DRB1\*04 (101.114-24/03, -24u/03u) Lot No: 7R5 Expiry Date: 2027-02-01

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

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

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

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

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

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

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

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

|  |
| --- |
| PHOTO DOCUMENT |

**Gel Picture**





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 21, 22, 29, 31 and 34 may have tendencies of unspecific amplifications.

Primer mixes 14 and 31 have a tendency to giving rise to primer oligomer formation.

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\*04 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\*04 primer mixes have two or more product sizes:

|  |  |  |  |
| --- | --- | --- | --- |
| Primer Mix | Size of spec. PCR product | **Amplified DRB1\*04 alleles** | Other amplified  DRB alleles |
| **11** | 175 bp  220 bp | \*04:15, 04:61, 04:138, 04:145, 04:154, 04:170, 04:265, 04:291, 04:323, 04:339  \*04:22, 04:98:02, 04:283 | \*11:22 |
| **12** | 180 bp  265 bp | \*04:16, 04:180  \*04:23, 04:52, 04:151, 04:203, 04:207 |  |
| **13** | 170 bp  225 bp | \*04:46  \*04:12, 04:18, 04:25, 04:31, 04:54-04:55, 04:58, 04:86, 04:103, 04:126, 04:185, 04:191 |  |
| **15** | 175 bp  215 bp | \*04:123  \*04:34 | \*01:10 |
| **19** | 140 bp  210 bp | \*04:39  \*04:24, 04:69, 04:78, 04:101, 04:168, 04:251 | \*14:10:01:01-14:10:01:02, 14:143, 14:182 |
| **20** | 100 bp  175 bp  255 bp | \*04:63, 04:110, 04:161, 04:253, 04:264N  \*04:40  \*04:27 |  |
| **21** | 155 bp  210 bp | \*04:29  \*04:37, 04:58, 04:73:01-04:73:02, 04:105:01-04:105:02, 04:122, 04:132, 04:206, 04:284:01-04:284:02 |  |
| **23** | 135 bp  255 bp | \*04:33  \*04:201 |  |
| **25** | 125 bp  230 bp  260 bp | \*04:26  \*04:45  \*04:64 |  |
| **27** | 115 bp  265 bp | \*04:10:01-04:11:04, 04:11:06-04:12, 04:60, 04:67, 04:91, 04:126, 04:136, 04:147, 04:201, 04:203, 04:207, 04:219, 04:250, 04:303  \*04:49 | \*03:12, 03:158, 08:06:01:01-08:06:01:02, 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, 14:65, 14:78, 14:169-14:170, 15:12, **DRB5\*02:33** |
| **29** | 75 bp  270 bp | \*04:07:01:01-04:07:06, 04:17:01-04:17:02, 04:20, 04:69, 04:74:01-04:74:02, 04:92, 04:102, 04:129, 04:160, 04:170, 04:172, 04:197, 04:199, 04:209, 04:212N, 04:222, 04:246, 04:249, 04:256, 04:262-04:263, 04:269, 04:278, 04:315, 04:324, 04:337, 04:344, 04:351  \*04:19?-04:21?, 04:64, 04:192, 04:213 | \*01:17, 09:01:02:01-09:01:05, 09:01:08-09:02:02, 09:04-09:05, 09:07-09:08, 09:10-09:52N, 10:29, 11:283, 14:07:01-14:07:03, 14:14, 14:36, 14:42, 14:44:01-14:44:03, 14:51, 14:68:01-14:68:02, 14:93, 14:134, 14:143, 14:244, **DRB4\*01:60, DRB5\*01:12**  **DRB3\*02:84** |
| **31** | 85 bp  200 bp  260 bp | \*04:14, 04:106, 04:132  \*04:214N  \*04:64 | \*01:03:01:01-01:03:05, 01:39N, 01:89, 01:99, 01:102, 01:127, 07:138, 08:40, 08:92, 11:11:01, 11:11:03, 11:14:01:01-11:14:02, 11:20, 11:68, 11:73, 11:93, 11:122, 11:168, 11:184, 11:237, 13:02:01:01-13:02:03, 13:02:05-13:02:09, 13:02:11-13:03:12, 13:23:01-13:23:02, 13:29:01:01-13:29:01:02, 13:31, 13:33:01-13:34, 13:36-13:39, 13:41, 13:45, 13:63, 13:65-13:67, 13:73-13:74, 13:85, 13:88, 13:90, 13:95-13:97:02, 13:99, 13:101, 13:103-13:104, 13:107, 13:115, 13:120, 13:122-13:124, 13:126, 13:128, 13:135, 13:139, 13:143, 13:145, 13:147, 13:151-13:152, 13:155, 13:159, 13:165, 13:167-13:168, 13:170-13:172, 13:174, 13:179-13:180, 13:182, 13:188, 13:194-13:195, 13:198, 13:202, 13:207-13:212, 13:216,  13:219-13:220, 13:225, 13:227, 13:230, 13:236-13:237, 13:239-13:241, 13:243-13:244, 13:247, 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, 13:297-13:298N, 13:301, 13:306, 13:310N, 13:312, 13:316-13:320, 13:325, 13:329N, 13:331-13:332, **DRB3\*02:160** |
| **35** | 210 bp  245 bp | \*04:81N  \*04:51, 04:70, 04:260 |  |
| **36** | 120 bp  180 bp | \*04:96  \*04:71 | **\***03:149 |
| **38** | 140 bp  225 bp | \*04:89  \*04:73:01-04:73:02, 04:75, 04:105:01-04:105:02, 04:122, 04:178N, 04:284:01-04:284:02, 04:293 |  |
| **39** | 100 bp  175 bp | \*04:83  \*04:15, 04:61-04:62, 04:69, 04:138, 04:145-04:146, 04:154, 04:170, 04:235, 04:251, 04:265, 04:291, 04:323, 04:339 | \*11:22, 14:10:01:01-14:10:01:02, 14:57, 14:143, 14:182 |
| **40** | 145 bp  200 bp | \*04:30, 04:85  \*04:38:01:01-04:38:01:02, 04:56:01-04:56:02, 04:88, 04:100, 04:107, 04:125, 04:205, 04:344 |  |
| **41** | 165 bp  205 bp | \*04:76, 04:108  \*04:182 |  |
| **42** | 110 bp  140 bp | \*04:41, 04:77, 04:102, 04:113, 04:152, 04:164, 04:211, 04:225, 04:230, 04:250, 04:301  \*04:79 | \*14:10:01:01-14:10:01:02, 14:57, 14:143, 14:182 |
| **44** | 165 bp  240 bp | \*04:127  \*04:87, 04:94:01N, 04:120N, 04:129, 04:157N, 04:186N, 04:212N, 04:347 |  |
| **46** | 75 bp  200 bp | \*04:92, 04:274, 04:315, 04:342, 04:353  \*04:214N |  |
| **47** | 140 bp  250 bp | \*04:117  \*04:119N, 04:142N |  |

**4**The following DRB1\*04 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

|  |  |  |  |
| --- | --- | --- | --- |
| Alleles | Primer mix | Alleles | Primer mix |
| DRB1\*04:16, 04:151 | 12 | DRB1\*04:49, 04:219 | 27 |
| DRB1\*04:23, 04:180 | 12 | DRB1\*04:79, 04:211, 04:301 | 42 |
| DRB1\*04:27, 04:110 | 20 | DRB1\*04:89, 04:178N | 38 |
| DRB1\*04:39, 04:101 | 19 | DRB1\*04:117, 04:119N | 47 |

Abbreviations

w: might be weakly amplified.

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