HLA-B\*56 (101.571-06/06u) Lot No: 1R6 Expiry Date: 2026-09-01

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 mix 7 and 18 may give rise to a lower yield of HLA-specific PCR product than the other B\*56 primer mixes.

Primer mixes 8, 10, 13, 17, 20 and 21 may have tendencies of unspecific amplifications.

Primer mixes 1, 9, 13 and 14 have a tendency to giving rise to primer oligomer formation.

Primer mix 6 may give rise to an unspecific amplification product of approx. 670 bp in some HLA-B alleles. This band should be disregarded in the interpretation of HLA-B\*56 typings.

Primer mix 24 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**HLA-B\*56 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 3.33.0, July 2018.

**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\*56 primer mixes have two or more product sizes:

|  |  |  |  |
| --- | --- | --- | --- |
| Primer Mix | Size of spec. PCR product | Amplified HLA-B\*56 alleles | Other amplified HLA Class I alleles |
|  **5** | 175 bp285 bp390 bp | \*56:40\*56:03\*56:08, 56:14  | \*13:125, 18:163, 35:559, 40:10:02, 54:01:02, 54:01:09, 55:35 |
|  **6** | 105 bp 150 bp | \*56:05:01\*56:32  | \*07:206, 08:26:03, 08:56:03, 18:125, 27:05:18:01-27:05:18:02, 39:63, 51:267\*07:09:01w-07:09:02w, 07:11w, 07:162w, 07:237w, 07:255w, 15:03:01:01-15:03:13, 15:16:01:01-15:16:05, 15:18:01:01-15:18:10, 15:23, 15:29:01:01-15:29:01:02, 15:39:01:01-15:40:02, 15:47:01w-15:47:02w, 15:49w, 15:61-15:62, 15:64:01-15:64:02, 15:65w, 15:67, 15:69, 15:72, 15:74, 15:80, 15:93, 15:95, 15:98, 15:103, 15:108, 15:115, 15:119, 15:127, 15:131-15:132, 15:134, 15:138, 15:153, 15:158, 15:161, 15:173, 15:176, 15:194-15:195, 15:197:01-15:198, 15:210, 15:220:01:01-15:220:02, 15:220:04, 15:221w, 15:223, 15:226N, 15:238, 15:242:01-15:242:02, 15:254-15:255, 15:263, 15:266, 15:268, 15:274, 15:281-15:282, 15:288, 15:290, 15:292-15:294N, 15:306-15:307, 15:310-15:311, 15:314, 15:335, 15:337, 15:351, 15:354, 15:362, 15:364, 15:369, 15:376, 15:379w, 15:380N, 15:382, 15:388-15:389, 15:397, 15:402, 15:408, 15:414, 15:426, 15:433-15:434, 15:436, 15:444, 15:447-15:448, 15:451, 15:475, 15:487N, 15:494, 15:497, 15:502, 15:504, 15:508-15:509, 15:511, 15:517, 15:519w, 15:526-15:527, 15:548, 15:550, 15:560, 15:570-15:571, 15:573, 15:582, 15:588, 15:602, 15:607, 15:610, 15:612, 15:614:01:01-15:614:01:02, 15:616Q-15:617, 15:626, 18:15, 18:21w, 18:30w, 18:57:01-18:57:02, 18:101, 18:152, 35:11:01-35:11:02, 35:11:03w, 35:21, 35:58, 35:99w, 35:188, 35:232w, 35:277, 35:337:01w-35:337:02w, 35:439:01:01-35:439:01:02, 35:519, 46:03w, 46:08, 46:62w, 46:83, 46:93, 48:25, 49:04:01-49:04:02, 51:37, 51:45, 53:06, 53:08:01-53:08:02, 53:28, 55:14, 55:68, 57:13w, 57:22, 58:06, 58:19, 58:46, 58:91, **C\*01:102w, C\*03:175, C\*03:199, C\*03:245, C\*05:215w, C\*08:113, C\*15:09:01:01-15:09:02, C\*15:19, C\*15:27, C\*15:61, C\*15:107, C\*15:126, C\*15:143w, C\*15:194** |
|  **7** | 120 bp 170 bp | \*56:05:01-56:06, 56:21\*56:33 | \*13:62, 27:153, 40:06:30, 40:95, 44:459, 49:18:01, 50:01:21, 50:14, 51:01:01:01-51:01:03, 51:01:05-51:01:12, 51:01:14-51:02:03, 51:02:05-51:03, 51:05:01:01-51:05:01:02, 51:07:01-51:08:04, 51:08:06-51:09:03, 51:11N-51:12, 51:13:02-51:14, 51:16-51:23, 51:24:03-51:24:05, 51:26-51:37, 51:39-51:41N, 51:43-51:44N, 51:48-51:55, 51:57-51:58, 51:60-51:61:02, 51:63:01, 51:65-51:80, 51:82-51:91, 51:92:02-51:106:01, 51:107-51:134, 51:136-51:138, 51:140-51:147, 51:149N-51:156, 51:158:01-51:193:02, 51:195-51:196, 51:198, 51:200-51:212, 51:214-51:219, 51:221-51:224, 51:226, 51:228-51:280, 51:282-51:292, 51:294, 51:296-51:299, 51:301-51:309, 51:311-51:318N, 51:320-51:326, 51:328-51:337, 51:339-51:340, 51:342-51:351, 51:354-51:357N, 51:360-51:374, 52:01:01:01-52:01:04, 52:01:06-52:01:14, 52:01:16-52:13, 52:14:02-52:24, 52:25:02-52:87, 52:89N-52:96N, 52:98-52:109, 55:01:04, 55:02:11, 55:28:02, 58:08:01-58:08:02, 78:01:01:02-78:10, **C\*14:92**\*14:54, 15:21:01:01-15:21:01:02, 15:44, 15:66, 15:189:01-15:189:02, 15:394, 15:404, 15:420, 15:504, 15:615, 15:623, 35:26, 35:82, 35:85, 35:135, 35:294, 38:28, 39:135, 59:08 |
|  **9** | 145 bp 205 bp | \*56:07 \*56:31  | \*07:149, 07:453, 08:02, 08:117, 08:255, 08:271, 13:97, 15:115, 27:01, 27:142, 38:02:01:01-38:02:06, 38:02:08-38:04, 38:08, 38:15, 38:18, 38:23, 38:29, 38:35, 38:43-38:50, 38:62, 38:64, 38:72, 38:74-38:76, 38:79, 38:82, 38:84-38:85, 38:89, 38:92, 38:97-38:98, 38:160, 38:162-38:165N, 38:167, 38:172-38:173Q, 44:40, 44:44, 44:130, 44:156, 44:210:01-44:210:02, 59:08\*14:56, 15:38:01-15:38:02, 15:185, 15:335, 15:364, 15:368, 15:610, 18:01:01:01-18:01:13, 18:01:15-18:01:49, 18:01:51-18:09, 18:12:01-18:15, 18:17N-18:19, 18:22-18:25, 18:27-18:34, 18:36-18:40, 18:42-18:55, 18:57:01-18:57:02, 18:59-18:60, 18:62-18:96, 18:98:01-18:100, 18:102-18:109, 18:111-18:121, 18:123-18:147, 18:149-18:163, 18:167, 18:169-18:188, 18:190, 18:192-18:198, 18:200-18:204, 18:206-18:212, 18:214-18:216, 18:218-18:224, 35:21, 35:24:01-35:24:02, 35:188, 35:190, 35:287, 35:519, 39:43, 51:37, 51:45, 53:02, 53:06, 53:28, 57:14:01-57:14:02, 58:09, 58:76 |
| **12** | 150 bp 180 bp | \*56:25, 56:37, 56:66\*56:10, 56:23, 56:54, 56:66 | \*07:78, 13:16, 13:20, 13:31w, 13:48, 13:128, 13:131w, 13:145w, 15:42, 15:73:01:01w-15:73:01:02w, 15:303w, 15:486w, 51:62, 51:106:01-51:106:02, 51:225, 51:300, 52:25:01-52:25:02, 54:20, 54:33w, 55:01:01:01-55:01:29, 55:03, 55:05, 55:09, 55:11, 55:15, 55:21w, 55:24-55:25, 55:29, 55:31, 55:33, 55:36, 55:38, 55:40, 55:44-55:45, 55:52-55:55N, 55:59-55:60, 55:64, 55:66, 55:73-55:76, 55:78-55:79, 55:84-55:85, 55:87, 55:90-55:95, 55:97N-55:106, 55:108-55:109, 55:111, 55:113-55:116, 55:118N-55:119, 55:121-55:122, 55:124-55:127, 59:12, **C\*01:90, C\*15:128**\*13:06, 13:53, 13:131, 15:42, 15:86, 15:224, 15:485, 18:191, 35:60, 46:18, 51:157, 51:300, 54:01:01:01-54:02, 54:05N, 54:07-54:08N, 54:10, 54:12-54:13, 54:17-54:25, 54:27-54:32, 54:34-54:39, 54:41, 54:43-54:46, 55:01:01:01-55:03, 55:05, 55:07, 55:10-55:12, 55:15-55:16, 55:18-55:19, 55:21, 55:25-55:26, 55:29-55:31, 55:33-55:40, 55:42-55:45, 55:47-55:48, 55:50, 55:52-55:57, 55:59-55:67, 55:69-55:80, 55:82-55:85, 55:87-55:109, 55:111-55:129, 59:01:01:01-59:01:01:02, 59:05-59:08, 59:10N, **C\*01:90, C\*15:128** |
| **13** | 70 bp180 bp | \*56:30\*56:11, 56:22  | \*44:174\*15:58, 15:133, 15:229, 15:253, 15:460, 15:488, 35:03:01:01-35:03:05, 35:03:07-35:03:35, 35:06, 35:13, 35:36, 35:38, 35:55-35:56, 35:59:01-35:59:02, 35:70, 35:74-35:75, 35:84-35:85, 35:98, 35:106, 35:109, 35:127-35:128, 35:136, 35:150:01-35:153, 35:155-35:156, 35:160, 35:163, 35:167, 35:169, 35:179, 35:181, 35:193, 35:195, 35:198, 35:204-35:205:03, 35:221, 35:223, 35:231, 35:235-35:237, 35:242-35:243, 35:246, 35:256-35:257, 35:261, 35:267, 35:274, 35:278-35:279, 35:281-35:282, 35:290, 35:296, 35:298, 35:312, 35:320, 35:326, 35:329, 35:344, 35:349, 35:354-35:355, 35:358, 35:360, 35:362, 35:364, 35:371, 35:381N, 35:394-35:395, 35:397-35:399, 35:413, 35:415, 35:420, 35:422-35:424, 35:434-35:436, 35:438, 35:440, 35:442, 35:450-35:452, 35:455, 35:457, 35:469, 35:478, 35:482, 35:486, 35:489, 35:496, 35:507N, 35:510-35:511, 35:521, 35:527, 35:540, 35:543-35:544, 35:547, 35:554, 35:561, 37:48, 37:97, 38:30, 38:65, 39:32-39:33, 39:74, 44:251, 46:61, 49:50, 51:13:01-51:13:02, 51:92:01-51:92:02, 51:172, 52:14:01-52:14:02, 52:75, 53:04, 53:31, 53:33, 57:76, 57:118, 58:34 |
| **15** | 160 bp385 bp | \*56:13 \*56:08, 56:14, 56:28N  | \*13:154, 35:545, 44:15:01:01-44:15:01:02, 44:18:01:01-44:18:01:02, 44:140, 44:355, 45:01:01:01-45:01:12, 45:04-45:08, 45:10-45:25, 45:27-45:28N, 45:30, 55:56, 82:01:01:01-82:04\*35:186 |
| **17** | 80 bp 180 bp | \*56:38N\*56:05:01-56:06, 56:15, 56:21 | \*07:20, 07:24, 07:60, 07:100, 07:131, 07:220, 07:223, 07:358, 07:464, 08:21, 08:25, 08:175, 13:62, 13:86, 15:09:01-15:10:08, 15:30:01:01-15:30:01:03, 15:37, 15:45, 15:48, 15:63, 15:90, 15:99, 15:150, 15:243, 15:248, 15:287, 15:312-15:313, 15:324, 15:329, 15:338, 15:361, 15:427, 15:435, 15:439, 15:445, 15:455, 15:503, 15:506, 15:530, 15:541, 15:563, 15:611, 15:620, 27:76, 27:153, 35:02:01:01-35:02:19, 35:04:01:01-35:04:03, 35:09:01:01-35:09:04, 35:12:01:01-35:12:04, 35:18, 35:22:01:01-35:22:01:02, 35:34, 35:39, 35:44, 35:81, 35:83, 35:95, 35:129N, 35:149, 35:154, 35:162, 35:172, 35:182-35:184, 35:199, 35:201, 35:211, 35:220, 35:233, 35:251:01-35:251:02, 35:258, 35:266, 35:270, 35:273, 35:285, 35:292, 35:309, 35:311, 35:316, 35:321, 35:323:01-35:323:02, 35:335, 35:339, 35:357, 35:361, 35:366-35:367, 35:372, 35:374, 35:377-35:379, 35:384, 35:387, 35:391, 35:396, 35:403, 35:407, 35:410, 35:419, 35:425, 35:443, 35:463, 35:474, 35:477, 35:483, 35:487, 35:492, 35:501, 35:505, 35:508N, 35:522, 35:535, 35:539, 35:550, 35:553, 35:555, 35:557, 35:562, 40:05:01:01-40:05:02, 40:26, 40:28, 40:63, 40:92, 40:174, 40:324, 40:343, 40:496, 41:17, 41:62, 44:62, 44:77, 44:82, 44:107, 44:123, 44:184, 44:213, 44:459, 45:29, 46:74, 46:81, 49:18:01-49:18:02, 50:14, 51:01:01:01-51:01:14, 51:01:16-51:01:31, 51:01:33-51:01:38, 51:01:40-51:01:58, 51:01:60-51:09:03, 51:11N-51:12, 51:18-51:20, 51:22-51:24:05, 51:26-51:30, 51:32-51:33, 51:35, 51:38-51:41N, 51:43-51:44N, 51:46, 51:48-51:61:02, 51:64-51:80, 51:83-51:84, 51:86-51:91, 51:94-51:96, 51:98N-51:100, 51:102-51:105, 51:107-51:142, 51:145-51:152, 51:154-51:156, 51:158:01-51:171, 51:173Q-51:181, 51:183-51:191, 51:193:01-51:196, 51:198-51:213, 51:215, 51:217-51:219, 51:221-51:222, 51:224, 51:226, 51:228-51:250, 51:252-51:260, 51:262-51:273N, 51:275-51:279, 51:282-51:294, 51:296-51:297, 51:299, 51:301-51:318N, 51:320-51:339, 51:341-51:351, 51:353-51:358, 51:360-51:374, 52:01:01:01-52:01:20, 52:01:22-52:07:02, 52:09:01-52:13, 52:15-52:24, 52:27-52:36, 52:38, 52:40-52:61, 52:64-52:66, 52:68-52:70, 52:72-52:74, 52:76-52:83, 52:85-52:87, 52:89N-52:96N, 52:98-52:109, 53:19, 53:36, 53:42, 55:08, 55:51, 57:02:01:01-57:03:05, 57:05, 57:07, 57:09, 57:12, 57:17, 57:28N, 57:39, 57:42, 57:46, 57:57, 57:63, 57:66, 57:70, 57:80, 57:82, 57:84, 57:94, 57:96, 57:101, 57:124, 57:137, 57:155, 58:08:01-58:08:02, 58:28:01-58:28:02, 58:65, 78:01:01:02-78:06, 78:09-78:10, **C\*03:81, C\*03:152, C\*03:317, C\*03:382, C\*03:388, C\*03:526** |
| **18** | 65 bp295 bp405 bp | \*56:55:01:02\*56:16 \*56:28N | \*38:02:08, 38:167, 40:149, 41:22, 49:25, 50:77, 54:21, 55:10, 57:58, 57:80, 67:06?-67:07?, 82:01:01:01-82:04 |
| **19** | 75 bp 185 bp | \*56:29\*56:19N  | \*07:176, 07:438**\***39:40:01N-39:40:02N |
| **21** | 115 bp 170 bp | \*56:17, 56:23, 56:42, 56:44, 56:54\*56:26 | \*07:16, 07:37:01-07:37:02, 07:50, 07:75:01:01-07:75:01:02, 07:91, 07:207, 07:228:01-07:228:02, 07:306, 08:23, 08:54:01-08:54:02, 08:110, 08:265, 08:295, 14:14, 14:18, 14:73, 15:03:01:01-15:03:09, 15:03:11-15:03:13, 15:09:01-15:10:08, 15:18:01:01-15:18:10, 15:29:01:01-15:29:01:02, 15:37, 15:47:01-15:47:02, 15:49, 15:51-15:52, 15:54, 15:62, 15:64:01-15:64:02, 15:68-15:69, 15:72, 15:74, 15:80, 15:90-15:91, 15:93, 15:98-15:99, 15:103, 15:108, 15:114, 15:123-15:124, 15:127, 15:131-15:134, 15:151, 15:153, 15:156, 15:158, 15:161, 15:173, 15:176, 15:186, 15:197:01-15:198, 15:200, 15:210, 15:220:01:01-15:221, 15:226N, 15:229, 15:235, 15:238, 15:242:01-15:243, 15:252-15:253, 15:259, 15:263, 15:266, 15:274-15:275:02, 15:281-15:282, 15:290, 15:292-15:293, 15:306-15:307, 15:311-15:314, 15:323, 15:329, 15:335, 15:337-15:338, 15:351, 15:354, 15:369, 15:379-15:380N, 15:382, 15:388-15:389, 15:414, 15:426-15:427, 15:433, 15:435, 15:439, 15:444-15:445, 15:447-15:448, 15:451, 15:455, 15:475, 15:487N, 15:498, 15:502-15:504, 15:506, 15:509, 15:511, 15:517, 15:526-15:527, 15:530, 15:539, 15:548, 15:560, 15:570-15:571, 15:573, 15:582, 15:588, 15:607, 15:610-15:611, 15:614:01:01-15:614:01:02, 15:616Q-15:617, 15:620, 15:628, 18:37:01-18:37:02, 18:125, 27:18, 27:23, 27:44, 27:77, 27:129, 27:131, 27:204:01:01-27:204:01:02, 27:257, 35:25-35:26, 35:49:01-35:49:02, 35:361, 38:67, 39:05:01:01-39:05:05, 39:07-39:08, 39:11, 39:13:01-39:13:02, 39:20, 39:37:01:01-39:37:01:02, 39:49, 39:55-39:56, 39:113, 39:118, 39:147N, 39:149, 39:154, 39:161N, 39:163, 39:165-39:168, 39:170, 39:172, 39:174, 40:12:01-40:12:02, 40:46, 40:93, 40:430, 42:11, 48:01:01:01-48:40, 48:42-48:47, 48:49-48:54, 50:75, 55:18, 55:31, 55:78, 81:08 |
| **22** | 105 bp 175 bp270 bp | \*56:06, 56:45\*56:18, 56:31-56:32, 56:36\*56:01:01:05S | \*07:65, 07:134, 35:76, 35:561\*07:177, 08:37, 08:89, 08:107, 08:291, 14:56, 15:50, 15:69, 15:93, 15:186, 15:199, 15:348, 15:368, 15:449, 15:494, 15:497, 18:01:01:01-18:01:13, 18:01:15-18:01:17, 18:01:19-18:09, 18:11-18:15, 18:17N-18:19, 18:22-18:25, 18:27-18:34, 18:37:01-18:40, 18:42-18:49, 18:51-18:55, 18:59-18:60, 18:62-18:85, 18:87-18:96, 18:98:01-18:100, 18:102-18:105, 18:107-18:121, 18:123-18:147, 18:149-18:163, 18:167, 18:170-18:188, 18:190, 18:192-18:198, 18:200-18:204, 18:206-18:212, 18:214-18:216, 18:218-18:224, 27:157, 35:35, 35:93, 35:188, 35:190, 35:262, 35:277, 35:343, 37:35, 37:56, 38:52, 38:88, 39:07, 39:43, 39:91, 40:166, 41:51, 42:09, 44:90, 44:356, 45:06, 46:03, 46:21:01-46:21:02, 46:29, 46:83, 53:69, 54:09, 54:14, 55:14, 55:23, 55:68, 57:26, 58:05, 58:35, 58:76, 58:84, **C\*01:102, C\*05:215, C\*06:89, C\*07:123:01-07:123:02, C\*07:173, C\*07:294, C\*08:113, C\*12:113, C\*15:09:01:01-15:09:02, C\*15:19, C\*15:27, C\*15:61, C\*15:107, C\*15:126, C\*15:143, C\*15:194, C\*16:20, C\*16:109** |
| **23** | 85 bp 350 bp | \*56:20:01-56:20:02\*56:24 | \*07:78, 13:166, 40:48, 40:377, 45:27, 49:40, 50:60, **C\*01:90, C\*07:536, C\*08:207, C\*15:91, C\*15:128** |

**4**The following HLA-B\*56 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

|  |  |  |  |
| --- | --- | --- | --- |
| **Alleles** | **Primer mix** | **Alleles** | **Primer mix** |
| B\*56:01:01:05S, 56:45 | 22 | B\*56:18, 07:65 | 22 |
| B\*56:16, 56:55:01:02 | 18 | B\*56:19N, 56:29 | 19 |
| B\*56:17, 56:26 | 21 |

**5**The HLA-B\*56 primer set cannot separate the following alleles. These alleles can be distinguished by the HLA-B low resolution kit and/or the respective high resolution kits:

|  |
| --- |
| Alleles |
| B\*56:01:13, 13:54, 55:22, 55:41, 55:46 |
| B\*56:01:14, 54:03, 54:40 |
| B\*56:09, 56:60, 35:78 |
| B\*56:21, 51:272 |
| B\*56:23, 55:31, 55:78 |
| B\*56:42, 56:44, 50:75 |
| B\*56:50, 55:13, 55:27-55:28:01, 55:32, 55:58, 55:81 |
| B\*56:54, 55:18 |
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‘w’, may be weakly amplified.

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