DRB1\*14 (101.117-12/03, -12u/03u) Lot No: 6N0 Expiry Date: 2025-11-01

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.

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

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\*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, 14:218, 14:222N-14:223 | \*13:193  \*03:157, 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, 13:158:01-13:158:02, 13:164, 13:232, 13:286 |
| **9** | 130 bp  250 bp | \*14:62, 14:65, 14:78, 14:169-14:170  \*14:05:01:01-14:05:05, 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, 03:158, 04:10:01-04:11:04, 04:11:06-04:12, 04:67, 04:91, 04:126, 04:136, 04:147, 04:201, 04:203, 04:207, 04:250, 04:303, 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, 13:276, 13:307, 15:12  \*11:218, 13:72 |
| **14** | 60 bp  130 bp | \*14:22, 14:25:01-14:25:02, 14:53, 14:73, 14:105, 14:128  \*14:27:01-14:27:02 | \*08:08, **DRB5\*01:73**  \*08:73, 11:09:01:01-11:09:01:02, 11:28:01:01-11:28:03, 11:58:01-11:58:02, 11:83, 11:87, 11:113, 11:115, 11:182, 13:05:01:01-13:05:03, 13:18, 13:26:01-13:26:02, 13:42:01-13:42:02, 13:50:01-13:50:03, 13:136, 13:144, 13:158:01-13:158:02, 13:189, 13:199, 13:203, 13:277, 13:302, 16:08 |
| **20** | 110 bp  160 bp  215 bp | \*14:25:01-14:25:02, 14:53, 14:58, 14:69, 14:128, 14:186, 14:208  \*14:04:01:01-14:04:09, 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, 14:201, 14:205:01, 14:206, 14:210Q, 14:220, 14:224, 14:229, 14:233  \*14:15 | \*08:08, 13:45, 13:197  \*08:01:01, 08:01:04-08:03:10, 08:03:12-08:04:07, 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, 08:88-08:91, 08:93-08:97, 08:99-08:101, 08:103-08:107, 08:109, 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, 13:286  \*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, 08:81-08:91, 08:93-08:97, 08:99-08:101, 08:103-08:107, 08:109, 11:67 |
| **21** | 170 bp  215 bp  275 bp | \*14:13, 14:63, 14:65, 14:78, 14:85, 14:169-14:170  \*14:24, 14:37, 14:226  \*14:114 | \*03:12, 03:155, 03:158, 13:03:01:01-13:04, 13:12:01-13:13, 13:21:01:01-13:21:02, 13:30, 13:32-13:33:03, 13:38, 13:48-13:49:02, 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, 13:276, 13:295N, 13:307  \*11:69, 11:82, 13:09, 13:129, 13:192, 13:314  \*03:165 |
| **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, 14:208, 14:221 | \*03:01:01:01-03:01:22, 03:01:24-03:01:34, 03:04:01-03:05:03, 03:07:01:01-03:11:01, 03:11:03-03:15:02, 03:18-03:25:02, 03:28-03:30, 03:32-03:34, 03:36-03:37, 03:39-03:40, 03:43-03:52:02, 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, 03:139-03:153, 03:156N-03:157, 03:159-03:161, 03:163-03:166, 03:168-03:172, 03:174N-03:175, 03:177-03:178, 03:180, 03:182-03:186, 11:01:01:01, 11:01:01:03-11:01:06, 11:01:08-11:01:27, 11:01:28?, 11:01:29-11:04:13, 11:04:15-11:04:22, 11:06:01-11:11:01, 11:11:03-11:16:01:02, 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, 11:57-11:66:02, 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, 11:194:01-11:199, 11:201-11:208, 11:210-11:228, 11:230-11:248Q, 11:250N-11:260, 11:262-11:263, 11:265-11:269, 11:271-11:272Q, 11:274-11:287N, 11:289-11:290, 13:01:01:01-13:01:08, 13:01:10-13:01:22, 13:01:24-13:02:18, 13:04-13:06, 13:09-13:11:02, 13:14:01-13:16:01:02, 13:18, 13:20:01:01-13:25, 13:27:01-13:31, 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, 13:117:01:01-13:117:01:02, 13:119, 13:121, 13:123-13:132, 13:136-13:148, 13:150, 13:153-13:158:02, 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, 13:263-13:291, 13:293-13:294, 13:296-13:298N, 13:300-13:306, 13:308-13:315 |
| **24** | 85 bp  125 bp  165 bp | \*14:26, 14:166N  \*14:36, 14:41, 14:77, 14:110, 14:218  \*14:90, 14:198 | \*11:177, 13:92  \*03:18, 03:43, 03:71:01, 11:76, 11:114, 11:183, 11:194:02, 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, 14:25:01-14:25:02, 14:49, 14:53, 14:68:01-14:69, 14:93, 14:119, 14:143, 14:164, 14:200, 14:208  \*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, DRB5\*01:73**  \*03:35 |
| **26** | 125 bp  250 bp | \*14:59, 14:86, 14:96, 14:145, 14:153-14:154  \*14:01:01-14:01:05 | \*12:34 |
| **27** | 165 bp  220 bp | \*14:141  \*14:46 | **DRB3\*01:07, DRB3\*01:21, DRB3\*01:41, DRB3\*01:50, DRB3\*01:76, DRB3\*02:01-02:08, DRB3\*02:11, DRB3\*02:13-02:37, DRB3\*02:39-02:43, DRB3\*02:45-02:77, DRB3\*02:79-02:80N, DRB3\*02:82, DRB3\*02:84-02:92, DRB3\*02:94-02:99, DRB3\*02:101-02:103, DRB3\*02:105, DRB3\*02:107-02:114, DRB3\*02:116-02:118, DRB3\*02:120-02:130, DRB3\*02:132-02:145N, DRB3\*02:147-02:169, DRB3\*03:17**  **DRB3\*02:58** |
| **28** | 170 bp  215 bp | \*14:11:01:01-14:11:01:02, 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, 11:229, 11:270, 12:04, 12:49  \*03:92, 08:67, 12:22, 12:88 |
| **29** | 115 bp  130 bp  180 bp  220 bp | \*14:97, 14.221  \*14:60, 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, 11:249, 11:273, 11:278, 11:286, 13:106, 13:216, 13:266  \*03:153, 11:194:01, 13:95  \*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, 03:185, 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, 14:212 | \*03:01:02:01-03:01:02:02, 03:02:02, 03:05:03, 03:11:03, 03:13:02, 03:24, 03:27, 03:81, 03:130, 03:167, 13:61:01, 13:96:02, **DRB3\*01:08, DRB3\*01:46, DRB3\*01:52, DRB3\*01:71, DRB3\*02:06, DRB3\*02:20, DRB3\*03:10**  \*03:01:01:01-03:01:34, 03:03, 03:06-03:08, 03:10-03:11:01, 03:11:03-03:13:02, 03:15:01:01-03:16, 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, 03:52:02, 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, 03:132-03:153, 03:156N-03:166, 03:168-03:175, 03:177, 03:180-03:186, 04:211, 04:230, 11:16:01:01-11:16:01:02, 11:40, 11:58:01, 11:59, 11:83, 11:113, 11:115, 11:182, 11:280, 12:58, 13:01:01:01-13:01:33, 13:06, 13:09-13:10, 13:15, 13:18, 13:20:01:01-13:20:01:03, 13:27:01-13:28:02, 13:32, 13:35, 13:40, 13:42:01-13:43, 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, 13:117:01:01-13:117:01:02, 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, 13:258-13:263, 13:266-13:267, 13:270-13:274, 13:279, 13:281, 13:283, 13:287, 13:291, 13:294, 13:299-13:300, 13:303-13:305, 13:308-13:309, 13:311, 13:313, 15:32, 15:192, **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, 03:158, 13:32, 13:65, 13:93, 13:120, 13:139  \*03:01:02:01-03:01:02:02, 03:02:02, 03:05:03, 03:11:03, 03:13:02, 03:24, 03:27, 03:76, 03:81, 03:130, 03:167, 03:174N, 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\*01:52, DRB3\*01:71, DRB3\*02:06, DRB3\*02:20, DRB3\*03:10** |
| **35** | 250 bp  280 bp | \*14:04:01:01-14:04:09, 14:11:01:01-14:11:01:02, 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, 14:201, 14:205:01-14:206, 14:210Q, 14:220, 14:224, 14:229, 14:233  \*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, 08:94, 08:98-08:99, 11:67, 11:209, 11:229, 11:270, 12:01:01:01-12:15, 12:17-12:21, 12:23-12:38, 12:40-12:41, 12:43-12:56, 12:58-12:82, 12:84-12:92, 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, 03:167, 11:16:01:01-11:16:01:02, 11:20, 11:280, 12:58, 13:01:01:01-13:01:06, 13:01:08-13:02:09, 13:02:11-13:02:18, 13:06, 13:10, 13:15-13:16:01:02, 13:27:01-13:28:02, 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, 13:117:01:01-13:117:01:02, 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, 13:254-13:275, 13:280-13:283, 13:285, 13:287-13:294, 13:297-13:301, 13:303-13:306, 13:308-13:311, 13:313, 13:315**, DRB3\*01:08, DRB3\*01:46, DRB3\*01:52, DRB3\*01:71, DRB3\*03:10**  \*03:11:01, 03:97, 03:126, 03:177, 13:302 |
| **37** | 90 bp  175 bp | \*14:166N | \*03:08, 03:6+5, 03:140, 11:01:01:01, 11:01:01:03-11:01:27, 11:01:28?, 11:01:29-11:04:12, 11:04:14-11:04:22, 11:06:01-11:11:01, 11:11:03-11:21, 11:23:01-11:29:02, 11:31-11:66:02, 11:68-11:70, 11:72-11:103:02, 11:105-11:192, 11:194:01-11:208, 11:210-11:228, 11:230-11:260, 11:262-11:263, 11:265-11:269, 11:271-11:287N, 11:289-11:290 |
| **38** | 165 bp  215 bp | \*14:05:01:01-14:05:01:03, 14:05:03-14:05:05, 14:37, 14:43-14:45, 14:56, 14:91, 14:96, 14:100, 14:103, 14:127:01-14:127:02, 14:136, 14:161, 14:167, 14:187  \*14:37, 14:100 | \*03:35, 13:72  \*11:218, 13:72 |
| **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, 14.221  \*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, 11:165:01-11:165:02, 11:249, 11:273, 11:278, 11:286, 13:60, 13:84, 13:106, 13:216, 13:229, 13:266 |
| **43** | 65 bp  95 bp  200 bp  225 bp | \*14:107, 14:111, 14:137N, 14:152N  \*14:101, 14:178, 14:205:01  \*14:82, 14:95, 14:132  \*14:188N | \*03:01:17, 03:15:02, 03:97, 03:145  \*03:01:17, 03:15:02, 03:145 |
| **44** | 215 bp  280 bp | \*14:70, 14:83, 14:155  \*14:113 | \*15:03:01:01-15:03:05, 15:23, 15:54, 15:57, 15:94, 15:130, 15:137N, 15:142, 15:163N, 15:165, 15:178, 15:185  \*04:85 |
| **45** | 65 bp  190 bp  225 bp | \*14:98  \*14:45  \*14:127:01 | \*08:67, 11:27:01, 11:84:01, 11:124:01, 11:138, 12:22, 12:88, 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 | \*03:153, 13:95  \*03:157 |
| **47** | 75 bp  215 bp  275 bp | \*14:153, 14:184  \*14:163, 14:197N  \*14:114 | \*03:165 |

**4**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 |

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

|  |
| --- |
| **Alleles** |
| DRB1\*14:21, DRB1\*03:76, DRB1\*03:174N, DRB1\*13:178 |

Abbreviations

w: might be weakly amplified.

?: nucleotide sequence information not available for the primer matching sequence.