Gel Documentation Form and Worksheet

DPB1

(101.311-24/04 – 24u/04u) Lot No: 9D9 Expiry Date: 2019-02-01

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 3, 9, 27, 40, 43 and 47 may give rise to a lower yield of HLA-specific PCR product than the other DPB1 primer mixes.

Primer mixes 26, 41, 43 and 80 have a tendency to giving rise to primer oligomer formation.

Primer mixes 12, 15, 23, 25, 27, 32, 41, 42, 44, 45, 49, 62, 68, 69, 77, 79 and 93 may have tendencies of unspecific amplifications.

Primer mix 96 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**DPB1 alleles listed on the IMGT/HLA web page 2016-January-19, release 3.23.0, [www.ebi.ac.uk/imgt/hla](http://www.ebi.ac.uk/imgt/hla).

**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**Primer mix 11: Specific PCR fragment of 145 bp in the DPB1\*69:01, 136:01, 207:01 and 458:01 alleles. Specific PCR fragment of 185 bp in the DPB1\*02:01:02-02:01:18, 04:01:01:01-04:01:06, 04:01:08-04:01:10, 04:01:12-04:02:08, 23:01:01-23:01:02, 24:01, 32:01, 33:01, 41:01:01-41:01:02, 46:01:01-46:01:02, 47:01, 51:01, 59:01, 60:01, 66:01, 71:01, 72:01, 73:01, 75:01, 77:01, 80:01, 81:01, 82:01, 83:01, 86:01, 94:01, 99:01, 105:01, 108:01, 109:01, 113:01, 115:01, 119:01, 120:01N, 121:01, 123:01, 126:01, 128:01, 129:01, 134:01, 138:01, 141:01, 143:01, 144:01, 145:01, 146:01, 149:01, 151:01, 153:01, 154:01N, 155:01:01-155:01:02, 163:01, 164:01, 169:01, 174:01, 175:01, 176:01, 177:01, 178:01, 180:01, 181:01, 183:01, 185:01, 186:01, 187:01, 188:01, 189:01, 190:01, 191:01, 192:01, 193:01, 194:01, 195:01, 196:01, 199:01, 200:01, 210:01, 211:01, 212:01, 213:01, 214:01, 215:01, 216:01N, 217:01, 218:01N, 219:01, 224:01, 225:01, 227:01, 228:01, 229:01, 231:01, 232:01, 233:01, 235:01, 236:01:01-236:01:02, 237:01, 238:01, 239:01, 240:01, 252:01, 253:01, 254:01, 255:01, 256:01, 257:01, 258:01, 260:01, 261:01, 262:01, 263:01, 271:01, 272:01, 273:01, 275:01, 276:01, 278:01, 281:01, 282:01, 283:01, 286:01, 294:01, 297:01, 298:01, 302:01, 306:01, 307:01, 308:01, 310:01, 311:01, 318:01, 319:01, 320:01, 321:01, 323:01, 334:01, 335:01, 336:01, 338:01, 339:01, 341:01, 342:01, 344:01, 350:01, 352:01, 355:01, 356:01, 357:01N, 359:01, 360:01, 364:01, 365:01, 366:01, 367:01, 368:01, 369:01, 372:01, 373:01, 374:01, 375:01, 376:01, 377:01, 378:01, 380:01, 381:01, 382:01N, 392:01, 396:01, 397:01, 399:01, 401:01N, 402:01, 414:01, 415:01, 416:01, 418:01, 419:01, 420:01, 421:01, 423:01, 424:01, 425:01, 426:01, 427:01, 428:01, 429:01, 430:01, 432:01, 433:01, 434:01, 435:01, 443:01, 444:01, 451:01, 452:01, 453:01, 455:01N, 456:01, 457:01, 459:01, 461:01, 463:01, 464:01, 465:01, 468:01, 469:01, 475:01, 476:01, 477:01, 479:01, 485:01, 486:01, 487:01, 488:01, 489:01, 494:01, 497:01, 500:01, 501:01, 502:01, 508:01, 510:01, 511:01, 520:01, 521:01, 522:01, 523:01, 524:01, 525:01, 528:01, 529:01 and 534:01 alleles. Specific PCR fragment of 145 bp and 185 bp in the DPB1\*179:01, 303:01, 309:01 and 322:01 alleles.

Primer mix 14: Specific PCR fragment of 105 bp in the DPB1\*02:02, 05:01:01-05:01:02, 05:01:04-05:01:07, 22:01, 38:01, 97:01, 100:01, 101:01, 135:01, 140:01, 170:01, 171:01, 223:01, 226:01, 300:01, 301:01, 317:01, 330:01, 331:01, 395:01, 406:01, 473:01, 478:01, 495:01 and 496:01 alleles. Specific PCR fragment of 175 bp in the DPB1\*30:01, 54:01, 390:01 and 408:01 alleles. Specific PCR fragments of 105 bp and 175 bp in the DPB1\*21:01, 36:01 and 114:01 alleles.

Primer mix 16: Specific PCR fragment of 80 bp in the DPB1\*03:01:01-03:01:08, 04:02:01:01-04:02:08, 14:01:01-14:01:03, 18:01, 20:01:01-20:01:03, 25:01, 28:01, 35:01:01-35:01:02, 45:01, 49:01, 50:01, 51:01, 53:01, 57:01, 59:01, 60:01, 61:01N, 68:01, 70:01, 73:01, 75:01, 76:01, 77:01, 78:01, 79:01, 80:01, 82:01, 83:01, 91:01, 92:01, 98:01, 104:01, 105:01, 108:01, 111:01, 116:01, 119:01, 122:01, 124:01, 129:01, 130:01, 132:01, 143:01, 144:01, 153:01, 164:01, 183:01, 184:01, 185:01, 197:01, 203:01, 210:01, 214:01, 219:01, 221:01, 222:01, 242:01, 243:01, 248:01, 252:01, 256:01, 257:01, 259:01, 260:01, 263:01, 270:01, 271:01, 274:01, 285:01, 286:01, 292:01, 293:01, 296:01, 307:01, 308:01, 312:01, 316:01, 321:01, 329:01, 338:01, 342:01, 351:01, 355:01, 363:01, 364:01, 365:01, 368:01, 369:01, 373:01, 374:01, 379:01, 380:01, 383:01, 385:01, 391:01, 394:01, 402:01, 404:01, 405:01, 409:01, 420:01, 424:01, 429:01, 431:01, 439:01, 442:01, 443:01, 445:01, 446:01, 463:01, 466:01, 472:01, 477:01, 484:01w, 488:01, 491:01, 492:01, 494:01, 498:01, 499:01, 506:01, 507:01N, 508:01, 509:01, 525:01, 532:01 and 536:01 alleles.

Specific PCR fragment of 165 bp in the DPB1\*99:01 and 220:01 alleles. Specific PCR fragment of 210 bp in the DPB1\*127:01 allele.

Primer mix 23: Specific PCR fragment of 145 bp in the DPB1\*05:01:01-05:01:07, 34:01, 36:01, 38:01, 62:01, 63:01, 97:01, 100:01, 112:01, 114:01, 116:01, 135:01, 140:01, 170:01, 171:01, 223:01, 226:01, 300:01, 301:01, 317:01, 330:01, 331:01, 333:01, 394:01, 395:01, 473:01, 484:01 and 495:01 alleles. Specific PCR fragment of 210 bp in the DPB1\*127:01 and 383:01 alleles.

Primer mix 24: Specific PCR fragment of 195 bp in the DPB1\*101:01 allele. Specific PCR fragment of 265 bp in the DPB1\*05:01:01-05:01:07, 08:01, 16:01:01-16:01:02, 19:01, 22:01, 31:01, 38:01, 57:01, 63:01, 65:01, 68:01, 84:01, 97:01, 102:01, 103:01, 106:01, 135:01, 140:01, 147:01, 150:01, 152:01, 165:01, 166:01, 170:01, 171:01, 173:01, 182:01, 184:01, 226:01, 234:01, 259:01, 277:01, 284:01, 285:01, 300:01, 301:01, 304:01, 305:01, 317:01, 331:01, 337:01, 340:01, 358:01, 379:01, 395:01, 398:01, 400:01, 422:01, 442:01, 466:01, 473:01, 495:01, 527:01, 533:01 and 535:01 alleles.

Primer mix 25: Specific PCR fragment of 200 bp in the DPB1\*05:01:01-05:01:07, 21:01, 22:01, 36:01, 38:01, 44:01, 58:01, 63:01, 97:01, 114:01, 135:01, 140:01, 170:01, 171:01, 220:01, 223:01, 226:01, 265:01, 300:01, 301:01, 317:01, 331:01, 384:01, 394:01, 395:01, 473:01 and 495:01 alleles. Specific PCR fragment of 265 bp in the DPB1\*70:01 allele.

Primer mix 26: Specific PCR fragment of 75 bp in the DPB1\*06:01, 09:01:01-09:01:04, 17:01, 29:01, 44:01, 46:01:01-46:01:02, 64:01N, 86:01, 88:01, 101:01, 131:01, 152:01, 156:01, 157:01, 161:01N, 166:01, 168:01, 182:01, 208:01, 234:01, 235:01, 241:01, 245:01, 249:01, 251:01, 266:01, 287:01, 288:01, 289:01, 332:01, 343:01, 361:01, 384:01, 386:01, 407:01, 413:01, 447:01, 460:01, 504:01, 505:01 and 530:01 alleles. Specific PCR fragment of 205 bp in the DPB1\*123:01 allele.

Primer mix 27: Specific PCR fragment of 95 bp in the DPB1\*06:01, 17:01, 20:01:01-20:01:03, 46:01:01-46:01:02, 64:01N, 69:01, 80:01, 86:01, 91:01, 98:01, 108:01, 130:01, 131:01, 152:01, 156:01, 161:01N, 164:01, 166:01, 168:01, 182:01, 197:01, 205:01, 208:01, 214:01, 235:01, 241:01, 245:01, 251:01, 259:01, 287:01, 332:01, 343:01, 355:01, 361:01, 379:01, 384:01, 407:01, 413:01, 447:01, 460:01, 484:01 and 530:01 alleles. Specific PCR fragment of 215 bp in the DPB1\*169:01 and 252:01 alleles. Specific PCR fragment of 235 bp in the DPB1\*15:01:01, 18:01, 89:01, 158:01, 198:01, 199:01, 200:01, 219:01, 246:01, 247:01, 290:01, 345:01, 347:01, 369:01, 387:01, 471:01, 480:01, 482:01 and 493:01 alleles. Specific PCR fragment of 95 bp and 235 bp in the DPB1\*292:01 allele.

Primer mix 28: Specific PCR fragment of 200 bp in the DPB1\*09:01:01-09:01:04, 10:01:01-10:01:02, 13:01:01-13:01:02, 17:01, 21:01, 26:01:01-26:01:02, 27:01, 30:01, 35:01:01-35:01:02, 36:01, 37:01, 54:01, 55:01, 58:01, 66:01, 79:01, 85:01, 86:01, 88:01, 93:01, 98:01, 107:01, 109:01, 110:01, 113:01, 117:01, 125:01, 129:01, 131:01, 132:01, 133:01, 137:01, 156:01, 157:01, 160:01, 168:01, 206:01, 209:01, 241:01, 244:01, 245:01, 251:01, 265:01, 269:01, 271:01, 287:01, 288:01, 289:01, 294:01, 295:01, 312:01, 313:01, 314:01, 324:01, 325:01, 343:01, 344:01, 361:01, 362:01, 370:01, 384:01, 386:01, 389:01, 390:01, 392:01, 393:01, 407:01, 408:01, 410:01, 412:01, 413:01, 438:01, 447:01, 448:01, 449:01, 460:01, 470:01, 490:01, 503:01, 504:01, 505:01, 514:01, 515:01, 518:01, 519:01, 530:01 and 532:01 alleles. Specific PCR fragment of 260 bp in the DPB1\*119:01 allele.

Primer mix 29: Specific PCR fragment of 105 bp in the DPB1\*141:01 allele. Specific PCR fragment of 220 bp in the DPB1\*09:01:01-09:01:04, 10:01:01-10:01:02, 17:01, 30:01, 54:01, 55:01, 58:01, 86:01, 113:01, 131:01, 137:01, 156:01, 157:01, 167:01, 168:01, 241:01, 245:01, 265:01, 266:01, 287:01, 288:01, 289:01, 313:01, 314:01, 324:01, 325:01, 343:01, 344:01, 361:01, 384:01, 386:01, 407:01, 408:01, 410:01, 447:01, 460:01, 470:01, 503:01, 504:01, 505:01, 514:01, 515:01 and 530:01 alleles.

Primer mix 31: Specific PCR fragment of 120 bp in the DPB1\*01:01:01-01:01:06, 05:01:01-05:01:02, 05:01:04-05:01:07, 08:01, 10:01:01-10:01:02, 11:01:01-11:01:04, 13:01:01-13:01:02, 16:01:01-16:01:02, 19:01, 21:01, 22:01, 25:01, 26:01:01-26:01:02, 27:01, 30:01, 31:01, 36:01, 37:01, 38:01, 45:01, 52:01, 54:01, 55:01, 56:01, 58:01, 63:01, 65:01, 67:01, 68:01, 79:01, 84:01, 85:01, 87:01, 89:01, 90:01, 93:01, 97:01, 102:01, 103:01, 106:01, 107:01, 110:01, 114:01, 118:01, 122:01, 125:01, 127:01, 133:01, 135:01, 136:01, 137:01, 140:01, 142:01, 147:01, 150:01, 159:01N, 162:01, 165:01, 167:01, 170:01, 171:01, 173:01, 184:01, 201:01, 202:01, 204:01, 206:01, 207:01, 209:01, 220:01, 223:01, 226:01, 244:01, 246:01, 247:01, 250:01, 264:01, 265:01, 267:01, 268:01, 269:01, 277:01, 284:01, 285:01, 291:01, 295:01, 300:01, 301:01, 304:01, 305:01, 312:01, 313:01, 314:01, 315:01, 316:01, 317:01, 324:01, 325:01, 326:01, 327:01, 328:01N, 331:01, 337:01, 340:01, 346:01, 348:01:01-348:01:02, 349:01, 353:01, 358:01, 362:01, 370:01, 371:01, 388:01, 389:01, 390:01, 393:01, 395:01, 398:01, 400:01, 403:01N, 408:01, 410:01, 411:01, 412:01, 417:01, 422:01, 436:01, 437:01, 438:01, 448:01, 449:01, 450:01N, 458:01, 462:01, 466:01, 470:01, 473:01, 481:01, 483:01, 490:01, 495:01, 503:01, 514:01, 515:01, 516:01, 517:01, 518:01, 519:01, 527:01, 532:01, 533:01 and 535:01 alleles. Specific PCR fragment of 215 bp in the DPB1\*222:01 allele.

Primer mix 32: Specific PCR fragment of 75 bp in the DPB1\*78:01 allele. Specific PCR fragment of 200 bp in the DPB1\*11:01:01-11:01:04, 130:01, 147:01, 202:01, 203:01, 204:01, 205:01, 250:01, 264:01, 268:01, 328:01N, 343:01, 353:01, 370:01, 388:01, 389:01, 405:01, 450:01N and 517:01 alleles. Specific PCR fragment of 260 bp in the DPB1\*223:01 and 293:01 alleles.

Primer mix 33: Specific PCR fragment of 105 bp in the DPB1\*76:01, 92:01, 203:01, 205:01, 214:01, 215:01, 355:01, 363:01, 385:01, 442:01 and 536:01 alleles. Specific PCR fragment of 140 bp in the DPB1\*13:01:01-13:01:02, 33:01, 81:01, 107:01, 110:01, 117:01, 133:01, 160:01, 172:01, 173:01, 198:01, 206:01, 229:01, 246:01, 247:01, 269:01, 277:01, 302:01, 304:01, 305:01, 362:01, 389:01, 393:01, 438:01, 449:01, 470:01, 474:01, 503:01, 514:01, 518:01 and 519:01 alleles. Specific PCR fragment of 195 bp in the DPB1\*123:01, 178:01 and 218:01N alleles. Specific fragment of 105 bp and 140 bp in the DPB1\*156:01, 287:01 and 288:01 alleles.

Primer mix 37: Specific PCR fragment of 160 bp in the DPB1\*13:01:01-13:01:02, 107:01, 110:01, 133:01, 160:01, 173:01, 246:01, 269:01, 278:01, 304:01, 362:01, 389:01, 393:01, 412:01, 449:01, 503:01, 518:01 and 519:01 alleles. Specific PCR fragment of 185 bp in the DPB1\*15:01:01-15:01:02, 28:01, 40:01, 53:01, 74:01, 139:01, 198:01,

290:01, 296:01, 299:01, 345:01, 387:01, 471:01, 482:01, 493:01, 499:01 and 512:01 alleles.

Primer mix 38: Specific PCR fragment of 95 bp in the DPB1\*23:01:01-23:01:02, 34:01, 52:01, 55:01, 58:01, 62:01, 63:01, 67:01, 71:01, 87:01, 95:01, 103:01, 112:01, 121:01, 138:01, 201:01, 209:01, 244:01, 295:01, 314:01, 322:01, 325:01, 333:01, 340:01, 371:01, 392:01, 435:01, 451:01 and 458:01 alleles. Specific PCR fragment of 180 bp in the DPB1\*186:01 and 243:01 alleles. Specific PCR fragment of 200 bp in the DPB1\*57:01? And 185:01 alleles.

Primer mix 40: Specific PCR fragment of 180 bp in the DPB1\*30:01, 54:01 and 408:01 alleles. Specific PCR fragment of 230 bp in the DPB1\*14:01:01-14:01:03, 35:01:01, 45:01, 66:01, 67:01, 76:01, 91:01, 98:01, 119:01, 125:01, 129:01, 197:01, 242:01, 243:01, 244:01, 312:01, 383:01, 385:01, 409:01, 445:01, 446:01, 490:01, 491:01, 492:01, 498:01, 503:01 and 530:01 alleles.

Primer mix 41: Specific PCR fragment of 75 bp in the DPB1\*77:01 and 245:01 alleles. Specific PCR fragment of 225 bp in the DPB1\*154:01N allele. Specific PCR fragment of 250 bp in the DPB1\*31:01, 34:01, 94:01, 176:01, 484:01 and 493:01 alleles. Specific PCR fragment of 280 bp in the DPB1\*134:01 and 177:01 alleles.

Primer mix 42: Specific PCR fragment of 140 bp in the DPB1\*97:01 allele. Specific PCR fragment of 185 bp in the DPB1\*32:01 allele. Specific PCR fragment of 210 bp in the DPB1\*176:01 and 180:01 alleles. Specific PCR fragment of 245 bp in the DPB1\*128:01 allele. Specific PCR fragment of 285 bp in the DPB1\*82:01, 301:01, 339:01 and 400:01 alleles.

Primer mix 44: Specific PCR fragment of 115 bp in the DPB1\*99:01, 453:01 and 521:01 alleles. Specific PCR fragment of 185 bp in the DPB1\*111:01 and 120:01N alleles. Specific PCR fragment of 240 bp in the DPB1\*241:01 allele. Specific PCR fragment of 270 bp in the DPB1\*64:01N allele. Specific PCR fragment of 115 bp and 185 bp in the DPB1\*118:01 and 437:01 alleles. Specific PCR fragment of 115 bp and 210 bp in the DPB1\*220:01 allele.

Primer mix 45: Specific PCR fragment of 120 bp in the DPB1\*46:01:01-46:01:02, 80:01, 86:01, 108:01, 164:01, 214:01, 235:01, 254:01, 332:01, 355:01 and 508:01 alleles. Specific PCR fragment of 160 bp in the DPB1\*253:01 allele. Specific PCR fragment of 190 bp in the DPB1\*39:01, 49:01, 96:01, 117:01, 158:01, 172:01, 354:01:01-354:01:02, 440:01, 441:01 474:01, 480:01 and 531:01 alleles. Specific PCR fragment of 240 bp in the DPB1\*115:01 and 240:01 alleles.

Primer mix 46: Specific PCR fragment of 75 bp in the DPB1\*69:01, 136:01, 204:01 and 205:01 alleles. Specific PCR fragment of 210 bp in the DPB1\*96:01, 147:01, 179:01, 299:01, 303:01 and 322:01 alleles. Specific PCR fragment of 75 and 210 bp in the DPB1\*41:01:01-41:01:02, 60:01, 83:01, 229:01 and 309:01 alleles.

Primer mix 47: Specific PCR fragment of 165 bp in the DPB1\*44:01, 114:01, 265:01, 394:01 and 495:01 alleles. Specific PCR fragment of 215 bp in the DPB1\*140:01 allele.

Primer mix 48: Specific PCR fragment of 115 bp in the DPB1\*56:01, 66:01, 76:01, 92:01, 110:01, 125:01, 156:01, 207:01, 288:01, 294:01 and 470:01 alleles. Specific PCR fragment of 210 bp in the DPB1\*61:01N allele. Specific PCR fragment of 280 bp in the DPB1\*85:01 and 515:01 alleles.

Primer mix 49: Specific PCR fragment of 95 bp in the DPB1\*149:01 allele. Specific PCR fragment of 135 bp in the DPB1\*198:01, 290:01, 343:01, 354:01:01-354:01:02, 370:01, 375:01, 387:01 and 389:01 alleles. Specific PCR fragment of 210 bp in the DPB1\*143:01 and 251:01 alleles.

Primer mix 50: Specific PCR fragment of 160 bp in the DPB1\*144:01 and 146:01 alleles. Specific PCR fragment of 210 bp in the DPB1\*01:01:01-01:01:02, 01:01:04-01:01:06, 18:01, 89:01, 90:01, 118:01, 122:01, 127:01, 158:01, 159:01N, 162:01, 198:01, 199:01, 200:01, 201:01, 220:01, 246:01, 247:01, 248:01, 249:01, 267:01, 290:01, 291:01, 292:01, 315:01, 316:01, 326:01, 327:01, 346:01, 347:01, 369:01, 387:01, 403:01N, 417:01, 436:01, 440:01, 462:01, 481:01, 483:01 and 536:01 alleles.

Primer mix 51: Specific PCR fragment of 170 bp in the DPB1\*145:01 and 382:01N alleles. Specific PCR fragment of 225 bp in the DPB1\*452:01 allele.

Primer mix 52: Specific PCR fragment of 130 bp in the DPB1\*151:01 allele. Specific PCR fragment of 215 bp in the DPB1\*165:01, 289:01 and 452:01 alleles.

Primer mix 53: Specific PCR fragment of 90 bp in the DPB1\*157:01 and 321:01 alleles. Specific PCR fragment of 155 bp in the DPB1\*221:01 allele. Specific PCR fragment of 180 bp in the DPB1\*242:01, 391:01 and 467:01 alleles. Specific PCR fragment of 205 bp in the DPB1\*153:01 allele.

Primer mix 54: Specific PCR fragment of 125 bp in the DPB1\*161:01N and 507:01N alleles. Specific PCR fragment of 185 bp in the DPB1\*160:01 allele. Specific PCR fragment of 210 bp in the DPB1\*159:01N and 328:01N alleles.

Primer mix 55: Specific PCR fragment of 135 bp in the DPB1\*155:01:01-155:01:02 alleles. Specific PCR fragment of 180 bp in the DPB1\*115:01, 218:01N, 382:01N and 393:01 allele.

Primer mix 56: Specific PCR fragment of 150 bp in the DPB1\*174:01 allele. Specific PCR fragment of 180 bp in the DPB1\*84:01 and 148:01 alleles. Specific PCR fragment of 230 bp in the DPB1\*170:01, 239:01, 260:01 and 487:01 alleles.

Primer mix 61: Specific PCR fragment of 145 bp in the DPB1\*168:01 allele. Specific PCR fragment of 225 bp in the DPB1\*459:01 allele.

Primer mix 63: Specific PCR fragment of 210 bp in the DPB1\*183:01 and 319:01 alleles. Specific PCR fragment of 245 bp in the DPB1\*216:01N allele. Specific PCR fragment of 270 bp in the DPB1\*280:01 allele.

Primer mix 64: Specific PCR fragment of 155 bp in the DPB1\*217:01 and 256:01 alleles. Specific PCR fragment of 205 bp in the DPB1\*226:01 and 232:01 alleles.

Primer mix 65: Specific PCR fragment of 165 bp in the DPB1\*181:01, 257:01 and 258:01 and alleles. Specific PCR fragment of 240 bp in the DPB1\*238:01 allele.

Primer mix 66: Specific PCR fragment of 185 bp in the DPB1\*276:01, 418:01 and 432:01 alleles. Specific PCR fragment of 235 bp in the DPB1\*239:01, 260:01 and 487:01 alleles. Specific PCR fragment of 285 bp in the DPB1\*455:01N allele.

Primer mix 68: Specific PCR fragment of 170 bp in the DPB1\*228:01 and 334:01 alleles. Specific PCR fragment of 200 bp in the DPB1\*191:01, 191:02, 310:01 and 342:01 alleles. Specific PCR fragment of 265 bp in the DPB1\*109:01, 117:01, 158:01, 164:01, 199:01, 200:01, 271:01, 294:01, 369:01, 392:01, 440:01, 480:01, 508:01 and 531:01 alleles.

Primer mix 69: Specific PCR fragment of 180 bp in the DPB1\*227:01 and 228:01 alleles. Specific PCR fragment of 225 bp in the DPB1\*360:01 allele. Specific PCR fragment of 250 bp in the DPB1\*210:01, 211:01, 240:01 and 272:01 alleles.

Primer mix 70: Specific fragment of 75 bp in the DPB1\*476:01 allele. Specific PCR fragment of 160 bp in the DPB1\*253:01, 286:01 and 334:01 alleles. Specific PCR fragment of 205 bp in the DPB1\*262:01 and 263:01 alleles. Specific PCR fragment of 260 bp in the DPB1\*196:01 allele.

Primer mix 71: Specific PCR fragment of 140 bp in the DPB1\*208:01 and 250:01 alleles. Specific PCR fragment of 180 bp in the DPB1\*315:01 allele. Specific PCR fragment of 260 bp in the DPB1\*268:01 allele.

Primer mix 72: Specific PCR fragment of 145 bp in the DPB1\*327:01 allele. Specific PCR fragment of 175 bp in the DPB1\*270:01 allele. Specific PCR fragment of 255 bp in the DPB1\*267:01, 293:01 and 393:01 alleles.

Primer mix 74: Specific PCR fragment of 165 bp in the DPB1\*255:01, 274:01 and 374:01 alleles. Specific PCR fragment of 215 bp in the DPB1\*252:01 and 273:01 alleles.

Primer mix 76: Specific PCR fragment of 120 bp in the DPB1\*215:01 allele. Specific PCR fragment of 170 bp in the DPB1\*283:01, 359:01 and 423:01 alleles. Specific PCR fragment of 220 bp in the DPB1\*193:01 allele. Specific PCR fragment of 250 bp in the DPB1\*225:01 allele.

Primer mix 77: Specific PCR fragment of 120 bp in the DPB1\*215:01 allele. Specific PCR fragment of 180 bp in the DPB1\*275:01 allele. Specific PCR fragment of 220 bp in the DPB1\*194:01 and 360:01 alleles. Specific PCR fragment of 260 bp in the DPB1\*311:01 and 368:01 alleles.

Primer mix 78: Specific PCR fragment of 145 bp in the DPB1\*282:01 allele. Specific PCR fragment of 185 bp in the DPB1\*318:01 allele. Specific PCR fragment of 225 bp in the DPB1\*195:01, 424:01 and 510:01 alleles. Specific PCR fragment of 255 bp in the DPB1\*224:01 allele.

Primer mix 79: Specific PCR fragment of 75 bp in the 476:01 allele. Specific PCR fragment of 170 bp in the DPB1\*275:01, 283:01, 359:01 and 396:01 alleles. Specific PCR fragment of 245 bp in the DPB1\*212:01 and 224:01 alleles.

Primer mix 80: Specific PCR fragment of 145 bp in the DPB1\*213:01, 282:01 and 286:01 alleles. Specific PCR fragment of 170 bp in the DPB1\*396:01 and 433:01 alleles. Specific PCR fragment of 250 bp in the DPB1\*225:01 allele.

Primer mix 81: Specific PCR fragment of 95 bp in the DPB1\*276:01 allele. Specific PCR fragment of 145 bp in the DPB1\*250:01 allele. Specific PCR fragment of 180 bp in the DPB1\*202:01, 230:01 and 313:01 alleles. Specific PCR fragment of 205 bp in the DPB1\*281:01 and 472:01 alleles. Specific PCR fragment of 260 bp in the DPB1\*268:01 and 472:01 alleles.

Primer mix 83: Specific PCR fragment of 160 bp in the DPB1\*04:01:01:01-04:01:31, 11:01:01-11:01:04, 15:01:01-15:01:02, 24:01, 27:01, 28:01, 31:01, 33:01, 39:01, 40:01, 49:01, 51:01, 53:01, 66:01, 72:01, 74:01, 81:01, 85:01, 89:01, 96:01, 99:01, 102:01, 117:01, 120:01N, 121:01, 126:01, 139:01, 147:01, 149:01, 156:01, 158:01, 169:01, 172:01, 174:01, 175:01, 176:01, 177:01, 178:01, 179:01, 180:01, 181:01, 192:01, 193:01, 194:01, 195:01, 198:01, 199:01, 202:01, 204:01, 205:01, 206:01, 207:01, 212:01, 213:01, 214:01, 215:01, 224:01, 225:01, 228:01, 229:01, 230:01, 232:01, 240:01, 247:01, 250:01, 253:01, 254:01, 255:01, 262:01, 264:01, 268:01, 272:01, 275:01, 276:01, 277:01, 279:01, 280:01, 281:01, 282:01, 283:01, 287:01, 290:01, 294:01, 296:01, 298:01, 299:01, 302:01, 303:01, 305:01, 319:01, 320:01, 323:01, 328:01N, 334:01, 335:01, 336:01, 337:01, 341:01, 345:01, 348:01:01-348:01:02, 350:01, 354:01:01-354:01:02, 355:01, 356:01, 357:01N, 360:01, 370:01, 372:01, 375:01, 376:01, 378:01, 387:01, 388:01, 396:01, 397:01, 398:01, 399:01, 415:01, 418:01, 425:01, 426:01, 427:01, 428:01, 434:01, 437:01, 450:01N, 453:01, 454:01, 455:01N, 456:01, 459:01, 464:01, 465:01, 468:01, 471:01, 474:01, 475:01, 476:01, 479:01, 480:01, 482:01, 485:01, 486:01, 487:01, 493:01, 512:01, 517:01, 520:01, 521:01, 522:01, 523:01, 524:01, 529:01, 531:01 and 534:01 alleles. Specific PCR fragment of 160 bp and 215 bp in the DPB1\*169:01 allele.

Primer mix 84: Specific PCR fragment of 165 bp in the DPB1\*181:01 alleles. Specific PCR fragment of 200 bp in the DPB1\*180:01, 418:01 and 432:01 alleles. Specific PCR fragment of 260 bp in the DPB1\*177:01, 186:01 and 338:01 alleles.

Primer mix 85: Specific PCR fragment of 190 bp in the DPB1\*175:01, 419:01, 429:01 and 498:01 alleles. Specific PCR fragment of 260 bp in the DPB1\*171:01 allele. Specific PCR fragment of 290 bp in the DPB1\*08:01?, 34:01?, 38:01?, 48:01?, 49:01?, 53:01?, 57:01?, 60:01?, 62:01?, 63:01?, 71:01?, 72:01?, 73:01?, 75:01?, 102:01? and 237:01 alleles.

Primer mix 86: Specific PCR fragment of 125 bp in the DPB1\*190:01 allele. Specific PCR fragment of 195 bp in the DPB1\*354:01:01-354:01:02, 375:01, 480:01 and 531:01 alleles.

Primer mix 87: Specific PCR fragment of 145 bp in the DPB1\*327:01 allele. Specific PCR fragment of 230 bp in the DPB1\*329:01 allele.

Primer mix 91: Specific PCR fragment of 145 bp in the DPB1\*464:01 and 535:01 alleles. Specific PCR fragment of 220 bp in the DPB1\*534:01 allele.

Primer mix 92: Specific PCR fragment of 115 bp in the DPB1\*403:01 allele. Specific PCR fragment of 165 bp in the DPB1\*445:01 allele. Specific PCR fragment of 230 bp in the DPB1\*533:01 allele.

Primer mix 93: Specific PCR fragment of 220 bp in the DPB1\*404:01 allele. Specific PCR fragment of 255 bp in the DPB1\*450:01N allele.

Primer mix 94: Specific PCR fragment of 160 bp in the DPB1\*01:01:01-01:01:04, 01:01:06, 26:01:01-26:01:02, 56:01, 76:01, 90:01, 92:01, 118:01, 122:01, 125:01, 127:01, 142:01, 159:01N, 162:01, 203:01, 220:01, 267:01, 288:01, 291:01, 315:01, 326:01, 327:01, 346:01, 363:01, 385:01, 403:01N, 411:01, 417:01, 436:01, 440:01, 462:01, 470:01, 481:01, 483:01, 490:01, 514:01, 516:01 and 536:01 alleles. Specific PCR fragment of 240 bp in the DPB1\*08:01, 57:01, 68:01, 73:01, 75:01, 84:01, 188:01, 234:01 and 285:01 alleles. Specific PCR fragment of 160 bp and 240 bp in the DPB1\*65:01, 150:01, 306:01, 377:01, 442:01 and 499:01 alleles.

Primer mix 95: Specific PCR fragment of 140 bp in the DPB1\*172:01, 173:01, 198:01w, 287:01, 389:01w, 441:01, 474:01, 503:01 and 514:01 alleles. Specific PCR fragment of 220 bp in the DPB1\*06:01, 21:01, 29:01, 37:01, 44:01, 88:01, 93:01, 109:01, 110:01, 161:01N, 198:01, 200:01, 208:01, 249:01, 295:01, 347:01, 349:01, 371:01, 389:01, 413:01 and 448:01 alleles. Specific PCR fragment of 140 bp and 220 bp in the DQB1\*13:01:01-13:01:02, 107:01, 117:01, 133:01, 160:01, 206:01, 246:01, 247:01, 269:01, 362:01, 393:01, 438:01, 449:01, 518:01 and 519:01 alleles.

**4**The following DPB1 alleles can be distinguished by the different sizes of the HLA-specific PCR product:

|  |  |  |  |
| --- | --- | --- | --- |
| **Alleles** | **Primer mix** | **Alleles** | **Primer mix** |
| DPB1\*32:01, 339:01 | 42 | DPB1\*153:01, 321:01 | 53 |
| DPB1\*78:01, 405:01 | 32 | DPB1\*237:01, 419:01 | 85 |
| DPB1\*120:01N, 453:01, 521:01 | 44 | DPB1\*250:01, 268:01 | 71, 81 |

The DPB1 typing kit cannot distinguish the following silent mutations: DPB1\*01:01:01-01:01:02, 01:01:04 and 01:01:06 alleles, the DPB1\*02:01:02, 02:01:04-02:01:05 and 02:01:07-02:01:18 alleles, the DPB1\*03:01:01-03:01:08 alleles, the DPB1\*04:01:01:01-04:01:01:02, 04:01:03-04:01:06, 04:01:08-04:01:10, 04:01:12-04:01:15 and 04:01:17-04:01:31 alleles, DPB1\*04:01:02 and 04:01:16 alleles, the DPB1\*04:01:07 and 04:01:11 alleles, the DPB1\*04:02:01:01-04:02:01:02 and 04:02:03-04:02:08 alleles, the DPB1\*05:01:01-05:01:02 and 05:01:07 alleles, the DPB1\*05:01:05-05:01:06 alleles, the DPB1\*09:01:02-09:01:04 alleles, the DPB1\*11:01:02-11:01:03 alleles, the DPB1\*41:01:01-41:01:02, the DPB1\*155:01:01-155:01:02 alleles, the DPB1\*236:01:01-236:01:02 alleles, the DPB1\*348:01:01-348:01:02 or the DPB1\*354:01:01-354:01:02 alleles.

‘w’, might be weakly amplified.

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

Change in revision R01 compared to R00:

1. Primer mix 69 may have tendencies of unspecific amplifications. A footnote has been added in the Specificity Table.

Change in revision R02 compared to R01:

1. Primer mix 44 does not amplify the \*38:01 allele. This has been corrected in the Specificity and Interpretation Tables.

Change in revision R03 compared to R02:

1. Primer mix 10 amplifies the DPB1\*02:01:04, 02:01:09, 46:01:02 and 366:01 alleles weakly. Primer mix 12 does not amplify the DPB1\*02:01:04 and 46:01:02 alleles, and amplifies the 02:01:09, 366:01 and 410:01 alleles weakly. This has been corrected in the Specificity and Interpretation Tables.

Change in revision R04 compared to R03:

1. Primer mixes 15, 27 and 77 may have tendencies of unspecific amplifications. A footnote has been added in the Specificity Table.

Change in revision R05 compared to R04:

1. Primer mix 53 does not amplify the \*163:01 allele. This has been corrected in the Specificity and Interpretation Tables.