

101.811-12 – including *Taq* polymerase, IFU-01  
101.811-12u – without *Taq* polymerase, IFU-02

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“Instructions for Use” (IFU)

Lot No.: **23Y**

Lot-specific information

## **Olerup SSP® DRB4\*01:03:01:02N**

Product number:	101.811-12 – including <i>Taq</i> polymerase 101.811-12u – without <i>Taq</i> polymerase
Lot number:	23Y
Expiry date:	2017-September-01
Number of tests:	12
Number of wells per test:	2+1
Storage - pre-aliquoted primers:	dark at -20°C
- PCR Master Mix:	-20°C
- Adhesive PCR seals	RT
- Product Insert	RT

### **This Product Description is only valid for Lot No. 23Y.**

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

A well containing Negative Control primer pairs has been added.

The format of the Product Insert and Worksheet has been changed

The DRB4\*01:03:01:02N primer set, specificity and interpretation tables have been updated compared to the previous *Olerup SSP®* DRB4\*01:03:01:02N lot (**Lot No. 09V**). The kit design is based on IMGT/HLA database 3.19.0.

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

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

Well	5'-primer	3'-primer	rationale
3	-	-	Updated negative control.

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Well **3** contains Negative Control primer pairs, that will amplify more than 95% of the Olerup SSP® HLA Class I, DRB, DQB1, DPB1 and DQA1 amplicons as well as all the amplicons generated by the control primer pairs matching the human growth hormone gene.

HLA-specific PCR product sizes range from 75 to 200 base pairs.  
The PCR product generated by the positive control primer pair is 430 base pairs.

Length of PCR product	105	200	105	80	75	80	85
<b>5'-primer<sup>1</sup></b>	<b>164</b>	<b>340</b>	<b>440</b>	<b>45</b>	<b>45</b>	<b>43</b>	<b>36</b>
	5'-CAC <sup>3'</sup>	5'-Agg <sup>3'</sup>	5'-TTA <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-Tgg <sup>3'</sup>	5'-TAC <sup>3'</sup>
							<b>36</b>
							5'-TAT <sup>3'</sup>
<b>3'-primer<sup>2</sup></b>	<b>231</b>	<b>2<sup>nd</sup> I</b>	<b>507</b>	<b>59</b>	<b>58</b>	<b>57</b>	<b>47</b>
	5'-TgC <sup>3'</sup>	5'-AAA <sup>3'</sup>	5'-TTg <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ggC <sup>3'</sup>	5'-CTC <sup>3'</sup>	5'-ACA <sup>3'</sup>
							<b>48</b>
							5'-gCA <sup>3'</sup>
							<b>48</b>
							5'-gCC <sup>3'</sup>
							<b>52</b>
							5'-TgT <sup>3'</sup>
<b>A*</b>	+	+	+				
<b>B*</b>	+	+	+				
<b>C*</b>	+	+	+				
<b>DRB1</b>				+	+		
<b>DRB3</b>				+	+		
<b>DRB5</b>				+			
<b>DQB1</b>					+		
<b>DPB1</b>						+	
<b>DQA1</b>							+

<sup>1</sup>The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2<sup>nd</sup> or 3<sup>rd</sup> 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](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

<sup>2</sup>The nucleotide position for HLA class I genes and the codon for HLA class II genes, in the 2<sup>nd</sup> or 3<sup>rd</sup> exon or the 2<sup>nd</sup> 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](http://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

### DRB4\*01:03:01:02N SSP subtyping

#### CONTENT

The primer set contains 5'- and 3'-primers for identifying the DRB4\*01:03:01:02N allele.

#### PLATE LAYOUT

Each test consists of 3 PCR reactions in an 8 well cut PCR plate. Wells 4 to 8 are empty.

<b>1</b>	<b>2</b>	<b>NC</b>	empty	empty	empty	empty	empty
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The 8 well cut PCR plate is marked with the Lot No. '23Y' in silver/gray ink.

Well No. 1 is marked with the Lot No. '23Y'.

Well 3 – 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 heat-sealed with a PCR-compatible foil.

**Please note:** When removing each 8 well PCR plate, make sure that the remaining plates stay sealed. Use a scalpel or a similar instrument to carefully cut the foil between the plates.

#### INTERPRETATION

The interpretation of DRB4\*01:03:01:02N SSP subtypings will be influenced by most other DRB4 alleles.

For further details see Specificity Table.

#### UNIQUELY IDENTIFIED ALLELES

The DRB4\*01:03:01:02N allele will give rise to a unique amplification pattern by the primers in the DRB4\*01:03:01:02N kit<sup>1,2</sup>.

<sup>1</sup>DRB4 alleles listed on the IMGT/HLA web page 2015-January-19, release 3.19.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

<sup>2</sup>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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**SPECIFICITY TABLE**

**DRB4\*01:03:01:02N SSP subtyping**

**Specificities and sizes of the PCR products of the 2+1 primer mixes used for DRB4\*01:03:01:02N SSP subtyping**

Primer Mix	Size of spec. PCR product <sup>1</sup>	Size of control band <sup>2</sup>	Amplified DRB4 alleles <sup>3</sup>
1	155 bp	515 bp	*01:03:01:02N
2	245 bp	430 bp	*01:01:01:01-01:03:01:01, 01:03:01:03-01:04, 01:05 <sup>?</sup> , 01:06-01:08, 02:01N
3 <sup>4</sup>			<b>Negative Control</b>

<sup>1</sup> 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 DRB4\*01:03:01:02N SSP typings. 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.

<sup>2</sup> The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the longer, 515 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.

<sup>3</sup> For several DRB alleles 1<sup>st</sup> and/or 3<sup>rd</sup> 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

<sup>4</sup> Primer mix 3 contains a negative control, which will amplify more than 95% of HLA amplicons as well as the amplicons generated by the control primer pairs matching the human growth hormone gene. HLA-specific PCR product sizes range from 75 to 200 base pairs and the PCR product generated by the HGH positive control primer pair is 430 base pairs.

‘?’, the nucleotide sequence of the primer matching region is not known.

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## PRIMER SPECIFICATION

Well No.	1	2
Length of spec.	155	245
PCR product		
Length of int.	515	430
pos. control <sup>1</sup>		
5'-primer(s) <sup>2</sup>	1 <sup>st</sup> I <sup>4</sup>	1 <sup>st</sup> I <sup>5</sup>
	5' -CAA 3'	5' -ggg 3'
3'-primer(s) <sup>3</sup>	42(213)	5 <sup>6</sup>
	5' -TCA 3'	5' -TgC 3'
Well No.	1	2

<sup>1</sup>The internal positive control primer pairs amplify segments of the human growth hormone gene. The internal positive control bands are 430 or 515 base pairs respectively, well distribution as outlined in the table. Well number 1 contains the longer, 515 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

<sup>2</sup>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](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

<sup>3</sup>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](http://www.ebi.ac.uk/imgt/hla) web site. The sequence of the 3 terminal nucleotides of the primer is given.

<sup>4</sup>Matching the sequence of the 3'-end of the 1<sup>st</sup> intron.

<sup>5</sup>Matching sequences within the 1<sup>st</sup> intron.

<sup>6</sup>Matching sequences from the 3'-end of the 1<sup>st</sup> intron into the 5'-end of the 2<sup>nd</sup> exon.

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CELL LINE VALIDATION SHEET					
DRB4*01:03:01:02N SSP kit <sup>2</sup>					
				Well	
				1	2
				201327501	201327502
IHWC cell line <sup>1</sup>		DRB4			
1	9001 SA			-	-
2	9280 LK707	*01:03		-	+
3	9011 E4181324			-	-
4	9275 GU373			-	-
5	9009 KAS011			-	-
6	9353 SM	*01:03		-	+
7	9020 QBL			-	-
8	9025 DEU	*01:01		-	+
9	9026 YAR	*01:03		-	+
10	9107 LKT3	*01:03		-	+
11	9051 PITOUT	*01:01		-	+
12	9052 DBB	*01:03N		+	-
13	9004 JESTHOM			-	-
14	9071 OLGA			-	-
15	9075 DKB	*01:03		-	+
16	9037 SWEIG007			-	-
17	9282 CTM3953540			-	-
18	9257 32367	*01:01		-	+
19	9038 BM16			-	-
20	9059 SLE005			-	-
21	9064 AMALA			-	-
22	9056 KOSE			-	-
23	9124 IHL			-	-
24	9035 JBUSH			-	-
25	9049 IBW9	*01:01		-	+
26	9285 WT49			-	-
27	9191 CH1007	*01:03		-	+
28	9320 BEL5GB	*01:01		-	+
29	9050 MOU	*01:01		-	+
30	9021 RSH			-	-
31	9019 DUCAF			-	-
32	9297 HAG			-	-
33	9098 MT14B	*01:03		-	+
34	9104 DHIF			-	-
35	9302 SSTS	*01:03		-	+
36	9024 KT17	*01:03		-	+
37	9065 HHKB			-	-
38	9099 LZL			-	-
39	9315 CML	*01:02		-	+
40	9134 WHONP199	*01:03		-	+
41	9055 H0301			-	-
42	9066 TAB089			-	-
43	9076 T7526	*01:03		-	+
44	9057 TEM			-	-
45	9239 SHJO	*01:01	*01:03	-	+
46	9013 SCHU			-	-
47	9045 TUBO			-	-
48	9303 TER-ND			-	-

<sup>1</sup>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.

<sup>2</sup>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.

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