DRB1\*11 (101.115-24/03, -24u/03u) Lot No: 6R5 Expiry Date: 2027-03-01

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sample ID:\_\_\_\_\_\_\_\_\_\_\_\_\_\_

DNA Conc.(ng/ul):\_\_\_\_\_\_\_\_\_

Test Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tested By:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Review Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Reviewed By:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Interpretation:\_\_\_\_\_\_\_\_\_\_\_ Failed lanes*: \_\_\_\_\_\_\_\_\_\_\_\_ *Comments:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

**Gel Picture**

|  |
| --- |
| PHOTO DOCUMENT |



Abbreviations:

ICB: Internal Control Band

AmpS: Amplicon Size

**Notes:**

Product sizes are approximate. For detailed information, see the lot-specific Specificity Table and Interpretation Table.

This table is intended as a guide. For interpretation always use the Interpretation Table and/or Specificity Table.

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

In order to have as little co-amplification as possible of non-DRB1\*11 alleles by the primer pairs of the DRB1\*11 subtyping kit, the DRB1\*11 characteristic sequence motif in codon 58, ‘Ag’, has been used in either the 5’-primer or the 3’-primer in many of the DRB1\*11 primer mixes and consequently many of the specific PCR products are shorter than 100 base pairs.

Primer mix 4 may faintly amplify the DRB1\*13:29 allele.

Primer mix 10 may faintly amplify the DRB1\*11:53 allele.

Primer mixes 4, 12 and 46 have tendencies of giving rise to primer oligomer formation.

Primer mixes 6, 11, 13, 19, 32 and 44 may have tendencies of unspecific amplifications.

Primer mix 17 may give rise to a lower yield of HLA-specific PCR product than the other DRB1\*11 primer mixes.

Primer mix 12 may amplify the DRB1\*11:60 and 11:109 and the DRB1\*15:68 alleles.

Primer mix 48 contains a negative control, which will amplify the 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.

  
 













**1**DRB1\*11 alleles in bold lettering are listed as confirmed alleles on the on the IMGT/HLA web page [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla), release 3.29.0, August 2017.

**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>.

**3**The following DRB1\*11 primer mixes have two or more product sizes:

|  |  |  |  |
| --- | --- | --- | --- |
| Primer Mix | Size of spec. PCR product | Amplified DRB1\*11 alleles | Other amplified DRB alleles |
| **9** | 85 bp  115 bp | \*11:07:01-11:07:02, 11:103:01-11:103:02, 11:105, 11:107, 11:125, 11:173  \*11:77 | \*03:08, 03:65, 03:140, **DRB3\*01:42** |
| **10** | 85 bp  120 bp | \*11:07:01-11:07:02, 11:23:01-11:23:02, 11:25, 11:45, 11:55, 11:64, 11:67, 11:103:01-11:103:02, 11:105, 11:107, 11:119, 11:125, 11:173  \*11:74:01-11:74:02 | \*03:08, 03:65, 03:140, 08:63, 08:75, **DRB3\*01:42** |
| **11** | 155 bp  200 bp  255 bp | \*11:75  \*11:08:01-11:08:03, 11:36, 11:42:01-11:42:02, 11:57, 11:64, 11:68, 11:130, 11:286, 11:312  \*11:06:01-11:06:03, 11:21, 11:47, 11:57, 11:129, 11:174 | \*13:20:01:01-13:20:01:03, 13:25, 13:29:01:01-13:29:01:02, 13:43, 13:56, 13:60, 13:71, 13:78, 13:88, 13:119, 13:134, 13:149, 13:180, 13:224, 13:231, 13:235, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:40, 14:69, 14:74, 14:77, 14:84-14:85, 14:98, 14:102, 14:115-14:116, 14:135, 14:144, 14:156, 14:173-14:174, 14:181, 14:218, 14:222N-14:223, 14:235, 14:239  \*03:20, 03:145, 13:58, 13:81, 13:163, 13:242:01-13:242:02, 13:284, 14:29, 14:99 |
| **12** | 95 bp  145 bp  185 bp | \*11:61, 11:214  \*11:90  \*11:30, 11:288 | **DRB3\*01:42, DRB3\*02:18** |
| **15** | 60 bp  105 bp | \*11:66:01-11:66:02  \*11:10:01-11:10:02, 11:12:01-11:13:02, 11:17, 11:52, 11:114, 11:149, 11:170, 11:179, 11:189-11:191, 11:196, 11:200, 11:202, 11:218, 11:275w | \*14:11:01:01-14:11:01:02, 14:148, **DRB3\*01:42** |
| **16** | 110 bp  255 bp | \*11:15:01:01-11:15:02, 11:24:01-11:24:02, 11:44, 11:49:01-11:50, 11:76, 11:85, 11:114, 11:127, 11:183, 11:196, 11:249, 11:273, 11:278, 11:286, 11:302  \*11:91 | \*03:26, 03:33, 03:43-03:44, 03:71:01-03:71:02, 13:34, 13:62, 13:64, 13:68, 13:106, 13:136, 13:151, 13:174, 13:204, 13:216, 13:221, 13:250, 13:266, 14:41, 14:77, 14:97, 14:110, 14:218, 14:221, **DRB3\*01:14** |
| **19** | 180 bp  225 bp  260 bp | \*11:31, 11:52, 11:96, 11:148, 11:293, 11:312  \*11:23:01-11:23:02, 11:25, 11:32, 11:45, 11:55, 11:64, 11:70, 11:119  \*11:86 | \*03:10, 13:43, 13:45, 13:159, 13:179, 13:191, 13:217, 14:01:01:01-14:01:05, 14:07:01-14:08, 14:16, 14:22, 14:25:01-14:26, 14:32:01-14:32:03, 14:34-14:35, 14:38:01-14:39, 14:49, 14:53-14:55, 14:58, 14:60, 14:62, 14:69-14:70, 14:72, 14:74-14:75, 14:82, 14:86-14:88, 14:90, 14:92N, 14:97, 14:99, 14:104-14:105, 14:110-14:114, 14:117-14:119, 14:122, 14:124-14:125, 14:128-14:133, 14:137N, 14:139-14:140, 14:142, 14:146-14:147, 14:149-14:151, 14:153, 14:157-14:158, 14:162-14:164, 14:166N, 14:168, 14:171-14:173, 14:184-14:186, 14:189-14:193, 14:197N, 14:200, 14:202-14:204, 14:207-14:208, 14:211, 14:213-14:217, 14:219, 14:225, 14:227-14:228, 14:230, 14:232, 14:234-14:238, 14:240, 14:243-14:245, 14:248  \*03:157, 08:20, 13:13, 13:18, 13:47, 13:55, 13:119, 13:144, 13:146, 13:154, 13:156, 13:158:01-13:158:02, 13:164, 13:232, 13:286, 13:331, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:27:01-14:27:02, 14:40, 14:55, 14:63, 14:67, 14:77-14:78, 14:84-14:85, 14:89, 14:102, 14:115-14:116, 14:135-14:136, 14:144, 14:156, 14:164, 14:173-14:174, 14:181, 14:218, 14:222N-14:223, 14:239  \*13:16:01:01-13:16:01:02 |
| **21** | 135 bp  175 bp | \*11:59, 11:80, 11:83, 11:87, 11:135, 11:142, 11:182  \*11:22 | \*03:08, 03:65, 03:140, **DRB3\*01:42**  \*04:15, 04:61, 04:138, 04:145, 04:154, 04:170, 04:265, 04:291, 04:323, 04:339 |
| **22** | 115 bp  180 bp  215 bp  245 bp | \*11:15:01:01-11:15:02  \*11:33, 11:35, 11:65:01-11:65:02, 11:130  \*11:69, 11:82  \*11:81, 11:112, 11:137 | \*03:71:02, 13:62, 13:151  \*13:09, 13:129, 13:192, 13:314, 13:326, 14:24, 14:37, 14:226  \*03:78, 03:136w |
| **23** | 120 bp  190 bp | \*11:38  \*11:217N |  |
| **24** | 155 bp  250 bp | \*11:39, 11:43:01:01-11:43:01:02, 11:50, 11:115, 11:145, 11:151, 11:168, 11:171, 11:174  \*11:06:01-11:06:03, 11:21, 11:47, 11:57, 11:81, 11:129, 11:174 | \*03:17, 03:37, 03:80, 03:140, 13:118, 13:131, 13:135, 13:150, 13:262, 14:59, 14:86, 14:96, 14:153-14:154  \*03:20, 03:136w, 03:145, 13:58, 13:81, 13:163, 13:242:01-13:242:02, 13:284, 14:29, 14:99 |
| **26** | 120 bp  160 bp | \*11:09:01:01-11:10:02, 11:13:01-11:13:02, 11:16:01:01-11:17, 11:20, 11:40, 11:46:01-11:46:02, 11:52, 11:59, 11:62:01-11:62:02, 11:80, 11:83, 11:87, 11:113, 11:118:01-11:118:02, 11:122, 11:149, 11:182, 11:189-11:190, 11:202, 11:213, 11:218, 11:280  \*11:78, 11:152 | \*03:08, 03:65, 03:140, 14:11:01:01-14:11:01:02, 14:148, **DRB3\*01:42** |
| **29** | 100 bp  215 bp | \*11:14:01:01-11:14:02, 11:19:01-11:20, 11:31, 11:45, 11:73, 11:82, 11:184, 11:191  \*11:154 | \*01:03:01:01-01:03:05, 01:15, 01:24:01-01:24:02, 01:39N, 01:89, 01:102, 01:127, 03:188, 04:14, 04:38:01:01-04:38:01:02, 04:82, 04:86, 04:105:01-04:107, 04:125, 04:185, 04:205, 04:344, 07:01:01:01-07:01:01:02, 07:01:01:04-07:01:30, 07:03-07:04, 07:06-07:19,  07:21-07:23, 07:25-07:30, 07:32-07:42, 07:44-07:54, 07:56-07:64, 07:66-07:67, 07:69-07:120, 07:122-07:123, 07:125-07:146, 08:03:02:01-08:03:14, 08:14-08:15, 08:18-08:19, 08:23, 08:25, 08:27, 08:29-08:30:03, 08:32-08:38, 08:40, 08:45:01-08:47, 08:49, 08:51, 08:53, 08:56, 08:58, 08:60N-08:63, 08:66, 08:68:01-08:69, 08:71, 08:74, 08:91-08:92, 08:95, 08:97, 08:104, 08:110, 08:115, 08:119, 10:10, 12:22, 12:39:01-12:39:02, 13:02:01:01-13:02:03, 13:02:05-13:03:12, 13:12:01-13:13, 13:23:01-13:23:02, 13:30-13:31, 13:33:01-13:34, 13:36-13:39, 13:41, 13:45, 13:65-13:67, 13:73-13:74, 13:82, 13:85, 13:90, 13:95-13:97:02, 13:99, 13:101, 13:103-13:104, 13:107, 13:115, 13:118, 13:120, 13:122-13:124, 13:126, 13:128, 13:133, 13:135, 13:139-13:140, 13:143, 13:145, 13:147, 13:151-13:152, 13:154-13:155, 13:157, 13:159, 13:161, 13:165, 13:167-13:168, 13:170-13:172, 13:174, 13:179, 13:182, 13:188, 13:194-13:196, 13:198, 13:202, 13:207-13:212, 13:216, 13:219-13:220, 13:225, 13:227-13:228, 13:236-13:237, 13:239-13:241, 13:243-13:244, 13:250, 13:253, 13:255N, 13:257, 13:264-13:265, 13:268N-13:269, 13:275, 13:280, 13:282, 13:285, 13:288-13:289N, 13:292-13:293, 13:295N-13:298N, 13:301, 13:306, 13:310N, 13:312, 13:316-13:321, 13:325, 13:329N-13:335, 14:24, 14:63, 14:67, 14:226, 15:02:01:02-15:02:20, 15:11:01-15:11:02, 15:14, 15:19, 15:26, 15:29-15:30, 15:38:01-15:39, 15:44, 15:47, 15:58, 15:60, 15:68, 15:78, 15:80N, 15:99, 15:101, 15:103-15:105:02, 15:115N, 15:118-15:119, 15:122, 15:126, 15:131, 15:140, 15:149, 15:152, 15:154N-15:156, 15:159N, 15:161, 15:167, 15:179, 15:188:01:01-15:189, 15:194, 15:206, 15:210, 15:212-15:213, 16:05:01-16:05:02, 16:07, **DRB3\*01:31, DRB3\*02:11, DRB3\*02:131, DRB3\*02:160, DRB5\*01:07, DRB5\*01:11, DRB5\*01:46, DRB5\*01:69, DRB5\*01:121N, DRB5\*01:125N, DRB5\*02:03, DRB5\*02:31** |
| **33** | 155 bp  235 bp | \*11:88, 11:94  \*11:112, 11:137 | \*03:181, 13:177, 13:334  \*03:78 |
| **34** | 80 bp  135 bp  290 bp | \*11:31, 11:96, 11:148, 11:293, 11:312  \*11:169N  \*11:97 | \*03:10, 12:96, 13:43, 13:45, 13:179, 13:217, 14:35, 14:53, 14:72, 14:128, 14:132, 14:138, 14:186, 14:208, 15:187 |
| **35** | 85 bp  190 bp | \*11:98  \*11:217N |  |
| **36** | 90 bp  115 bp  165 bp  245 bp | \*11:102:01-11:102:02, 11:175, 11:275, 11:278  \*11:99  \*11:110  \*11:128 | \*03:49, 14:161 |
| **42** | 135 bp  180 bp | \*11:72, 11:92, 11:180, 11:276  \*11:104 | \*01:75, 10:23 |
| **44** | 105 bp  200 bp  270 bp | \*11:147:01-11:147:02  \*11:111  \*11:187 |  |
| **46** | 70 bp  110 bp | \*11:60, 11:109  \*11:198, 11:245 |  |
| **47** | 110 bp  210 bp | \*11:198, 11:245  \*11:193:01-11:193:02, 11:209, 11:229, 11:270 | \*08:05, 08:18, 08:24:01-08:24:02, 08:29, 08:31, 08:40-08:41, 08:92, 08:102, 12:01:02, 12:02:04, 12:16:01, 12:49, 12:66, 12:73, 13:17, 13:116, 13:175, 13:214, 14:04:01:01-14:04:09, 14:11:01:01-14:11:01:02, 14:28, 14:31, 14:52, 14:68:01-14:68:02, 14:71, 14:73, 14:120, 14:126:01-14:126:02, 14:138, 14:145, 14:148, 14:152N, 14:175, 14:180, 14:196, 14:201, 14:205:01-14:206, 14:210Q, 14:220, 14:224, 14:229, 14:233, 14:241, 14:249-14:251 |

**4**The following DRB1\*11 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

|  |  |
| --- | --- |
| Alleles | Primer mix |
| DRB1\*11:24:01-11:24:02, 11:91, 11:302 | 16 |
| DRB1\*11:61, 11:90 | 12 |
| DRB1\*11:97, 11:169N | 34 |
| DRB1\*11:99, 11:128, 11:175 | 36 |
| DRB1\*11:111, 11:147:01-11:147:02 | 44 |

5The following alleles cannot be separated by this lot of DRB1\*11 primer set. These alleles can be distinguished by the DR low resolution and/or the DRB1\*08 kits.

|  |
| --- |
| Alleles |
| DRB1\*11:67, DRB1\*08:75 |
| DRB1\*11:193:01-11:193:02, DRB1\*08:41 |
| DRB1\*11:209, DRB1\*08:31 |
| DRB1\*11:293, DRB1\*13:217 |

Abbreviations:

w: may be weakly amplified.