Gel Documentation Form and Worksheet

HLA-B\*51 (101.561-24/03, -24u/03u) Lot No: 6G5 Expiry Date: 2021-02-01

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 6, 25 and 30 may give rise to a lower yield of HLA-specific PCR product than the other HLA-B\*51 primer mixes.

Primer mixes 25, 30, 39, 41, 65, 66, 75 and 81 may have tendencies of unspecific amplifications.

Primer mixes 39, 58, 60 and 77 have a tendency to giving rise to primer oligomer formation.

Primer mix 85 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**HLA-B\*51 alleles in bold lettering are listed as confirmed alleles on the IMGT/HLA web page [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla), release 3.25.0, July 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 HLA-B\*51 primer mixes have two or more product sizes:

|  |  |  |  |
| --- | --- | --- | --- |
| Primer Mix | Size of spec. PCR product | Amplified HLA-C\*01 alleles | Other amplified HLA Class I alleles |
| **7** | 240 bp  270 bp | \*51:156  \*51:06:01-51:06:04, 51:45, 51:62, 51:64, 51:135, 51:194 | \*07:218, 07:220, 08:118, 14:01:01:01-14:09, 14:11-14:19, 14:21-14:36, 14:38-14:45, 14:47-14:61, 15:37-15:38:02, 15:185, 15:323, 15:335, 15:364, 15:368, 15:435, 18:01:01:01-18:09, 18:12:01-18:15, 18:17N-18:20, 18:23N-18:34, 18:36-18:38, 18:40-18:55, 18:57, 18:59-18:68, 18:70-18:88, 18:90-18:100, 18:102-18:104, 18:106-18:109, 18:111-18:145, 27:28, 27:62, 39:32, 39:43, 39:48, 40:51, 40:113, 40:163, 40:174, 56:31, 67:06, **C\*01:30,** **C\*06:207, C\*07:516, C\*07:521, C\*08:51, C\*08:114, C\*12:87, C\*14:76** |
| **10** | 160 bp  245 bp | \*51:01:09, 51:01:21, 51:01:25, 51:10, 51:24:02-51:24:04, 51:197, 51:217  \*51:21, 51:36, 51:101, 51:143, 51:153, 51:157, 51:197 | \*07:78, 07:84, 27:14, 27:81, 27:130, 40:06:01:01-40:06:04:02, 40:06:06-40:06:16, 40:44, 40:53, 40:70:01-40:70:02, 40:75, 40:83, 40:86, 40:93, 40:96, 40:103, 40:109-40:110, 40:127, 40:131, 40:148, 40:159, 40:161-40:162, 40:165, 40:167, 40:177, 40:190, 40:230, 40:244, 40:256N, 40:268-40:270, 40:275, 40:294-40:295, 40:298:01-40:298:02, 40:306-40:307, 40:311, 40:313, 40:317-40:318, 40:330, 40:340-40:342, 40:348-40:350, 40:354, 40:361N-40:364, 52:54, 54:11, 56:20:02, 73:01-73:02, **C\*05:152, C\*07:463**  **\***08:09, 08:84, 13:46, 13:53, 14:37, 15:42, 15:83, 35:60, 35:276, 39:06:01-39:06:05, 39:34, 39:57, 39:62, 39:64, 39:83, 39:90, 39:109, 39:127, 39:129, 39:132, 41:01:01-41:01:05, 41:05-41:07, 41:09, 41:12, 41:14, 41:16, 41:20-41:22, 41:25-41:26, 41:28-41:30, 41:32-41:35, 41:37, 41:44, 41:50, 41:53-41:54, 42:04, 45:08, 46:18, 50:45, 50:49, 52:37, 52:71, 54:01:01-54:02, 54:04-54:05N, 54:07-54:08N, 54:10-54:25, 54:27-54:32, 54:34-54:37, 55:01:01-55:01:06, 55:01:08-55:03, 55:05, 55:07, 55:10-55:13, 55:15-55:21, 55:23, 55:25-55:48, 55:50, 55:52-55:85, 55:87, 56:23, 56:54, 59:01:01:01-59:03, 59:05-59:08, 59:10N, 78:07, **C\*05:152, C\*07:463, C\*12:183, C\*14:92** |
| **15** | 100 bp  230 bp | \*51:14  \*51:19, 51:101 | \*35:276, 39:06:01-39:06:05, 39:57, 39:62, 39:64, 39:83, 39:90, 39:109, 39:127, 39:129,  39:132, 50:49, 52:71 |
| **16** | 170 bp  195 bp | \*51:15, 51:35, 51:62, 51:106:01-51:106:02, 51:223, 51:225  \*51:18 | \*13:03, 13:48, 15:73, 15:303, 35:291, 40:71, 44:10, 44:15:01:01-44:15:01:02, 44:18, 44:140, 45:01:01-45:01:03, 45:04-45:07, 45:11-45:21, 46:11, 49:01:01:01-49:01:07, 49:01:09-49:03, 49:06, 49:08-49:14, 49:16-49:17, 49:19N-49:49, 50:01:01:01-50:02, 50:04-50:08, 50:10-50:13, 50:15-50:19, 50:32, 50:34-50:38, 50:40-50:44, 50:46-50:48, 50:50-50:55, 52:25:01-52:25:02, 54:03, 54:33, 56:01:01:01-56:01:04, 56:01:06-56:02:02, 56:04:01-56:04:02, 56:07-56:08, 56:13-56:14, 56:16-56:17, 56:20:01-56:20:02, 56:24-56:30, 56:33-56:49, 56:51-56:53, 56:55:01:01-56:55:01:02, 58:73, 59:04, 82:01:01:01-82:03, **C\*03:19, C\*03:102,** **C\*15:15** |
| **18** | 140 bp  220 bp | \*51:28  \*51:08:01:01-51:08:02, 51:20, 51:36, 51:44N, 51:97, 51:141, 51:153 | \*08:09, 08:84, 13:46, 15:83, 41:01:01-41:01:05, 41:05-41:07, 41:09, 41:12, 41:14, 41:16-41:17, 41:20-41:22, 41:25-41:26, 41:28-41:30, 41:32-41:35, 41:37, 41:44, 41:50, 41:53-41:54, 42:04, 44:15:01:01-44:15:01:02, 44:18, 44:20, 44:100, 45:01:01-45:21, 52:19, 55:20, 55:56, 56:13 |
| **20** | 110 bp  200 bp | \*51:26  \*51:185 | \*52:09:01 |
| **21** | 130 bp  185 bp | \*51:38  \*51:27N | \*13:42 |
| **25** | 120 bp  175 bp  205 bp | \*51:38, 51:142  \*51:30  \*51:53 | \*13:42, 35:364  **C\*05:01:38**  \*52:29, 55:54 |
| **26** | 105 bp  155 bp | \*51:13:01-51:13:02, 51:37, 51:63:01-51:63:02, 51:92:01-51:92:02, 51:97, 51:172, 51:216  \*51:32 | \*13:04, 13:46, 13:72, 15:04:01:01-15:04:04, 15:16:01:01-15:16:03, 15:67, 15:95, 15:137, 15:155, 15:222, 15:254, 15:293, 15:310, 15:362, 15:408, 35:37, 35:235, 35:265, 35:276, 39:06:01-39:06:05, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 39:83, 39:90, 39:102, 39:109, 39:127, 39:129, 39:132, 40:86, 40:159, 40:330, 41:30, 41:50, 45:02, 45:09, 46:32, 49:04:01-49:05, 49:50, 50:09, 50:33, 52:14, 52:39, 52:75, 54:14, 55:13, 55:23, 55:32, 55:58, 55:68, 56:22, 56:50, 59:03, 73:01-73:02, **C\*05:152, C\*07:463, C\*12:183**  **\***27:69, 40:213, 58:52 |
| **27** | 205 bp  345 bp | \*51:33  \*51:39 | **\***44:165, 58:53  \*37:52, 44:24, 44:181, 81:06? |
| **28** | 205 bp  255 bp | \*51:33  \*51:23, 51:108 | \*44:165, 58:53  \*44:15:01:01-44:15:01:02, 44:18, 44:20, 44:47, 44:100, 44:197, 45:01:01-45:03, 45:05-45:07, 45:09, 45:11-45:21, 49:20, 50:02, 52:15 |
| **31** | 105 bp  225 bp | \*51:13:01-51:13:02, 51:37, 51:63:01-51:63:02, 51:92:01-51:92:02, 51:97, 51:172, 51:216  \*51:05, 51:29, 51:54, 51:61:01-51:61:02, 51:82, 51:197, 51:217 | \*13:04, 13:46, 13:72, 15:04:01:01-15:04:04, 15:16:01:01-15:16:03, 15:67, 15:95, 15:137,15:155, 15:222, 15:254, 15:293, 15:310, 15:362, 15:408, 35:37, 35:235, 35:265, 35:276, 39:06:01-39:06:05, 39:33-39:34, 39:50, 39:57, 39:62, 39:64, 39:83, 39:90, 39:102, 39:109, 39:127, 39:129, 39:132, 40:86, 40:159, 40:330, 41:30, 41:50, 45:02, 45:09, 46:32, 49:04:01-49:05, 49:50, 50:09, 50:33, 52:14, 52:39, 52:75, 54:14, 55:13, 55:23, 55:32, 55:58, 55:68, 56:22, 56:50, 59:03, 73:01-73:02, **C\*05:152,** **C\*07:463, C\*12:183**  \*07:78, 07:84, 13:18, 13:31, 13:41, 15:04:01:01-15:04:04, 15:137, 15:303, 35:265, 39:33,  40:161, 46:32, 49:41, 50:47, 52:21:01-52:21:02, 52:24, 54:10, 54:20, 54:33, 55:09, 55:21,  55:37, 55:52, 56:43, **C\*05:152, C\*12:183, C\*14:92** |
| **36** | 110 bp  215 bp | \*51:165  \*51:43 | \*14:61, 15:214, 18:81, 35:250, 40:150, 48:45, 57:29 |
| **37** | 165 bp  225 bp | \*51:44N  \*51:55 |  |
| **38** | 205 bp  250 bp | \*51:37, 51:45, 51:63:01-51:63:02, 51:97, 51:216  \*51:173Q | \*14:56, 15:38:01-15:38:02, 15:185, 15:335, 15:364, 15:368, 18:01:01:01-18:09, 18:12:01-18:15, 18:17N-18:20, 18:22-18:25, 18:27-18:34, 18:36-18:40, 18:42-18:55, 18:57, 18:59-18:60, 18:62-18:100, 18:102-18:109, 18:111-18:121, 18:123-18:145, 35:21, 35:24:01-35:24:02, 35:188, 35:190, 35:287, 39:43, 52:39, 53:02, 53:06, 53:28, 56:31, 57:14:01-57:14:02, 58:09, 58:76, **C\*06:207, C\*07:516, C\*07:521, C\*12:87, C\*14:76** |
| **41** | 225 bp  305 bp  380 bp | \*51:05, 51:29, 51:54, 51:61:01-51:61:02, 51:82, 51:197, 51:217  \*51:48, 51:166  \*51:169 | \*07:78, 07:84, 13:18, 13:31, 13:41, 15:04:01:01-15:04:04, 15:137, 15:303, 35:265, 39:33, 40:161, 46:32, 49:41, 50:47, 52:21:01-52:21:02, 52:24, 54:10, 54:20, 54:33, 55:09, 55:21, 55:37, 55:52, 56:43, **C\*05:152, C\*12:183, C\*14:92**  \*15:140, 15:367, 15:441, **C\*02:83, C\*08:24, C\*16:90** |
| **42** | 100 bp  135 bp | \*51:60  \*51:49 |  |
| **43** | 115 bp  215 bp | \*51:58  \*51:50 |  |
| **44** | 285 bp  385 bp | \*51:76, 51:166  \*51:51 | \*08:39, 15:140, 35:101:02, 35:195, 35:211, 44:185, 54:34  **C\*01:83w** |
| **45** | 145 bp  190 bp | \*51:178N  \*51:52 |  |
| **46** | 80 bp  170 bp | \*51:57  \*51:123 | \*07:206  \*55:59 |
| **48** | 95 bp  220 bp | \*51:37, 51:90, 51:92:01-51:92:02, 51:197, 51:216  \*51:61:01-51:61:02 | \*07:84, 13:04, 13:35, 13:72, 15:04:01:01-15:04:04, 15:16:01:01-15:16:03, 15:67, 15:95, 15:155, 15:222, 15:254, 15:293, 15:310, 15:362, 15:408, 35:37, 35:235, 35:265, 40:44, 40:159, 41:21, 44:20, 44:47, 44:100, 44:197, 45:09, 46:32, 49:04:01-49:05, 50:33, 50:39, 52:12, 52:26, 52:63, 52:75, 54:14-54:16, 55:23, 55:27, 55:46, 55:68, 56:50, **C\*07:463, C\*12:183**  **\***13:31, 13:41, 15:04:01:01-15:04:04, 15:137, 15:303, 35:265, 46:32, 50:47, 52:21:01-52:21:02, 54:33, 55:21, 56:43, **C\*12:183** |
| **51** | 85 bp  135 bp  215 bp | \*51:68  \*51:136  \*51:72 |  |
| **53** | 135 bp  165 bp  260 bp | \*51:136  \*51:71, 51:174:01-51:174:02  \*51:70 | \*13:105, 55:29  \*52:55 |
| **54** | 120 bp  250 bp | \*51:74  \*51:124, 51:156 | \*08:155, 35:46-35:47, 35:154, 35:207, 35:217, 35:257, 35:278, 40:07-40:08, 40:13, 40:68, 40:106, 40:162, 40:220, 40:232, 41:46, 44:232, 53:30 |
| **55** | 75 bp  200 bp | \*51:77  \*51:75 |  |
| **57** | 145 bp  210 bp | \*51:79, 51:178N  \*51:54, 51:78:01-51:78:02 | \*13:17, 13:33, 15:36, 15:89, 15:256, 15:339, 44:02:10, 44:34:01-44:34:02, 44:83, 44:225, 44:245, 44:269, 52:20, 53:09, 53:11-53:13, 53:31, 53:36, 53:38, 56:07, 59:08 |
| **59** | 120 bp  240 bp | \*51:83  \*51:88 |  |
| **60** | 85 bp  190 bp | \*51:94  \*51:84, 51:130 | \*49:12, 55:87 |
| **61** | 100 bp  210 bp | \*51:85, 51:192, 51:214  \*51:87, 51:115, 51:181 | \*27:14, 27:81, 44:20, 44:47, 44:100, 44:197, 50:20, 52:26  \*49:45, **C\*07:463** |
| **62** | 180 bp  250 bp | \*51:86, 51:132  \*51:95 | \*39:57, 50:55 |
| **63** | 70 bp  200 bp | \*51:91  \*51:146 | \*13:86, 35:02:01:01-35:02:07, 35:02:08w, 35:81, 35:83, 35:95, 35:129N, 35:146, 35:154, 35:162, 35:172, 35:182-35:184, 35:211, 35:220, 35:258, 35:270, 35:273, 35:285, 35:309, 35:311, 35:323, 35:335, 35:339, 35:357, 35:361, 35:366-35:367, 45:12, 50:36, 53:19, 53:36, 58:65 |
| **64** | 115 bp  170 bp | \*51:67  \*51:66, 51:89 | \*35:314 |
| **65** | 185 bp  215 bp | \*51:98N  \*51:103, 51:116, 51:151 | \*08:62, 18:07:01-18:07:02, 18:29, 18:79, 18:136, 27:23, 35:50, 35:84, 35:162, 35:217, 35:231, 35:280, 35:323, 37:21, 37:67, 40:07-40:08, 40:13, 40:68, 40:106, 40:162, 40:220, 40:232, 41:46 |
| **66** | 175 bp  210 bp | \*51:109, 51:132  \*51:120 |  |
| **67** | 110 bp  160 bp  230 bp | \*51:93, 51:122  \*51:231  \*51:100 |  |
| **68** | 160 bp  190 bp | \*51:134  \*51:105 | \*35:358 |
| **69** | 105 bp  225 bp | \*51:147  \*51:110N | **A\*02:01:33w, A\*23:01:14w** |
| **72** | 90 bp  145 bp  170 bp | \*51:118N  \*51:169  \*51:164 | \*39:46w, 44:118w |
| **73** | 170 bp  295 bp | \*51:127, 51:174:01-51:174:02  \*51:149N | \*13:105, 55:29, 55:43 |
| **76** | 175 bp  255 bp | \*51:168  \*51:152, 51:173Q |  |
| **81** | 185 bp  215 bp | \*51:98N  \*51:167 |  |
| **83** | 195 bp  215bp | \*51:35  \*51:17 |  |
| **84** | 140 bp  270 bp | \*51:126  \*51:04, 51:46,  51:56:01-51:56:03, 51:139, 51:227 | **C\*08:114**  \*14:10, 18:22, 18:69w, 18:105, 35:21, 35:24:01-35:24:02, 35:81, 35:96, 35:109, 35:157,  35:188, 35:190, 35:233, 35:287, 37:04:01w-37:04:02w, 40:28, 44:190, 44:203, 44:275, 53:02, 53:06, 53:28, 57:14:01-57:14:02, 58:09, 58:76, **C\*03:384, C\*15:39, C\*15:130** |

4The following HLA-B\*51 alleles can be distinguished by the different sizes of the specific PCR product:

|  |  |  |  |
| --- | --- | --- | --- |
| **Alleles** | **Primer mix** | **Alleles** | **Primer mix** |
| B\*51:26, 51:185 | 20 | B\*51:74, 51:124 | 54 |
| B\*51:30, 51:142 | 25 | B\*51:75, 51:77 | 55 |
| B\*51:57, 51:123 | 46 | B\*51:83, 51:88 | 59 |
| B\*51:66, 51:67 | 64 | B\*51:84, 51:94 | 60 |
| B\*51:68, 51:72 | 51 | B\*51:86, 51:95 | 62 |
| B\*51:70, 51:71 | 53 | B\*51:127, 51:149N | 73 |

**5**The B\*51:119, 51:176, 51:179, 51:218, 51:226 and the B\*52:06:03 alleles will give rise to identical amplification patterns. These alleles can e.g. be distinguished by the HLA-B low resolution kit and/or the HLA-B\*52 high resolution kit.

The B\*51:220 and the B\*53:01:13 alleles will give rise to identical amplification patterns. These alleles can e.g. be distinguished by the HLA-B low resolution kit and/or the HLA-B\*53 high resolution kit.

‘w’, might be weakly amplified.

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