DRB1\*13 (101.116-24/03, -24u/03u) Lot No: 9R5 Expiry Date: 2027-05-01

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

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

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

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

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

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

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

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

**Gel Picture**

|  |
| --- |
| PHOTO DOCUMENT |





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 20, 21, 26, 27, 44 and 55 may have tendencies of unspecific amplifications.

Primer mix 47 has a tendency to giving rise to primer oligomer formation.

Primer mix 26 may faintly amplify DRB1\*12:02 alleles.

Primer mix 58 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\*13 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 3.26.0, October 2016.

**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\*13 primer mixes have two or more product sizes:

|  |  |  |  |
| --- | --- | --- | --- |
| Primer Mix | Size of spec. PCR product | Amplified DRB1\*13 alleles | Other amplified DRB alleles |
| **18** | 110 bp 230 bp | \*13:87\*13:13, 13:18, 13:33:02-13:33:03, 13:47, 13:55, 13:61:01, 13:94:02, 13:96:02, 13:119, 13:144, 13:146, 13:154, 13:156, 13:158:01-13:158:02, 13:164, 13:232, 13:286, 13:331 | \*03:01:02:01-03:01:02:02, 03:02:02, 03:05:03, 03:11:03, 03:13:02, 03:17, 03:24, 03:27, 03:35, 03:81, 03:130, 03:157, 03:167, 03:188, 08:20, 11:07:02, 11:23:01-11:23:02, 11:25, 11:27:01, 11:45, 11:55, 11:64, 11:84:01, 11:119, 11:124:01, 11:136, 11:138, 14:03:01-14:03:02, 14:12:01-14:12:02, 14:27:01-14:27:02, 14:38:01, 14:40, 14:47, 14:55, 14:63, 14:67, 14:77-14:78, 14:84-14:85, 14:89, 14:98, 14:102, 14:115-14:116, 14:127:01, 14:135-14:136, 14:144, 14:156, 14:164-14:165, 14:173-14:174, 14:181, 14:218, 14:222N-14:223, 14:239, 14:244, **DRB3\*01:14** |
| **19** | 110 bp 205 bp 260 bp | \*13:87, 13:106, 13:216, 13:266\*13:74\*13:16:01:01-13:16:01:02 | \*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, 14:97, 14:221\*11:86 |
| **21** | 175 bp220 bp  | \*13:27:01-13:27:02, 13:41, 13:71, 13:176\*13:103, 13:160  | \*03:76, 03:125, 03:174N, 11:59 |
| **22** | 110 bp 175 bp280 bp | \*13:68\*13:31, 13:46, 13:54, 13:77, 13:100, 13:162, 13:180, 13:260, 13:330\*13:13?, 13:30?, 13:33:01?, 13:52?, 13:105 | \*11:24:01-11:24:02\*03:38, 03:79, 03:85, 03:96, 14:48, 14:174, 14:177, **DRB3\*01:14**\*03:12?, 11:26?, 11:40?, 11:100, 14:19?, 14:213 |
| **23** | 115 bp 245 bp | \*13:34, 13:64, 13:136, 13:174, 13:204, 13:221, 13:250\*13:01:03, 13:02:13, 13:28:01- 13:28:02, 13:76, 13:163, 13:193, 13:242:02 | \*03:43, 03:71:01, 11:76, 11:114, 11:183, 11:196, 11:302, 14:41, 14:77, 14:110, 14:218, **DRB3\*01:14**\*03:01:17, 03:15:02, 03:73, 03:97, 03:145, 11:01:05, 11:01:10, 11:04:03, 11:06:02, 11:13:01-11:13:02, 11:17, 11:52, 11:54:01, 11:159, 11:202, 11:283, 14:01:01:01-14:01:01:03, 14:01:03-14:01:05, 14:05:01:01-14:05:02, 14:05:04-14:05:05, 14:07:01-14:07:02, 14:08, 14:14, 14:18, 14:23:01:01-14:23:04, 14:26, 14:32:02-14:32:03, 14:34-14:36, 14:39, 14:42-14:44:01, 14:44:03-14:45, 14:54:01:01-14:56, 14:58-14:60, 14:62, 14:64-14:65, 14:70, 14:72, 14:82, 14:86-14:88, 14:90-14:92N, 14:95-14:97, 14:99-14:101, 14:104-14:105, 14:110-14:114, 14:117-14:118, 14:122-14:125, 14:127:02, 14:129-14:134, 14:137N, 14:139-14:140, 14:142, 14:146-14:147, 14:149-14:151, 14:153-14:155, 14:157-14:158, 14:160-14:163, 14:166N-14:169, 14:172-14:173, 14:178, 14:184-14:193, 14:197N, 14:202-14:204, 14:207, 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, 14:245-14:246, 14:248 |
| **24** | 145 bp 180 bp280 bp | \*13:35, 13:161, 13:185N\*13:39, 13:54, 13:77-13:79, 13:100, 13:162-13:163, 13:181\*13:13?, 13:30?, 13:33:01?, 13:45?, 13:52?, 13:166 | \*03:13:01-03:13:02, 03:38, 03:79, 03:88, 03:167, 11:116, 11:120, 14:48, 14:64, 14:109, 14:115, 14:177, **DRB3\*01:14**\*03:12?, 03:16?, 03:83, 11:26?, 11:40?, 14:19? |
| **25** | 110 bp140 bp | \*13:03:01:01-13:04, 13:07:01-13:08, 13:11:01-13:14:03, 13:19, 13:21:01:01-13:25, 13:30, 13:33:01-13:33:03, 13:37-13:38, 13:44-13:49:02, 13:52, 13:54-13:55, 13:57-13:58, 13:60, 13:66:01-13:66:02, 13:70, 13:72, 13:75-13:76, 13:81-13:84, 13:86, 13:88-13:90, 13:94:01-13:95, 13:97:01-13:97:02, 13:100-13:101, 13:107-13:108, 13:118, 13:122, 13:132-13:135, 13:149-13:150, 13:152, 13:154, 13:161-13:162, 13:164, 13:167, 13:169, 13:180, 13:182, 13:188, 13:194, 13:197, 13:206, 13:219, 13:224, 13:227-13:232, 13:246-13:247, 13:253, 13:276, 13:284, 13:286, 13:295N, 13:307, 13:314, 13:316-13:317, 13:319N, 13:321, 13:329N-13:330, 13:333, 13:335\*13:185N | \*03:04:01-03:04:02, 03:17, 03:21, 03:25:01-03:25:02, 03:30-03:31, 03:35, 03:40-03:41:02, 03:49, 03:75, 03:105, 03:118, 03:155, 08:20, 11:01:01:01, 11:01:01:03-11:01:27, 11:01:28?, 11:01:29-11:01:31, 11:01:33-11:04:22, 11:06:01-11:08:03, 11:10:01-11:11:01, 11:11:03-11:14:02, 11:17-11:19:03, 11:21, 11:23:01-11:23:02, 11:25-11:27:03, 11:29:01-11:29:02, 11:31-11:39, 11:41-11:43:01:02, 11:45-11:48, 11:51-11:57, 11:60-11:66:02, 11:68-11:70, 11:72-11:75, 11:77-11:82, 11:84:01-11:84:03, 11:86, 11:88-11:103:02, 11:105-11:112, 11:116-11:121, 11:123-11:126, 11:128-11:181, 11:184-11:192, 11:194:01-11:195, 11:197-11:208, 11:210-11:228, 11:230-11:248Q, 11:250N-11:258, 11:260, 11:262-11:269, 11:271-11:272Q, 11:274-11:277, 11:279, 11:281-11:285, 11:287N, 11:289-11:301N, 11:303N-11:308, 11:310-11:312, 14:01:01:01-14:01:05, 14:05:01:01-14:05:05, 14:07:01-14:08, 14:14, 14:16, 14:20, 14:22-14:23:04, 14:25:01-14:26, 14:32:01-14:32:03, 14:34-14:40, 14:42-14:45, 14:49, 14:53-14:56, 14:58, 14:60, 14:62, 14:65, 14:69-14:70, 14:72, 14:74-14:75, 14:82, 14:84, 14:86-14:88, 14:90-14:92N, 14:94, 14:96, 14:99-14:105, 14:111-14:114, 14:116-14:119, 14:122-14:125, 14:127:01-14:131, 14:136-14:137N, 14:139-14:140, 14:142, 14:146-14:147, 14:149-14:151, 14:153, 14:155-14:164, 14:166N, 14:168-14:169, 14:171-14:173, 14:178, 14:181, 14:183-14:193, 14:197N, 14:202-14:204, 14:207-14:208, 14:211, 14:213-14:217, 14:219, 14:225, 14:227, 14:230, 14:232, 14:234-14:238, 14:240, 14:243-14:245, 14:248 |
| **26** | 90 bp140 bp | \*13:150\*13:05:01:01-13:05:03, 13:18, 13:26:01-13:26:02, 13:42:01-13:42:02, 13:50:02-13:50:03, 13:63, 13:111, 13:132, 13:136, 13:144, 13:158:01-13:158:02, 13:189, 13:199, 13:203, 13:232, 13:277, 13:302 | \*11:39, 11:43:01:01-11:43:01:02, 11:50, 11:115, 11:145, 11:151, 11:168, 11:174, 16:73, **DRB3\*02:111**\*08:09:01-08:09:02, 08:21, 08:70, 08:87, 11:01:12, 11:04:04, 11:09:01:01-11:10:02, 11:12:02, 11:22, 11:28:02, 11:29:02, 11:40, 11:46:01, 11:58:01, 11:59, 11:62:02, 11:63:02, 11:83, 11:87, 11:113, 11:115, 11:122, 11:149, 11:165:02, 11:182, 11:189-11:190, 11:218, 11:264, 14:15, 14:22, 14:27:01-14:27:02, 14:73, 14:105, 16:01:01:02-16:01:01:03, 16:01:18, 16:72-16:73 |
| **31** | 145 bp 175 bp 205 bp | \*13:152, 13:204\*13:59\*13:72 |  |
| **34** | 145 bp210 bp 255 bp | \*13:80, 13:292\*13:178\*13:58, 13:81, 13:163, 13:242:01-13:242:02, 13:284 | \*03:16\*03:20, 03:145, 11:06:01-11:06:03, 11:21, 11:47, 11:57, 11:129, 11:174, 14:29, 14:99 |
| **35** | 150 bp280 bp | \*13:51\*13:13?, 13:30?, 13:33:01?, 13:52?, 13:105 | \*03:12?, 11:26?, 11:40?, 11:100, 14:19?, 14:213 |
| **36** | 75 bp 170 bp 260 bp | \*13:92\*13:90, 13:113N\*13:98 | \*11:177, 14:26\*11:233 |
| **39** | 80 bp 130 bp280 bp | \*13:102\*13:95\*13:13?, 13:30?, 13:33:01?, 13:52?, 13:166  | \*03:153, 14:158\*03:12?, 03:83, 11:26?, 11:40? |
| **40** | 90 bp 120 bp 160 bp | \*13:101\*13:91\*13:99, 13:113N | \*14:118 |
| **45** | 135 bp255 bp | \*13:148\*13:141, 13:147 | \*03:56, 11:160-11:161, 14:191, 14:239 |
| **46** | 135 bp205 bp260 bp | \*13:148\*13:137N, 13:142N \*13:147 |  |
| **53** | 150 bp195 bp | \*13:124\*13:187 | \*01:25, 10:40, 12:64, 15:93, **DRB5\*01:60** |
| **56** | 115 bp 210 bp 255 bp | \*13:34, 13:64, 13:136, 13:174, 13:204, 13:221, 13:250\*13:178\*13:28:01-13:28:02 | \*03:43, 03:71:01, 11:76, 11:114, 11:183, 11:196, 11:302, 14:41, 14:77, 14:110, 14:218, **DRB3\*01:14****\***03:73 |

**4**The following DRB1\*13 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

|  |  |
| --- | --- |
| Alleles | Primer mix |
| DRB1\*13:28:01-13:28:02, 13:221 | 23, 56 |
| DRB1\*13:80, 13:242:01 | 34 |
| DRB1\*13:92, 13:98 | 36 |

**5**The following alleles cannot be separated by the HLA-DRB1\*13 primer set. These alleles can be distinguished by the DR low resolution kit and/or the HLA- DRB1\*11 and DRB1\*14 high resolution kit.

|  |
| --- |
| Alleles |
| DRB1\*13:17, DRB1\*11:229, 11:270 |
| DRB1\*13:165, DRB1\*11:20 |
| DRB1\*13:193, DRB1\*14:95 |

Abbreviations

w: may be weakly amplified.

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