Gel Documentation Form and Worksheet

DRB1\*14 (101.117-12/03, -12u/03u) Lot No: 9G3 Expiry Date: 2021-05-01

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

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

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

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

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

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

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

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

**Gel Picture**

|  |
| --- |
| PHOTO DOCUMENT |





‘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.

Primer mixes 23, 28 and 42 may have tendencies of unspecific amplifications.

In primer mixes 10 and 37 the positive control band may be weaker than for other DRB1\*14 primer mixes.

Primer mix 48 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.

















**1**DRB1\*14 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 3.27.0, January 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\*14 primer mixes have two or more product sizes:

|  |  |  |  |
| --- | --- | --- | --- |
| Primer Mix | Size of spec. PCR product | Amplified DRB1\*14 alleles | Other amplified DRB alleles |
| **7** | 200 bp  225 bp | \*14:45, 14:122, 14:178  \*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 | \*13:193  \*08:20, 11:23:01-11:23:02, 11:25, 11:45, 11:55, 11:64, 11:119, 13:13, 13:18, 13:47, 13:55, 13:119, 13:144, 13:146, 13:154, 13:156, 13:158, 13:164, 13:232 |
| **9** | 130 bp  250 bp | \*14:62, 14:65, 14:78, 14:169-14:170  \*14:05:01:01-14:05:04, 14:37, 14:43, 14:45, 14:56, 14:84, 14:91, 14:96, 14:100, 14:103, 14:127:01-14:127:02, 14:130, 14:136, 14:161, 14:167, 14:187, 14:189 | \*03:12, 04:10:01-04:11:04, 04:12, 04:67, 04:91, 04:126, 04:136, 04:147, 04:201, 04:203, 04:207, 04:250, 08:06, 08:10, 08:12, 08:22, 08:54, 08:70, 12:46, 13:04, 13:32, 13:48, 13:58, 13:75, 13:81, 13:89:01-13:89:02, 13:93-13:94:02, 13:108, 13:164, 13:169, 15:12  \*11:218, 13:72 |
| **14** | 60 bp  130 bp | \*14:22, 14:25, 14:53, 14:73, 14:105, 14:128  \*14:27:01-14:27:02 | \*08:08  \*08:73, 11:09, 11:28:01-11:28:02, 11:58:01-11:58:02, 11:83, 11:87, 11:113, 11:115, 11:182, 13:05:01-13:05:03, 13:18, 13:26:01-13:26:02, 13:42, 13:50:01-13:50:03, 13:136, 13:144, 13:158, 13:189, 13:199, 13:203, 16:08 |
| **20** | 110 bp  160 bp  215 bp | \*14:25, 14:53, 14:58, 14:69, 14:128, 14:186  \*14:04:01-14:04:06, 14:28, 14:31, 14:50, 14:68:01-14:68:02, 14:71, 14:73, 14:76, 14:79, 14:93, 14:102, 14:107, 14:116, 14:120, 14:138, 14:145, 14:152N, 14:180, 14:196  \*14:15 | \*08:08, 13:45, 13:197  \*08:01:01, 08:01:04-08:04:07, 08:06-08:08, 08:10-08:17, 08:19-08:20, 08:22-08:23, 08:26, 08:28, 08:30:01-08:30:03, 08:33-08:34, 08:36:01, 08:37, 08:39, 08:42, 08:44-08:46, 08:48-08:55, 08:57-08:66, 08:68:02-08:69, 08:71-08:86, 11:23:01-11:23:02, 11:25, 11:45, 11:55, 11:64, 11:67, 11:119, 13:13, 13:47, 13:55, 13:154, 13:164  \*08:01:01-08:01:02, 08:01:04-08:01:05, 08:01:07-08:04:07, 08:06-08:13, 08:15-08:17, 08:19, 08:21-08:23, 08:26-08:28, 08:30:01-08:30:03, 08:32-08:39, 08:42, 08:44-08:46, 08:48-08:55, 08:58-08:66, 08:68:01-08:79, 08:81-08:86, 11:67 |
| **21** | 170 bp  215 bp | \*14:13, 14:63, 14:65, 14:78, 14:85, 14:169-14:170  \*14:24, 14:37 | \*03:12, 13:03:01-13:04, 13:12:01-13:13, 13:21:01-13:21:02, 13:30, 13:32-13:33:03, 13:38, 13:48-13:49, 13:55, 13:58, 13:65-13:66:02, 13:75, 13:81, 13:88-13:90, 13:93-13:95, 13:101, 13:108, 13:115, 13:118, 13:120, 13:122, 13:133-13:134, 13:139, 13:151-13:152, 13:154, 13:161, 13:164, 13:167, 13:169, 13:174, 13:188, 13:194, 13:216, 13:219, 13:227-13:228, 13:230, 13:253  \*11:69, 11:82, 13:09, 13:129, 13:192 |
| **23** | 75 bp  155 bp | \*14:153, 14:184  \*14:17, 14:21, 14:30, 14:33, 14:35, 14:42, 14:53, 14:64-14:65, 14:72, 14:88, 14:95, 14:128, 14:132, 14:134, 14:179, 14:186-14:187 | \*03:01:01:01-03:01:22, 03:01:24-03:01:28, 03:04:01-03:05:03, 03:07:01-03:15:02, 03:18-03:25:02, 03:28-03:30, 03:32-03:34, 03:36-03:37, 03:39-03:40, 03:43-03:52, 03:54-03:59, 03:61-03:68N, 03:70-03:73, 03:76-03:79, 03:81, 03:83-03:84, 03:86, 03:89, 03:91, 03:93-03:101, 03:104-03:110, 03:112-03:114, 03:116-03:121, 03:123-03:130, 03:132-03:137, 03:139-03:146, 11:01:01:01-11:01:06, 11:01:08-11:01:27, 11:01:28?, 11:01:29-11:04:13, 11:04:15, 11:06:01-11:11:01, 11:11:03-11:16, 11:18-11:21, 11:23:01-11:29:02, 11:31-11:36, 11:38-11:40, 11:42:01-11:47, 11:49:01-11:49:02, 11:51, 11:53-11:55, 11:57-11:66, 11:68-11:70, 11:72-11:82, 11:84:01-11:87, 11:89-11:103:02, 11:105-11:106, 11:108-11:144, 11:146-11:148, 11:150-11:169N, 11:172-11:182, 11:185-11:188, 11:190-11:192, 11:194-11:199, 11:201-11:208, 11:210-11:228, 13:01:01:01-13:01:08, 13:01:10-13:02:15, 13:04-13:06, 13:09-13:11:02, 13:14:01-13:16, 13:18, 13:20-13:25, 13:27-13:31, 13:34, 13:39, 13:41-13:46, 13:50:01-13:52, 13:54, 13:56-13:57, 13:59, 13:61:01-13:64,  13:66:01-13:66:02, 13:68-13:69, 13:71, 13:73-13:75, 13:77-13:79, 13:82-13:83, 13:86-13:87, 13:91-13:93, 13:96:01-13:100, 13:102, 13:104-13:107, 13:109-13:114, 13:117, 13:119, 13:121, 13:123-13:132, 13:136-13:148, 13:150, 13:153-13:158, 13:162-13:163, 13:165-13:166, 13:168-13:173, 13:176, 13:178-13:179, 13:181, 13:184-13:187, 13:190, 13:192-13:193, 13:196-13:197, 13:199-13:213, 13:215, 13:217-13:218, 13:220-13:226, 13:229, 13:233-13:234, 13:236-13:245, 13:247, 13:249N-13:252N, 13:254-13:261 |
| **24** | 85 bp  125 bp  165 bp | \*14:26, 14:166N  \*14:36, 14:41, 14:77, 14:110  \*14:90, 14:198 | \*11:177, 13:92  \*03:18, 03:43, 03:71:01, 11:76, 11:114, 11:183, 11:196, 13:34, 13:64, 13:136, 13:174, 13:204, 13:221, 13:250, **DRB3\*01:14** |
| **25** | 85 bp  120 bp  210 bp  250 bp | \*14:55, 14:164, 14:173  \*14:07:01-14:07:02, 14:22, 14:25, 14:49, 14:53, 14:68:01-14:69, 14:93, 14:119, 14:143, 14:164  \*14:56, 14:84, 14:136  \*14:44:01-14:44:03 | \*08:08, 08:15  \*01:14, 04:62, 04:69, 08:08, 08:15, 13:45, 13:159, 13:179, **DRB3\*02:16**  \*03:35 |
| **26** | 125 bp  250 bp | \*14:59, 14:86, 14:96, 14:145, 14:153-14:154  \*14:01:01-14:01:04 | \*12:34 |
| **27** | 165 bp  220 bp | \*14:141  \*14:46 | **DRB3\*01:07, DRB3\*01:21, DRB3\*01:41, DRB3\*02:01-02:08, DRB3\*02:11, DRB3\*02:13-02:37, DRB3\*02:39-02:43, DRB3\*02:45-02:77, DRB3\*02:79, DRB3\*03:17**  **DRB3\*02:58** |
| **28** | 170 bp  215 bp | \*14:11, 14:148  \*14:50, 14:76, 14:79, 14:93, 14:152N | \*08:31, 08:41, 08:63, 08:75, 11:67, 11:193:01-11:193:02, 11:209, 12:04, 12:49  \*03:92, 08:67, 12:22 |
| **29** | 125 bp  180 bp  220 bp | \*14:60, 14:97, 14:158  \*14:48, 14:174, 14:177, 14:195N  \*14:104, 14:111, 14:137N | \*03:26, 03:33, 03:44, 11:44, 11:49:01-11:50, 11:85, 11:127, 11:194, 13:95, 13:106, 13:216  \*03:38, 03:79, 03:85, 03:96, 13:31, 13:46, 13:54, 13:77, 13:100, 13:162, 13:180, 13:260, **DRB3\*01:14**  **\***03:14-03:15:02, 03:90, 03:145, 11:105 |
| **30** | 160 bp  190 bp | \*14:47, 14:98, 14:165  \*14:06:01-14:06:04, 14:12:01-14:12:02, 14:17-14:18, 14:21, 14:29, 14:33, 14:52, 14:59, 14:64, 14:78, 14:80-14:81, 14:83, 14:95, 14:106, 14:108, 14:121, 14:132-14:133, 14:154, 14:165, 14:170, 14:176-14:177, 14:195N | \*03:01:02, 03:02:02, 03:05:03, 03:13:02, 03:24, 03:27, 03:81, 03:130, 13:61:01, 13:96:02, **DRB3\*01:08, DRB3\*01:46, DRB3\*02:06, DRB3\*02:20, DRB3\*03:10**  \*03:01:01:01-03:01:28, 03:03, 03:06-03:08, 03:10-03:13:02, 03:15:01-03:16, 03:18-03:20, 03:22-03:24, 03:26, 03:28, 03:32-03:34, 03:36-03:37, 03:39, 03:42, 03:45-03:48, 03:50-03:51, 03:54-03:56, 03:58-03:62, 03:64-03:73, 03:76-03:80, 03:82-03:87, 03:89, 03:91-03:101, 03:104, 03:106-03:114, 03:116-03:117, 03:119-03:121, 03:124-03:129, 03:132-03:146, 04:211, 04:230, 11:16, 11:40, 11:58:01, 11:59, 11:83, 11:113, 11:115, 11:182, 12:58, 13:01:01:01-13:01:22, 13:06, 13:09-13:10, 13:15, 13:18, 13:20, 13:27-13:28, 13:32, 13:35, 13:40, 13:42-13:43, 13:51, 13:53, 13:59, 13:61:01-13:61:02, 13:69, 13:71, 13:77-13:80, 13:87, 13:91-13:93, 13:98, 13:102, 13:105, 13:110-13:114, 13:117, 13:121, 13:125, 13:127, 13:129-13:131, 13:137N-13:138, 13:141, 13:144, 13:146, 13:148, 13:153, 13:156, 13:160, 13:163, 13:166, 13:173, 13:176-13:178, 13:181, 13:183-13:187, 13:190-13:193, 13:200N-13:201, 13:205, 13:213-13:215, 13:217-13:218, 13:221-13:223, 13:226, 13:233, 13:238, 13:242:01-13:242:02, 13:245, 13:248-13:249N, 13:251-13:252N, 13:254, 13:256, 13:258-13:261, 15:32, **DRB3\*03:10** |
| **32** | 100 bp  150 bp | \*14:13, 14:63, 14:78, 14:85, 14:170  \*14:19, 14:21, 14:47, 14:98, 14:109, 14:165 | \*03:12, 13:32, 13:65, 13:93, 13:120, 13:139  \*03:01:02, 03:02:02, 03:05:03, 03:13:02, 03:24, 03:27, 03:76, 03:81, 03:130, 13:10, 13:61:01, 13:85, 13:96:02, 13:120, 13:170, 13:176, 13:178, 13:196, **DRB3\*01:08, DRB3\*01:46, DRB3\*02:06, DRB3\*02:20, DRB3\*03:10** |
| **35** | 250 bp  280 bp | \*14:04:01-14:04:06, 14:11, 14:15, 14:28, 14:31, 14:50, 14:52, 14:71, 14:73, 14:76, 14:79, 14:107, 14:120, 14:126:01-14:126:02, 14:138, 14:145, 14:148, 14:152N, 14:175, 14:180, 14:196  \*14:113 | \*03:92, 08:04:01, 08:04:04-08:04:07, 08:06, 08:10, 08:12, 08:22, 08:28, 08:31, 08:54, 08:59, 08:67, 08:70, 08:75, 08:83, 11:67, 11:209, 12:01:01:01-12:15, 12:17-12:21, 12:23-12:38, 12:40-12:41, 12:43-12:56, 12:58-12:69, 13:17, 13:116, 13:175, 13:214  \*04:85 |
| **36** | 120 bp  155 bp | \*14:48, 14:63-14:64, 14:67, 14:78, 14:108-14:109, 14:115, 14:177  \*14:18, 14:33, 14:51, 14:59, 14:64, 14:95, 14:106, 14:132-14:134, 14:154 | \*03:13:01-03:13:02, 03:38, 03:58, 03:65, 03:79, 03:88, 03:125, 11:16, 11:20, 12:58, 13:01:01:01-13:01:06,  13:01:08-13:02:09, 13:02:11-13:02:15, 13:06, 13:10, 13:15-13:16, 13:27-13:28, 13:31-13:32, 13:34-13:36, 13:39-13:41, 13:51, 13:53, 13:59, 13:61:01-13:61:02, 13:65, 13:67, 13:69, 13:73, 13:77-13:80, 13:85, 13:87, 13:91-13:93, 13:96:01-13:96:02, 13:98-13:99, 13:102-13:105, 13:109-13:110, 13:112-13:113N, 13:117, 13:120-13:121, 13:123-13:128, 13:130-13:131, 13:137N-13:139, 13:141-13:143, 13:145-13:148, 13:153, 13:155-13:157, 13:159-13:160, 13:163, 13:165-13:166, 13:168, 13:170-13:171:02, 13:173, 13:176-13:177, 13:179, 13:181, 13:183, 13:185N-13:187, 13:190-13:191, 13:198, 13:200N-13:202, 13:205, 13:207-13:215, 13:217-13:218, 13:220-13:222, 13:225-13:226, 13:233, 13:236-13:245, 13:248-13:249N, 13:251-13:252N, 13:254-13:261, **DRB3\*01:08, DRB3\*01:46, DRB3\*03:10**  \*03:11:01, 03:97, 03:126 |
| 37 | 90 bp  175 bp | \*14:166N | \*03:08, 03:65, 03:140, 11:01:01:01-11:01:27, 11:01:28?, 11:01:29-11:04:12, 11:04:14-11:04:15, 11:06:01-11:11:01, 11:11:03-11:21, 11:23:01-11:29:02, 11:31-11:66, 11:68-11:70, 11:72-11:103:02, 11:105-11:192, 11:194-11:208, 11:210-11:22 |
| **38** | 165 bp  215 bp | \*14:05:01:01w-14:05:01:02w, 14:05:03w-14:05:04w, 14:37w, 14:43w-14:45w, 14:56w, 14:91w, 14:96w, 14:100w, 14:103w, 14:127:01w-14:127:02w, 14:136w, 14:161w, 14:167w, 14:187w  \*14:37w, 14:100w | \*03:35w, 13:72w  \*11:218w, 13:72w |
| **40** | 210 bp  250 bp | \*14:107, 14:152N  \*14:71 |  |
| **41** | 115 bp  140 bp  165 bp  245 bp | \*14:91, 14:94, 14:97, 14:162, 14:185  \*14:129  \*14:90, 14:198  \*14:75, 14:103 | \*03:04:01-03:04:02, 03:26, 03:33, 03:44, 11:29:01-11:29:02, 11:44, 11:47, 11:49:01-11:50, 11:63:01-11:63:02, 11:85, 11:127, 11:165, 13:60, 13:84, 13:106, 13:216, 13:229 |
| **43** | 95 bp  200 bp  225 bp | \*14:101, 14:178  \*14:82, 14:95, 14:132  \*14:188N | \*03:01:17, 03:15:02, 03:145 |
| **44** | 215 bp  280 bp | \*14:70, 14:83, 14:155  \*14:113 | \*15:03:01:01-15:03:03, 15:23, 15:54, 15:57, 15:94, 15:130, 15:137N, 15:142  \*04:85 |
| **45** | 65 bp  190 bp  225 bp | \*14:98  \*14:45  \*14:127:01 | \*08:67, 11:27:01, 11:84:01, 11:124, 11:138, 12:22, 13:33:02-13:33:03, 13:61:01, 13:94:02, 13:96:02, 16:46  \*03:35 |
| **46** | 105 bp  135 bp  165 bp  220 bp | \*14:92N  \*14:129, 14:158  \*14:88  \*14:87, 14:89, 14:197N | \*13:95 |
| **47** | 75 bp  215 bp | \*14:153, 14:184  \*14:163, 14:197N |  |

**4**The DRB1\*14 primer set cannot separate the DRB1\*14:21 and the DRB1\*03:76 and DRB1\*13:178 alleles. These alleles can be distinguished by the DR low resolution and/or DRB1\*03 and DRB1\*13 kits.

**5**The following DRB1\*14 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

|  |  |
| --- | --- |
| **Alleles** | **Primer mix** |
| DRB1\*14:01:02-14:01:04, 14:86 | 26 |
| DRB1\*14:26, 14:110 | 24 |
| DRB1\*14:75, 14:162 | 41 |

‘w’, might be weakly amplified.

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