35:450, 39:69, 40:01:01-40:06:20, 40:06:22-40:11:02, 40:14:01-40:16, 40:18, 40:20:01:01-40:20:01:02, 40:22N-40:40, 40:42-40:45, 40:48-40:75, 40:77-40:92, 40:94-40:95, 40:97-40:108, 40:111-40:116, 40:118N-40:136, 40:138-40:156, 40:158-40:184, 40:186:01-40:187, 40:189-40:200, 40:202-40:207, 40:210-40:264, 40:266-40:291N, 40:293-40:307, 40:309-40:339, 40:341-40:349, 40:351-40:364, 40:366-40:393, 40:395-40:399N, 40:401-40:429, 40:431-40:443, 41:01:01:01-41:04, 41:06-41:25, 41:27-41:45N, 41:47-41:59, 41:61-41:63, 45:01:01:01-45:15, 45:17-45:21, 45:23-45:25, 47:02, 47:03[w], 48:41, 50:01:01:01-50:02, 50:04-50:05, 50:07-50:20, 50:31-50:64, 56:67
13[4]	90 bp	1070 bp	*44:13, 44:67	
14[4]	95 bp	**800 bp**	*44:12, 44:232, 44:263	*07:133[w], 08:155, 15:143, 18:48, 18:107, 35:19, 35:47, 35:154, 35:217, 35:274, 35:450, 39:69, 40:08, 40:25, 40:68, 40:106, 40:166[w], 40:232, 40:313, 49:63, 50:15, 51:112, 53:30, 53:39
15	170 bp	1070 bp	*44:14, 44:17, 44:51, 44:62, 44:123, 44:166, 44:213, 44:230	*07:04:01-07:04:02, 07:19, 07:25, 07:146, 07:349, 08:01:01:01-08:01:22, 08:01:24-08:05, 08:07-08:12:03, 08:15-08:19N, 08:21-08:24, 08:26:01-08:27, 08:29-08:39, 08:41-08:48, 08:50-08:54:02, 08:56:01-08:69, 08:71-08:73, 08:75-08:78, 08:80-08:86N, 08:88-08:110, 08:112-08:142, 08:144-08:155,

				08:157-08:170, 08:172-08:199, 08:201-08:204, 08:206-08:226, 08:228-08:244, 15:51, 15:83, 15:179:01-15:179:02, 15:199, 15:218Q, 15:518, 18:56, 18:113, 35:38, 35:87, 35:115, 35:169, 35:260, 37:09, 37:12, 37:35, 37:56, 37:77, 37:84, 38:30, 40:136, 40:231, 40:279, 41:01:01:01-41:09, 41:11-41:51, 41:53-41:61, 41:63, 42:01:01-42:02:01:02, 42:04-42:18, 42:21-42:27, 45:09, 45:14, 51:08:01:01-51:08:04, 51:20, 51:36, 51:44N, 51:97, 51:141, 51:153, 51:263, 51:275, 52:19, 53:22, 55:20, 55:56, 56:13, 57:09, 57:24, 57:119, 82:01:01:01-82:03, **C*07:626**
16	145 bp	**800 bp**	*44:18, 44:25, 44:50:01-44:50:03, 44:95	*40:13, 40:19, 40:109, 40:117, 40:292, 40:340, 40:394, 41:46, 41:60, 49:01:01:01-49:01:15, 49:04:01-49:14, 49:16-49:25, 49:27-49:64, 51:112, 53:30, 53:39, 57:45, 57:51, 57:69, 58:111
17	195 bp	1070 bp	*44:02:01:01-44:04, 44:06-44:09, 44:11-44:13, 44:19N-44:24, 44:26-44:30, 44:32-44:36, 44:38-44:41:02, 44:44, 44:46-44:50:03, 44:52N-44:57, 44:59:01-44:61N, 44:63, 44:65-44:69:02, 44:71-44:74, 44:76, 44:79:01-44:81, 44:83-44:87, 44:89-44:90, 44:92-44:100, 44:102-44:106, 44:108N-44:116, 44:118-44:122, 44:124-44:131, 44:137-44:138Q, 44:141-44:143, 44:145-44:149N, 44:151-44:157, 44:159-44:165, 44:167-44:183, 44:185-44:189, 44:191-44:194, 44:196-44:212, 44:214-44:216, 44:218-44:222, 44:224-44:225, 44:227-44:229, 44:231-44:233, 44:235, 44:237N-44:245, 44:247-44:249, 44:252-44:255, 44:257-44:262, 44:265-44:267N, 44:269-44:274, 44:277-44:281, 44:283-44:287, 44:289, 44:291-44:307, 44:309N-44:315, 44:317-44:329, 44:331-44:338, 44:341N-44:346, 44:437-44:458, 44:460-44:464:01:02, 44:466N-44:476	*07:359, 27:127, 51:42, 83:01
18[4]	115 bp 155 bp 260 bp	1070 bp	*44:31, 44:169, 44:182 *44:74 *44:19N, 44:82, 44:96, 44:153	*40:132, 40:178 *57:07, 57:93, 57:119
19	150 bp 190 bp	1070 bp	*44:11 *44:30	
20	130 bp	1070 bp	*44:22, 44:105	*40:342, 49:24
21[4]	100 bp	**800 bp**	*44:32, 44:326	*27:148

	180 bp		*44:16, 44:21, 44:64:01-44:64:02, 44:124, 44:150	* 07:28, 40:414, **C*02:97**
	250 bp		*44:86	*51:246, 52:56, 53:27
22	205 bp 290 bp	**800 bp**	*44:177, 44:228 *44:26	*13:81, 35:183, 51:209 *35:138, 47:07
23[8]	145 bp	**800 bp**	*44:02:01:01-44:10, 44:11?, 44:12-44:14, 44:16-44:17, 44:19N-44:21, 44:22?, 44:23N-44:24, 44:25?, 44:26, 44:28:01?-44:28:02?, 44:29-44:30, 44:32, 44:33?-44:36?, 44:37:01, 44:37:02?-44:38?, 44:39, 44:40?, 44:41:01, 44:41:02?-44:45?, 44:46, 44:47?-44:48?, 44:49-44:53:02, 44:54?, 44:55-44:57, 44:58N?, 44:59:01-44:59:02, 44:60?, 44:61N, 44:62?-44:64:01?, 44:64:02-44:66, 44:67?-44:76?, 44:77, 44:78?-44:80?, 44:81, 44:82?, 44:83, 44:84:01?-44:100?, 44:101, 44:102?-44:108N?, 44:109-44:110, 44:111?-44:112?, 44:113, 44:114?, 44:115, 44:116?, 44:117-44:118, 44:119?-44:126:01?, 44:126:02, 44:127?-44:128:01?, 44:128:02-44:130, 44:131?-44:136?, 44:137, 44:139?-44:145?, 44:146, 44:147?-44:149N?, 44:150-44:152, 44:153?-44:162?, 44:163:01-44:163:02, 44:164?-44:172?, 44:173, 44:174?-44:176?, 44:177, 44:178?-44:183?, 44:184, 44:185?-44:186:01?, 44:186:02-44:187, 44:188?-44:192:02?, 44:192:03, 44:193?-44:202?, 44:203:01, 44:203:02?-44:204:01?, 44:204:02, 44:205:01?-44:210:01?, 44:210:02-44:211, 44:212?-44:217N?, 44:218, 44:219?, 44:220-44:221, 44:222?-44:223?, 44:224-44:225, 44:226?-44:228?, 44:229-44:230, 44:231?-44:236?, 44:237N, 44:238?-44:239?, 44:240, 44:241?-44:242?, 44:243, 44:244?-44:245?, 44:247?-44:253?, 44:254-44:255, 44:256?-44:258?, 44:259-44:262, 44:267N, 44:269-44:270:02, 44:271?-44:276?, 44:277-44:296, 44:297?, 44:298-44:313, 44:314N?, 44:315-44:342, 44:344-44:346, 44:437-44:444, 44:446-44:447, 44:449N-44:453, 44:454?, 44:455-44:458,	*07:308, 07:359, 15:247, 27:47, 27:174, 51:42, 83:01

			44:459?, 44:460, 44:462, 44:464:01:01-44:476	
24	225 bp	1070 bp	*44:02:01:02S	
25[6,8]	145 bp	1070 bp	*44:11?, 44:15:01:01-44:15:01:02, 44:18, 44:22?, 44:25?, 44:27:01:01-44:27:03, 44:28:01?-44:28:02?, 44:30?, 44:31, 44:33?-44:34:01?, 44:35?-44:36?, 44:37:02?-44:38?, 44:40?, 44:41:02?-44:45?, 44:47?-44:48?, 44:50:01?, 44:54?-44:55?, 44:58N?, 44:60?, 44:62?-44:64:01?, 44:67?-44:69:01?, 44:70?-44:76?, 44:78?-44:80?, 44:82?, 44:84:01?-44:100?, 44:102?-44:108N?, 44:111?-44:112?, 44:114?, 44:116?, 44:119?-44:126:01?, 44:127?-44:128:01?, 44:131?-44:136?, 44:138Q, 44:139?-44:149N?, 44:153?-44:163:01?, 44:164?-44:172?, 44:174?-44:176?, 44:178?-44:183?, 44:185?-44:186:01?, 44:188?-44:192:01?, 44:193?-44:202?, 44:203:02?-44:204:01?, 44:205:01?-44:210:01?, 44:212?-44:217N?, 44:219?, 44:221?-44:223?, 44:226?-44:228?, 44:231?-44:236?, 44:238?-44:239?, 44:241?-44:242?, 44:244?-44:245?, 44:247?-44:254?, 44:256?-44:259?, 44:265, 44:314N?, 44:343, 44:445, 44:448N, 44:454?, 44:459?, 44:463	*07:02:01:01-07:57, 07:59-07:307, 07:309-07:358, 07:360Q-07:384, 08:01:01:01-08:05, 08:07-08:190, 08:192-08:245, 13:01:01:01-13:04, 13:06-13:23, 13:25-13:136, 14:01:01:01w-14:82w, 15:01:01:01-15:01:04, 15:01:06-15:19, 15:20w, 15:21:01:01-15:21:01:02, 15:23-15:40:02, 15:42-15:58, 15:60-15:99, 15:101, 15:103-15:129, 15:131-15:200, 15:202-15:227, 15:229-15:246N, 15:248-15:270, 15:272N-15:283, 15:285-15:304N, 15:306-15:434, 15:436-15:547, 18:01:01:01-18:15, 18:17N-18:185, 27:01-27:05:30, 27:05:32-27:21, 27:23-27:46, 27:48-27:67, 27:69-27:173, 27:175-27:190, 27:192-27:196, 27:198-27:210, 27:212N-27:215N, 35:01:01:01w-35:01:01:03w, 35:01:02w-35:01:45w, 35:02:01:01w, 35:02:02w-35:02:08w, 35:03:01:01w, 35:03:02w-35:03:21w, 35:04:01w-35:05:01:01w, 35:05:02w-35:08:01:01w, 35:08:02w-35:08:08w, 35:09:01w-35:12:01:01w, 35:12:02w-35:12:03w, 35:13w-35:14:02w, 35:15:01w-35:17:02w, 35:18w-35:22:01:01w, 35:23w-35:30w, 35:31, 35:32:01w-35:32:02w, 35:32:03, 35:33w-35:42:02w, 35:43:01, 35:43:03, 35:44w-35:45w, 35:46, 35:47w-35:56w, 35:57, 35:58w-35:59:02w, 35:60, 35:61:01w-35:72w, 35:74w-35:78w, 35:79, 35:80w-35:86w, 35:87, 35:88w-35:131:01w, 35:132w-35:151:01w, 35:152w-35:167w, 35:169w-35:173:01Nw, 35:174w-35:184w, 35:185, 35:186w-35:208:01w, 35:208:02, 35:209w-35:229w, 35:231w-35:278w, 35:279, 35:280w-35:329w, 35:359, 37:01:01:01-37:79N, 37:81-37:87, 37:89-37:90, 38:01:01:01w, 38:01:01:02-38:01:01:03Q, 38:01:02w-38:01:12w, 38:01:13-38:01:16, 38:02:01w-38:02:02:01w, 38:02:02:02, 38:02:03w-38:02:07w, 38:02:08-38:02:09, 38:03w-38:17w, 38:19w-38:20:01w, 38:20:02, 38:21w-38:68Qw, 38:69-38:86, 38:156-38:162, 39:01:01:01w-39:01:01:07w, 39:01:01:08-39:01:01:09, 39:01:03:01w-39:01:24w, 39:01:25-39:01:29, 39:02:01w-39:05:01:01w, 39:05:01:02,

				39:05:02^{w}, 39:05:03, 39:06:01^{w}-39:06:05^{w}, 39:06:06, 39:07^{w}-39:12:01:01^{w}, 39:12:01:02, 39:13:01^{w}-39:14:01:01^{w}, 39:14:01:02, 39:15^{w}-39:20^{w}, 39:22^{w}-39:31:01:01^{w}, 39:31:01:02, 39:32^{w}-39:128^{w}, 39:129-39:155, 40:01:01-40:01:60, 40:01:62-40:06:20, 40:06:22-40:16, 40:18-40:40, 40:42-40:417, 40:419-40:443, 41:01:01:01-41:63, 42:01:01-42:02:01:02, 42:04-42:27, 45:01:01:01-45:06, 45:07^{w}, 45:08-45:25, 46:01:01-46:79N, 47:01:01:02-47:10, 48:01:01:01-48:01:09, 48:02:01^{w}-48:02:03^{w}, 48:03:01-48:50, 49:01:01:01-49:14, 49:16-49:64, 50:01:01:01-50:02, 50:04-50:20, 50:31-50:36, 50:38-50:64, 51:01:01:01^{w}-51:01:01:02^{w}, 51:01:02^{w}-51:01:54^{w}, 51:01:56^{w}-51:01:57^{w}, 51:02:01:01^{w}, 51:02:02^{w}-51:02:05^{w}, 51:03^{w}-51:04:01^{w}, 51:05^{w}-51:06:02^{w}, 51:07:01^{w}-51:08:01:01^{w}, 51:08:02^{w}, 51:09:01^{w}-51:24:05^{w}, 51:26^{w}-51:41N^{w}, 51:43^{w}-51:46^{w}, 51:48^{w}-51:50^{w}, 51:52^{w}-51:106:01^{w}, 51:107^{w}-51:156^{w}, 51:157, 51:158:01^{w}-51:204:01^{w}, 51:205^{w}-51:213^{w}, 51:220, 51:237, 51:295, 51:300, 52:01:01:01^{w}-52:01:01:03^{w}, 52:01:02:01^{w}, 52:01:03^{w}-52:01:28^{w}, 52:02:01^{w}-52:06:03^{w}, 52:07, 52:08^{w}-52:09:01^{w}, 52:10:01^{w}-52:14:01^{w}, 52:15^{w}-52:21:01^{w}, 52:22^{w}-52:63^{w}, 53:01:01:01^{w}, 53:01:02^{w}-53:01:11^{w}, 53:02^{w}-53:05:01^{w}, 53:06^{w}-53:43:01^{w}, 53:44^{w}-53:45^{w}, 54:01:01-54:41, 55:01:01:01-55:01:02, 55:01:04-55:05, 55:07-55:106, 56:01:01:01-56:04:03, 56:05:01^{w}-56:05:02^{w}, 56:06-56:20:02, 56:21^{w}, 56:22-56:70, 57:01:01:01-57:100, 57:102-57:126, 58:01:01:01^{w}-58:01:01:02^{w}, 58:01:02^{w}-58:01:20^{w}, 58:01:22, 58:02:01^{w}-58:02:02^{w}, 58:04^{w}-58:10N^{w}, 58:11, 58:12^{w}-58:19^{w}, 58:20, 58:21^{w}-58:29^{w}, 58:31N^{w}-58:83^{w}, 58:106, 59:01:01:01-59:10N, 67:01:01^{w}-67:02:01:01^{w}, 67:02:01:02, 67:03^{w}-67:07^{w}, 78:01:01:01^{w}, 78:01:02^{w}-78:09^{w}, 81:01:01-81:01:03, 81:01:05-81:02, 81:03^{w}, 81:04N-81:08, 82:01:01:01-82:02:02, 82:03$^{?}$
26[4]	100 bp 145 bp 225 bp	**800 bp**	*44:69:01-44:69:02 *44:33, 44:81 *44:85	***38:51, A*24:370N** *51:226, 58:107, **A*24:137, A*32:96**
27	160 bp	**800 bp**	*44:02:10, 44:34:01	*15:32:02, 40:01:11, 40:58, 49:03, 52:01:02:01-52:01:02:03, 52:01:04, 52:01:09, 52:01:40, 52:01:43, 52:02:01,

Lot No.: 5K4 **Lot-specific information**

	255 bp		*44:15:01:01-44:15:01:02, 44:18, 44:20, 44:47, 44:100, 44:197, 44:339	52:03, 52:06:01-52:06:02, 52:09:01, 52:10:03, 52:21:01, 52:31:02, 52:85 *45:01:01:01-45:03, 45:05-45:07, 45:09, 45:11-45:23, 45:25, 49:20, 50:02, 50:56, 51:23, 51:108, 52:15
28[6]	130 bp 165 bp	1070 bp	*44:68 *44:35	
29[4,6]	90 bp	**800 bp**	*44:117, 44:251	*14:10, 15:460, 35:59:01, 35:242, 37:19:01, 38:20:01, 39:42, 39:106, **C*03:26:02, C*15:05:08, C*15:140, C*17:01:10**
	255 bp		*44:15:01:01-44:15:01:02, 44:55, 44:103, 44:188, 44:212	*13:23, 13:55, 18:09, 27:01, 27:142, 37:10, 40:47, 40:96, 40:157, 40:201, 49:02
30	195 bp	**800 bp**	*44:10, 44:15:01:01-44:15:01:02, 44:18, 44:140, 44:339-44:340	*45:01:01:01-45:01:08, 45:05-45:07, 45:11-45:23, 45:25, 49:20, 50:02, 50:56, 82:01:01:01-82:03
31[4]	110 bp 195 bp	1070 bp	*44:94 *44:17, 44:43:01-44:43:02, 44:144, 44:230, 44:256, 44:308	*15:14, 15:91, 15:131, 15:161, 15:518, 18:56, 18:169, 35:45, 35:71, 45:09, 46:17, 53:22, 57:93, 57:119, 58:07, **C*02:82, C*06:165, C*14:61**
	230 bp 260 bp		*44:98 *44:99	**A*02:432, A*30:29, A*30:122, A*31:61**
32	155 bp	1070 bp	*44:02:01:01-44:02:63, 44:05:01-44:06, 44:08-44:09, 44:11-44:12, 44:14-44:25, 44:27:01:01-44:27:03, 44:33-44:34:02, 44:41:01-44:42, 44:44, 44:48-44:49, 44:51-44:53:02, 44:55, 44:58N-44:59:02, 44:62-44:63, 44:66-44:68, 44:70-44:75, 44:78, 44:80, 44:83-44:84:02, 44:86-44:91, 44:93, 44:95, 44:97, 44:99-44:102, 44:104, 44:106, 44:112-44:113, 44:116-44:119, 44:121, 44:123, 44:126:01-44:127, 44:131-44:134, 44:136-44:140, 44:142, 44:145, 44:148-44:149N, 44:151-44:152, 44:158, 44:162, 44:166, 44:168-44:173, 44:176-44:177, 44:179, 44:185, 44:187, 44:190-44:191, 44:195N-44:196, 44:200-44:201, 44:206, 44:208, 44:211-44:214, 44:216-44:221, 44:225-44:226, 44:229-44:230, 44:235-44:236, 44:238, 44:240-44:244, 44:249, 44:253-44:255, 44:257, 44:260-44:265, 44:267N, 44:269-44:270:02, 44:273-44:274, 44:279, 44:287-44:289, 44:291-44:293, 44:296-44:297, 44:301, 44:303N, 44:306N, 44:308, 44:311-44:316, 44:320-44:322, 44:326-44:327, 44:329-44:331, 44:334N-44:335,	*07:04:01-07:04:02, 07:19, 07:25, 07:146, 07:349, 08:01:01:01-08:05, 08:07-08:12:03, 08:14-08:19N, 08:21-08:24, 08:26:01-08:39, 08:41-08:42, 08:44-08:54:02, 08:56:01-08:69, 08:71-08:78, 08:80-08:142, 08:144-08:155, 08:157-08:170, 08:172-08:204, 08:206-08:245, 13:46, 15:51, 15:83, 15:179:01-15:179:02, 15:199, 15:218Q, 15:518, 18:56, 18:113, 27:47, 27:127, 35:38, 35:87, 35:115, 35:169, 35:260, 37:01:01:01-37:01:20, 37:03N-37:06:02, 37:08-37:38, 37:41-37:65, 37:67-37:82N, 37:84-37:87, 37:89-37:90, 38:30, 40:136, 40:231, 40:279, 41:01:01:01-41:61, 41:63, 42:01:01-42:02:01:02, 42:04-42:18, 42:20-42:27, 45:01:01:01-45:25, 51:08:01:01-51:08:04, 51:20, 51:36, 51:44N, 51:97, 51:141, 51:153, 51:263, 51:274-51:275, 52:19, 53:22, 55:20, 55:56, 56:13, 57:09, 57:24, 57:119, 82:01:01:01-82:03, 83:01

			44:337-44:338, 44:341N-44:344, 44:437, 44:439, 44:441-44:442, 44:445-44:446, 44:448N-44:449N, 44:451-44:453, 44:455, 44:457, 44:461-44:465, 44:467-44:468, 44:470, 44:473	
33	165 bp 195 bp	**800 bp**	*44:80, 44:81 *44:16, 44:37:01-44:37:02, 44:64:01-44:64:02, 44:91, 44:132, 44:150, 44:190, 44:268, 44:275, 44:290	*57:126 *07:28, 08:87, 15:77, 15:233, 18:166, 40:414, 49:61, 51:261, 51:274, 52:26, 57:04:01-57:04:03, 58:114, **A*23:31, A*24:106, C*01:115, C*02:97, C*03:433, C*07:231, C*14:79, C*16:10**
34	160 bp	**800 bp**	*44:15:01:01-44:15:01:02, 44:18, 44:140, 44:226	*45:01:01:01-45:01:08, 45:04-45:08, 45:10-45:25, 55:56, 56:13, 82:01:01:01-82:03
35[4]	85 bp 185 bp	**800 bp**	*44:63 *44:04, 44:56N, 44:132, 44:137, 44:163:01-44:163:02, 44:190, 44:268, 44:446	*08:87, 18:166, **C*01:115, C*07:231, C*14:79, C*16:10**
36[5]	145 bp

				82:01:01:01-82:03, **C*05:62, C*05:146, C*05:163, C*07:68, C*07:140, C*07:151, C*07:199:01-07:199:02, C*07:364, C*08:142**
39[4,6,7]	75 bp	**800 bp**	*44:16, 44:42, 44:91, 44:132, 44:166, 44:190	*07:04:01-07:04:02, 07:19, 07:25, 07:146, 07:349, 08:01:01:01-08:01:26, 08:01:28-08:05, 08:07-08:12:03, 08:14-08:19N, 08:21-08:24, 08:26:01-08:39, 08:41-08:42, 08:44-08:54:02, 08:56:01-08:69, 08:71-08:78, 08:80-08:85, 08:87-08:134, 08:136-08:142, 08:144-08:151, 08:153-08:155, 08:157-08:170, 08:172-08:204, 08:206-08:245, 13:46, 15:51, 15:83, 15:179:01-15:179:02, 15:199, 15:218Q, 18:113, 35:38, 35:87, 35:115, 35:260, 37:01:01:01-37:01:20, 37:03N-37:06:02, 37:08-37:31, 37:33N-37:38, 37:41-37:52, 37:54-37:65, 37:67-37:82N, 37:84-37:87, 37:89-37:90, 38:30, 40:136, 40:231, 40:279, 41:01:01:01-41:61, 41:63, 42:01:01-42:02:01:02, 42:04-42:18, 42:20-42:27, 45:04, 45:08, 45:10, 51:08:01:01-51:08:04, 51:20, 51:36, 51:44N, 51:97, 51:141, 51:153, 51:263, 51:274-51:275, 52:19, 55:20, 55:56, 56:13, 57:09, 57:24, **C*05:62, C*05:146, C*05:163, C*07:04:01:01-07:04:19, C*07:11-07:12, C*07:45, C*07:63, C*07:68, C*07:101, C*07:139-07:140, C*07:142, C*07:151, C*07:181, C*07:199:01-07:199:02, C*07:272, C*07:302, C*07:323-07:324, C*07:328-07:329N, C*07:336, C*07:338, C*07:354-07:355, C*07:357, C*07:361, C*07:364-07:365, C*07:378, C*07:394-07:395, C*07:403, C*07:406, C*07:420, C*07:426, C*07:428, C*07:459, C*07:466-07:467, C*07:480, C*07:487, C*07:501, C*07:534-07:535, C*07:562-07:563, C*07:569, C*07:585-07:586, C*07:600:01N-07:600:02N, C*07:622, C*07:626, C*07:651, C*07:655-07:656, C*07:664, C*07:672N, C*07:674, C*07:693, C*07:698, C*07:742, C*07:751N, C*07:780, C*07:797N, C*08:142**
40	235 bp	1070 bp	*44:10, 44:15:01:01-44:15:01:02, 44:18, 44:48, 44:256, 44:339-44:340	*35:45, 35:71, 35:169, 35:309, 35:452, 45:01:01:01-45:03, 45:05-45:07, 45:09, 45:11-45:23, 45:25, 49:20, 50:02, 50:56, 53:22, 58:07, 82:01:01:01-82:03, **C*02:82, C*04:345, C*05:102, C*05:184, C*06:165, C*08:93, C*14:61, C*15:25**
	260 bp		*44:31, 44:41:01-44:41:02, 44:54, 44:65, 44:106, 44:135, 44:158,	*07:20, 07:140, 07:153, 15:14, 15:91, 15:131, 15:161, 15:518, 18:56, 18:169,

			44:184, 44:213, 44:230, 44:236, 44:440	27:47, 27:50:01-27:50:02, 38:158, 40:132, 40:178, 46:17, 58:07, 82:01:01:01-82:03, **C*02:82, C*04:345, C*05:102, C*05:184, C*06:165, C*08:93, C*14:61**
41	255 bp	1070 bp	*44:49, 44:156	*08:02, 08:117, 13:93, 38:84
42[6]	165 bp	1070 bp	*44:14, 44:62, 44:166, 44:213	*07:349, 08:01:01:01-08:01:22, 08:01:24-08:05, 08:08N-08:12:03, 08:15-08:19N, 08:21-08:24, 08:26:01-08:27, 08:29-08:36, 08:38:01-08:39, 08:41-08:48, 08:50-08:54:02, 08:56:01-08:69, 08:71-08:73, 08:75-08:76, 08:78, 08:80-08:86N, 08:88, 08:90-08:106, 08:109-08:110, 08:112-08:142, 08:144-08:155, 08:157-08:163, 08:165-08:170, 08:172-08:199, 08:201-08:204, 08:206-08:226, 08:228-08:244, 15:83, 35:87, 37:12, 37:84, 38:30, 40:136, 40:231, 40:279, 41:01:01:01-41:03:02, 41:05-41:09, 41:11-41:17, 41:19-41:20, 41:22-41:48, 41:50, 41:53-41:61, 42:01:01-42:02:01:02, 42:04-42:08, 42:10-42:15, 42:17-42:18, 42:21-42:27, 45:14, 51:08:01:01-51:08:03, 51:20, 51:36, 51:44N, 51:97, 51:141, 51:153, 51:263, 51:275, 52:19, 55:20, 55:56, 56:13, 57:09, 82:01:01:01-82:03
43[4]	110 bp 165 bp	**800 bp**	*44:52N, 44:115 *44:29, 44:89, 44:285	
44[4]	85 bp 160 bp	**800 bp**	*44:53:01-44:53:02, 44:182, 44:192:01-44:192:03, 44:343 *44:73, 44:76, 44:79:01-44:79:02, 44:146, 44:150, 44:275, 44:299	*07:28, 08:87, 40:414, **C*01:115, C*02:97, C*03:433, C*07:231, C*14:79, C*16:10** *07:28, 15:77, 15:233, 49:61, 51:261, 52:26, **C*01:115, C*02:97, C*03:433, C*14:79**
45[6]	220 bp 250 bp 285 bp	**800 bp**	*44:36 *44:54, 44:106, 44:135, 44:158, 44:184, 44:213 *44:173	 *07:20, 07:140, 07:153
46[6]	175 bp 450 bp	1070 bp	*44:66, 44:267N *44:56N	*27:208, 51:11N *40:337N
47[4]	65 bp 115 bp 140 bp 195 bp	1070 bp	*44:93, 44:139 *44:72, 44:204:01-44:204:02 *44:191 *44:58N	 *40:392
48[4]	105 bp 140 bp 175 bp 260 bp 595 bp	1070 bp	*44:61N *44:59:01-44:59:02, 44:136, 44:191 *44:237N *44:78, 44:120, 44:195N *44:59:01-44:59:02, 44:136	 *35:223, 40:392 *15:454N, 35:204, **C*03:147**
49[4]	85 bp	**800 bp**	*44:108N, 44:267N	*18:23N, 51:11N

Lot No.: 5K4 **Lot-specific information**

50[4]	95 bp 160 bp 195 bp 285 bp	1070 bp	*44:111, 44:200 *44:171N *44:137, 44:227 *44:148	*58:76, **C*03:251, C*03:314, C*05:10, C*05:148, C*08:44, C*08:61, C*08:82, C*08:126, C*15:130**
51[4]	110 bp 200 bp 240 bp	1070 bp	*44:115 *44:217N *44:259	
52[6]	130 bp 250 bp 285 bp 405 bp	1070 bp	*44:143, 44:261 *44:86 *44:173 *44:118	 *51:246, 52:56, 53:27 *39:46
53	210 bp 240 bp	1070 bp	*44:122, 44:451 *44:259	
54	175 bp 270 bp	1070 bp	*44:253 *44:126:01-44:126:02, 44:159, 44:195N	*35:377, **C*03:337** *15:394, 15:454N, 35:247, 58:45:01-58:45:02, **C*03:96, C*15:52:01-15:52:02**
55[6]	255 bp	1070 bp	*44:110, 44:138Q, 44:149N, 44:211	
56[4]	110 bp 250 bp 280 bp	1070 bp	*44:198N *44:160Q *44:104, 44:148	**C*03:265N** ***35:333Q, 37:16Q, **C*15:96Q** *58:76, **C*03:251, C*03:314, C*05:10, C*05:148, C*08:44, C*08:61, C*08:82, C*08:126, C*15:130**
57	185 bp	**800 bp**	*44:60, 44:83-44:84:01, 44:194, 44:205:01-44:205:02, 44:225, 44:269	*07:149, 13:01:01:01-13:04, 13:06-13:08, 13:10-13:12:01, 13:13:01-13:23, 13:25-13:29, 13:31-13:38, 13:40-13:66, 13:68-13:100, 13:102-13:136, 15:36, 15:89:01-15:89:02, 15:256, 15:339, 15:505, 18:09, 37:10, 51:54, 51:78:01-51:78:02, 52:20, 53:09, 53:11-53:13, 53:31, 53:36, 53:38
58[4,6]	100 bp 210 bp 245 bp	1070 bp	*44:187 *44:87-44:88, 44:223 *44:271	
59	185 bp	1070 bp	*44:84:02, 44:156	*08:02, 08:117, 15:115, 38:02:01-38:02:06, 38:02:08-38:04, 38:08, 38:15, 38:18, 38:23, 38:29, 38:35, 38:43-38:50, 38:62, 38:64, 38:72, 38:74-38:76, 38:79, 38:82, 38:84-38:85, 38:160, 38:162, 56:07, 59:08
60	130 bp	**800 bp**	*44:90, 44:97	*07:300, 40:166, 45:06, **C*07:69, C*08:68**
61	210 bp

Lot No.: 5K4 **Lot-specific information**

62[4]	115 bp 175 bp 300 bp	1070 bp	*44:38 *44:253 *44:71	*13:80, 35:326, **C*15:147** *35:377**, C*03:337** **C*15:141**
63	210 bp	1070 bp	*44:03:01:01-44:03:01:20, 44:03:03-44:03:12, 44:03:14-44:03:18, 44:03:20-44:03:25, 44:03:32-44:03:39, 44:03:42-44:03:43, 44:03:45-44:03:46, 44:03:48, 44:03:50-44:03:51, 44:03:53, 44:13, 44:26, 44:29-44:30, 44:32, 44:36-44:37:01, 44:38-44:40, 44:43:01, 44:45-44:46, 44:50:01-44:50:02, 44:57, 44:60-44:61N, 44:64:02, 44:69:01, 44:77, 44:79:01-44:79:02, 44:81-44:82, 44:85, 44:92, 44:94, 44:96, 44:98, 44:103, 44:105, 44:107-44:111, 44:114-44:115, 44:120, 44:122, 44:125, 44:128:02-44:130, 44:141, 44:144, 44:147, 44:154-44:157, 44:159-44:161, 44:163:01, 44:164-44:165, 44:167, 44:174, 44:178, 44:180, 44:182-44:183, 44:186:01, 44:188-44:189, 44:192:01, 44:193, 44:198N, 44:202-44:203:01, 44:204:02-44:205:01, 44:207, 44:210:01-44:210:02, 44:215, 44:222-44:224, 44:228, 44:231-44:234, 44:237N, 44:239, 44:245, 44:250-44:252, 44:258-44:259, 44:271-44:272, 44:277-44:278, 44:280-44:281, 44:283-44:286, 44:290, 44:298, 44:300, 44:302, 44:304, 44:307, 44:309N-44:310N, 44:317-44:319, 44:323, 44:325, 44:328N, 44:332, 44:336, 44:340, 44:345N-44:346, 44:438N, 44:443, 44:450, 44:456, 44:458, 44:460, 44:466N, 44:471-44:472, 44:474, 44:476	*07:359, 13:21, 14:10, 15:02:05, 15:25:02, 15:80, 15:460, 18:22, 18:69, 18:149, 27:19, 27:30, 35:01:04, 35:12:01:01-35:12:01:02, 35:12:03-35:12:04, 35:16-35:17:03, 35:30, 35:39, 35:59:01, 35:113, 35:125, 35:149, 35:201, 35:233, 35:242, 35:266, 35:318, 35:425, 38:20:01, 39:42, 39:106, 40:64:02, 40:99, 40:160:01, 49:61, 51:04:02, 51:42, 51:56:01, 51:227, 51:281, 52:88, 53:17:01, 56:12, 58:01:20, 58:59:02, 58:114, **C*03:03:04, C*03:04:02, C*03:04:06, C*03:04:18, C*03:04:31, C*03:04:33, C*03:04:46, C*03:07:02, C*03:26:02, C*03:38:01, C*03:40:04, C*03:115:02, C*03:125, C*03:143, C*03:263:01, C*03:323N, C*03:346, C*03:362, C*03:368, C*03:410, C*03:424N, C*03:426, C*03:437, C*03:442Q, C*03:480, C*03:483, C*07:43:02, C*07:184, C*15:05:08, C*15:140, C*17:01:10**
64[9]			**Negative Control**	

[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-B*44 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.

Lot No.: 5K4 **Lot-specific information**

Some primers may give rise to primer oligomer artifacts. Sometimes this phenomenon is an inherit 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 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.

[3]For 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.

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

[5]Primer mix 36 has a tendency giving rise to primer oligomer formation.

[6]Primer mixes 25, 28, 29, 37, 39, 42, 45, 46, 52, 55 and 58 may have tendencies of unspecific amplifications.

[7]Primer mix 39 may give rise to a lower yield of HLA-specific PCR product than the other B*44 primer mixes.

[8]We assume that the fourth exon nucleotide sequences are conserved within allelic groups. Primer mix 25 amplifies the B*44:27 and B*44:31 alleles. The purpose of primer mixes 23 and 25 is to distinguish e.g. the B*44:02,44:02 and B*44:02,44:27 genotypes.

[9]Primer mix 64 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
?: nucleotide sequence information not available for the primer matching sequence.
w: might be weakly amplified.

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101.563-24u/03u – without *Taq* pol., IFU-02

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Lot No.: 5K4 **Lot-specific information**

PRIMER SPECIFICATION

Well No.	1	2	3	4	5	6	7	8	9	10	11	12
Length of spec.	260	90	225	160	75	170	155	90	120	125	150	145
PCR product					255	195			195	150		
										175		
Length of int.	800	800	800	1070	1070	1070	1070	1070	1070	800	800	1070
pos. control[1]												
5'-primer(s)[2]	355	142	355	418	359	142	206	142	420	142	206	206
	5'-TCA 3'	5'-TCA 3'	5'-TCA 3'	5'-Agg 3'	5'-CCg 3'	5'-TCC 3'	5'-gAC 3'	5'-TCA 3'	5'-TTA 3'	5'-TCA 3'	5'-gAA 3'	5'-gAA 3'
	355		355		539	418	418		493	418	206	
	5'-TTA 3'		5'-TTA 3'		5'-gCg 3'	5'-AgT 3'	5'-Agg 3'		5'-CTT 3'	5'-Agg 3'	5'-gAA 3'	
						418					206	
						5'-AgT 3'					5'-AAA 3'	
3'-primer(s)[3]	572	193	538	539	572	272	309	193	572	226	317	311
	5'-gCg 3'	5'-CgT 3'	5'-gTC 3'	5'-TCA 3'	5'-gCg 3'	5'-Tgg 3'	5'-ATC 3'	5'-CgC 3'	5'-gCg 3'	5'-CAC 3'	5'-ggA 3'	5'-ggT 3'
	572	193		539		572	544	193		278		
	5'-gTg 3'	5'-TgT 3'		5'-TCA 3'		5'-gCg 3'	5'-ggT 3'	5'-CgC 3'		5'-Tgg 3'		
				539						526		
				5'-TgA 3'						5'-CAT 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.	90	95	170	145	195	115	150	130	100	205	145	225
PCR product						155	190		180	290		
						260			250			
Length of int.	1070	800	1070	800	1070	1070	1070	1070	800	800	800	1070
pos. control[1]												
5'-primer(s)[2]	206	206	409	206	418	6	206	106	107	49	668	4th I
	5'-gAA 3'	5'-gAA 3'	5'-ggC 3'	5'-gAA 3'	5'-Agg 3'	5'-C.g 3'	5'-gAA 3'	5'-CCg 3'	5'-CAC 3'	5'-CAg 3'	5'-ggT 3'	5'-CCg 3'
						355	418		257			
						5'-CCA 3'	5'-Agg 3'		5'-CCC 3'			
						361			418			
						5'-Agg 3'			5'-Agg 3'			
						460						
						5'-ACg 3'						
						499						
						5'-TCT 3'						
3'-primer(s)[3]	255	259	538	309	572	106	313	193	317	85	774	896
	5'-CgC 3'	5'-gTT 3'	5'-gTC 3'	5'-ATC 3'	5'-gTg 3'	5'-CAT 3'	5'-Cgg 3'	5'-CgT 3'	5'-ggA 3'	5'-CAC 3'	5'-ggT 3'	5'-TCA 3'
				309	572	572	566		559	171		
				5'-ATg 3'	5'-gCg 3'	5'-gCg 3'	5'-CCg 3'		5'-CTC 3'	5'-ACC 3'		
					576							
					5'-CgC 3'							
Well No.	13	14	15	16	17	18	19	20	21	22	23	24

101.563-24/03 – including *Taq* pol., IFU-01
101.563-24u/03u – without *Taq* pol., IFU-02

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Lot No.: 5K4 **Lot-specific information**

Well No.	25	26	27	28	29	30	31	32	33	34	35	36
Length of spec.	145	100	160	130	90	195	110	155	165	160	85	145
PCR product		145	255	165	255		195		195		185	235
		225					230					
							260					
Length of int.	1070	800	800	1070	800	800	1070	1070	800	800	800	800
pos. control[1]												
5'-primer(s)[2]	668	134	141	418	97	420	353	540	185	420	142	206
	5' -ggC 3'	5' -CCA 3'	5' -ATT 3'	5' -Agg 3'	5' -TCC 3'	5' -TTA 3'	5' -gTA 3'	5' -gAC 3'	5' -CAA 3'	5' -TTA 3'	5' -TCA 3'	5' -AgA 3'
		207	357		369		385		207	420	418	355
		5' -AAT 3'	5' -Tgg 3'		5' -TAC 3'		5' -ggT 3'		5' -AAT 3'	5' -TTA 3'	5' -Agg 3'	5' -TCA 3'
		256					419		418			
		5' -ACT 3'					5' -gTC 3'		5' -Agg 3'			
		445					504					
		5' -TCA 3'					5' -CAC 3'					
3'-primer(s)[3]	774	317	259	506	309	572	572	3rd I	317	538	186	309
	5' -ggT 3'	5' -ggA 3'	5' -CTC 3'	5' -Tgg 3'	5' -gTg 3'	5' -gCg 3'	5' -gCg 3'	5' -TAT 3'	5' -ggA 3'	5' -gTC 3'	5' -TCC 3'	5' -gTg 3'
		538	572	540	419				572		287	548
		5' -gTC 3'	5' -gCg 3'	5' -CTT 3'	5' -CgA 3'				5' -gCC 3'		5' -TCA 3'	5' -ggC 3'
											559	
											5' -CgT 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.	205	225	75	235	255	165	110	85	220	175	65	105
PCR product				260			165	160	250	450	115	140
									285		140	175
											195	260
												595
Length of int.	1070	800	800	1070	1070	1070	800	800	800	1070	1070	1070
pos. control[1]												
5'-primer(s)[2]	409	355	540	355	97	412	418	418	74	206	142	142
	5' -ggC 3'	5' -CCC 3'	5' -gAC 3'	5' -CCC 3'	5' -TCg 3'	5' -ATA 3'	5' -Agg 3'	5' -Agg 3'	5' -C 3'	5' -gAA 3'	5' -TCA 3'	5' -TCA 3'
				379					364	629		355
				5' -ACC 3'					5' -gCA 3'	5' -AAA 3'		5' -TCA 3'
									395	649		
									5' -gCT 3'	5' -ACA 3'		
3'-primer(s)[3]	572	538	572	572	309	538	489	463	317	369	164	208
	5' -gCg 3'	5' -gTC 3'	5' -gCC 3'	5' -gCg 3'	5' -gTg 3'	5' -gTC 3'	5' -gCg 3'	5' -gCg 3'	5' -ggA 3'	5' -CCT 3'	5' -gCT 3'	5' -CTA 3'
							544	527	572	774	218	242
							5' -ggT 3'	5' -CCT 3'	5' -gCg 3'	5' -ggT 3'	5' -gCT 3'	5' -CCC 3'
								538			242	278
								5' -CCA 3'			5' -CCC 3'	5' -Tgg 3'
								545			295	453
								5' -AgC 3'			5' -TCA 3'	5' -TCT 3'
												453
												5' -TCC 3'
												572
												5' -gCT 3'
												578
												5' -TgA 3'
Well No.	37	38	39	40	41	42	43	44	45	46	47	48

101.563-24/03 – including *Taq* pol., IFU-01
101.563-24u/03u – without *Taq* pol., IFU-02

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Lot No.: 5K4 **Lot-specific information**

Well No.	49	50	51	52	53	54	55	56	57	58	59	60
Length of spec.	85	95	110	130	210	175	255	110	185	100	185	130
PCR product		160	200	250	240	270		250		210		
		195	240	285				280		245		
		285		405								
Length of int.	800	1070	1070	1070	1070	1070	1070	1070	800	1070	1070	800
pos. control[1]												
5'-primer(s)[2]	610	142	371	74	371	355	355	355	165	370	167	193
	5'-TgT 3'	5'-TCA 3'	5'-CgA 3'	5'-C 3'	5'-CgA 3'	5'-TCA 3'	5'-TCC 3'	5'-TCA 3'	5'-ACC 3'	5'-ACT 3'	5'-gCA 3'	5'-CCA 3'
	629	355	415	107	404		358			400		
	5'-AAA 3'	5'-TCA 3'	5'-ACT 3'	5'-CAC 3'	5'-CCA 3'		5'-TCT 3'			5'-TCA 3'		
			503	228			363			410		
			5'-CCC 3'	5'-ATg 3'			5'-AgC 3'			5'-gTg 3'		
				646						668		
				5'-ACg 3'						5'-ggT 3'		
3'-primer(s)[3]	3rd I	197	572	317	572	491	572	426	311	572	311	282
	5'-TAT 3'	5'-gAT 3'	5'-gCg 3'	5'-ggA 3'	5'-gCg 3'	5'-gAA 3'	5'-gCg 3'	5'-TCC 3'	5'-Cgg 3'	5'-gCg 3'	5'-Cgg 3'	5'-gCC 3'
	774	259		916		572		563		728		
	5'-ggT 3'	5'-CTA 3'		5'-gAC 3'		5'-gCT 3'		5'-CgT 3'		5'-CCT 3'		
		287				595		592				
		5'-TCA 3'				5'-CCg 3'		5'-gTC 3'				
		307				595		601				
		5'-gCA 3'				5'-CCT 3'		5'-CTT 3'				
		601										
		5'-CTT 3'										
Well No.	49	50	51	52	53	54	55	56	57	58	59	60

Well No.	61	62	63
Length of spec.	210	115	210
PCR product	255	175	
		300	
Length of int.	1070	1070	1070
pos. control[1]			
5'-primer(s)[2]	97	355	369
	5'-TCC 3'	5'-TCA 3'	5'-TAC 3'
	142		
	5'-TCT 3'		
3'-primer(s)[3]	309	430	538
	5'-gTg 3'	5'-gCT 3'	5'-CAg 3'
		491	
		5'-gAA 3'	
		613	
		5'-gCA 3'	
Well No.	61	62	63

[1]The 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.

[2]The 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.

Lot No.: 5K4 **Lot-specific information**

[3]The 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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Lot No.: 5K4 **Lot-specific information**

CELL LINE VALIDATION SHEET

HLA-B*44 SSP subtyping kit[2]

					Well[3]															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				Prod. No.:	201666201	201666202	201666203	201902204	201666205	201666206	201666207	201666208	201787109	201666210	201787111	201666212	201666213	201666214	201666215	201666216
	IHWC cell line[1]		B*																	
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
5	9009	KAS011	*37:01		-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		+	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9025	JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*40:01		-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-
16	9037	SWEIG007	*40:02		-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*40:01		-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-
21	9064	AMALA	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	+	+	+	+	-	-	-	-	-	-	+	-	-	-	-	-
29	9050	MOU	*44:03		+	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*41:02		-	+	-	-	-	-	-	-	-	-	-	+	-	-	+	-
33	9098	MT14B	*40:01		-	+	-	-	-	-	-	-	-	-	-	+	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		+	+	+	-	-	-	-	-	-	-	+	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	+	-	-	-	-	-	-	-	-	-	+	-	-	+	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	+	+	-	+	-	-	-	-	-	-	+	-	-	-	-	-

101.563-24/03 – including *Taq* pol., IFU-01
101.563-24u/03u – without *Taq* pol., IFU-02

Visit https://labproducts.caredx.com for **"Instructions for Use" (IFU)**

Lot No.: 5K4 **Lot-specific information**

CELL LINE VALIDATION SHEET

HLA-B*44 SSP subtyping kit[2]

					Well[3]															
					17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
				Prod. No.:	201666217	201666218	201666219	201666220	201902221	201666222	201666223	201666224	201666225	201787126	201666227	201666228	201666229	201787130	201902231	201666232
	IHWC cell line[1]		B*																	
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
6	9353	SM	*39:01	*51:01	-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
13	9025	JESTHOM	*27:05		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
15	9075	DKB	*40:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
20	9059	SLE005	*40:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+
29	9050	MOU	*44:03		+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
32	9297	HAG	*41:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
33	9098	MT14B	*40:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		+	-	-	-	-	-	+	-	-	-	-	-	-	-	-	+
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	+
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	f	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	+	-	-	-	-	-	+	-	f	-	-	-	-	-	-	-

101.563-24/03 – including *Taq* pol., IFU-01
101.563-24u/03u – without *Taq* pol., IFU-02

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Lot No.: 5K4 **Lot-specific information**

CELL LINE VALIDATION SHEET

HLA-B*44 SSP subtyping kit[2]

					Well[3]															
					33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
				Prod. No.:	201787133	201787134	201666235	201666236	201666237	201666238	201902239	201666240	201666241	201902242	201666243	201666244	201902245	201787146	201666247	201666248
	IHWC cell line[1]		B*																	
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	9009	KAS011	*37:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9025	JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	+	+	-	-	+	-	-	-	-	-	-
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	9050	MOU	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9021	RSH	*42:01		-	-	-	-	-	+	+	-	-	+	-	-	-	-	-	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*41:02		-	-	-	-	-	+	+	-	-	+	-	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	+	+	-	-	+	-	-	-	-	-	-
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	-	-	+	+	-	-	+	-	-	-	-	-	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

101.563-24/03 – including *Taq* pol., IFU-01
101.563-24u/03u – without *Taq* pol., IFU-02

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Lot No.: 5K4 **Lot-specific information**

CELL LINE VALIDATION SHEET

HLA-B*44 SSP subtyping kit[2]

					Well[3]														
					49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
				Prod. No.:	201787149	201666250	201787151	201902252	201787153	201787154	201666255	201666256	201902257	201902258	201666259	201912860	201666261	201902262	201787163
	IHWC cell line[1]		B*																
1	9001	SA	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	9280	LK707	*52:01	*73:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	9011	E4181324	*52:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	9275	GU373	*15:10	*53:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
5	9009	KAS011	*37:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	9353	SM	*39:01	*51:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	9020	QBL	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	9025	DEU	*35:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	9026	YAR	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	9107	LKT3	*54:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	9051	PITOUT	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
12	9052	DBB	*57:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	9025	JESTHOM	*27:05		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	9071	OLGA	*15:01	*15:20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	9075	DKB	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	9037	SWEIG007	*40:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	9282	CTM3953540	*08:01	*55:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	9257	32367	*14:01	*56:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	9038	BM16	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	9059	SLE005	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	9064	AMALA	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	9056	KOSE	*35:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	9124	IHL	*40:02	*56:02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	9035	JBUSH	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	9049	IBW9	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	9285	WT49	*58:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	9191	CH1007	*07:05	*51:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	9320	BEL5GB	*44:02	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
29	9050	MOU	*44:03		-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
30	9021	RSH	*42:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	9019	DUCAF	*18:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	9297	HAG	*41:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	9098	MT14B	*40:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	9104	DHIF	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	9302	SSTO	*44:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	9024	KT17	*15:01	*35:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	9065	HHKB	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	9099	LZL	*15:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	9315	CML	*08:01	*27:05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40	9134	WHONP199	*13:02	*46:01	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
41	9055	H0301	*14:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	9066	TAB089	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	9076	T7526	*46:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	9057	TEM	*38:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45	9239	SHJO	*42:01	*50:01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	9013	SCHU	*07:02		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47	9045	TUBO	*51:01		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	9303	TER-ND	*35:01	*44:03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+

Lot No.: 5K4 **Lot-specific information**

[1]The 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.

[2]The 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.

[3]Primer mix 39 amplifies C*07:04 alleles in the CH1007 and TUBO cell lines. Primer mix 63 amplifies C*03:04 in the GU373 cell line.

No DNAs carrying the alleles to be amplified by primer solutions 10, 18, 19, 21, 22, 24, 26, 28, 29, 33, 43 to 56, 58, 60 and 62 were available.

The specificities of the primers in primer solutions 10, 18, 21, 26, 29, 33, 44 to 46, 50, 55, 56, 58 and 60 were tested by separately adding one, two or three additional 5'-primers, respectively one, two or three additional 3'-primers.

In primer solutions 19, 22, 28, 43, 47, 48, 54 and 62 it was only possible to test the 5'-primers, the 3'-primers were not possible to test.

In primer solutions 49 and 51 to 53 it was only possible to test the 3'-primers, the 5'-primers were not possible to test. In primer solution 24 neither the 5'-primer nor the 3'-primer was possible to test.

In primer solutions 1, 3, 5, 6, 11, 18, 21, 26, 31, 33, 34, 45, 46, 55 and 58 one, two or three of the 5'-primers were not possible to test. In primer solutions 1, 2, 4, 7, 10, 16, 17, 35, 36, 44, 46, 50, 56 and 58 one or more of the 3'-primers were not possible to test.

In addition, one or more 3'- and/or 5-primers in primer solutions 6 to 8, 27, 31, 35, 36 and 61 were tested by separately adding one 5'-primer and/or one 3'-primer respectively.

Lot No.: 5K4 **Lot-specific information**

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