Table S1: Amino-acidic mutations detected among reference and obtained (in green) HPV51 L1 sequences.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 52 | 65 | 135 | 178 | 181 | 216 | 218 | 264 | 265 | 272 | 273 | 354 | 357 | 359 | 419 | 428 | 436 | 467 | 477 | 479 | 497 | 499 | 501 |
| M62877 A1 | **I** | **S** | **N** | **P** | **P** | **K** | **D** | **V** | **G** | **N** | **D** | **T** | **P** | **N** | **R** | **C** | **A** | **K** | **K** | **R** | **A** | **R** | **R** |
| KF436870 A2 | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **G** | **S** | **.** | **.** | **P** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** |
| KF436873 A3 | **.** | **.** | **.** | **.** | **S** | **.** | **.** | **G** | **S** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** |
| KF436875 A4 | **L** | **.** | **.** | **.** | **.** | **.** | **.** | **G** | **S** | **T** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **V** | **.** | **.** |
| KF436883 B1 | **.** | **.** | **.** | **A** | **.** | **.** | **.** | **G** | **S** | **.** | **.** | **P** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** |
| KF436886 B2 | **.** | **.** | **.** | **A** | **.** | **.** | **.** | **G** | **S** | **.** | **N** | **.** | **.** | **.** | **.** | **.** | **D** | **.** | **.** | **K** | **.** | **.** | **.** |
| MO14 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | T | . | . | . | . | . | . | . | . | . |
| MO36 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO37 HPV51 L1 | . | . | . | . | . | R | . | G | S | . | . | . | . | . | . | . | . | . | R | . | . | . | . |
| MO44 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO60 HPV51 L1 | . | . | . | . | . | R | . | G | S | . | . | P | . | . | . | . | . | . | . | . | . | . | . |
| MO87 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO91 HPV51 L1 | . | . | . | . | . | . | N | G | S | . | . | . | . | . | G | . | . | R | R | . | . | L | L |
| MO102 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO112 HPV51 L1 | . | . | . | . | . | R | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO114 HPV51 L1 | . | . | . | . | . | R | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO116 HPV51 L1 | . | . | . | . | . | R | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO120 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | G | F | . | . | . | . | . | . | . |
| MO122 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO129 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO135 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO153 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO164 HPV51 L1 | . | . | . | . | . | R | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO182 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO218 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO223 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO241 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO246 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO263 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO295 HPV51 L1 | . | F | . | . | . | R | . | G | S | . | . | . | T | . | . | . | . | . | . | . | . | . | . |
| MO339 HPV51 L1 | . | . | Y | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS01 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS03 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS31 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS34 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS45 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS56 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS69 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS69 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS74 HPV51 L1 | . | . | . | . | . | . | . | G | S | . | . | . | . | . | . | . | . | . | . | . | . | . | . |

Table S2: Nucleotide mutations detected among HPV51 L1 mutations detected among reference and obtained (in green) HPV51 L1 sequences.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 126 | 129 | 154 | 168 | 194 | 252 | 255 | 282 | 399 | 403 | 429 | 495 | 532 | 541 | 543 | 615 | 627 | 647 | 652 | 702 | 762 | 791 | 792 | 793 | 815 | 817 | 915 | 939 | 1035 | 1050 | 1060 |
| M62877 A1 | **A** | **A** | **A** | **A** | **C** | **C** | **G** | **A** | **A** | **A** | **A** | **G** | **C** | **C** | **A** | **A** | **C** | **A** | **G** | **A** | **C** | **T** | **A** | **G** | **A** | **G** | **A** | **C** | **C** | **G** | **A** |
| KF436870 A2 | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **G** | **T** | **A** | **.** | **.** | **G** | **.** | **.** | **A** | **C** |
| KF436873 A3 | **.** | **.** | **.** | **.** | **.** | **.** | **A** | **.** | **.** | **.** | **G** | **.** | **.** | **T** | **.** | **.** | **T** | **.** | **.** | **.** | **.** | **G** | **T** | **A** | **.** | **.** | **.** | **.** | **.** | **A** | **.** |
| KF436875 A4 | **.** | **T** | **C** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **T** | **.** | **.** | **.** | **.** | **G** | **T** | **A** | **C** | **.** | **.** | **.** | **.** | **A** | **.** |
| KF436883 B1 | **C** | **.** | **.** | **.** | **.** | **T** | **.** | **.** | **.** | **.** | **.** | **T** | **G** | **.** | **.** | **.** | **.** | **.** | **.** | **G** | **.** | **G** | **T** | **A** | **.** | **.** | **.** | **.** | **.** | **A** | **C** |
| KF436886 B2 | **C** | **.** | **.** | **.** | **.** | **T** | **.** | **.** | **.** | **.** | **.** | **T** | **G** | **.** | **.** | **G** | **.** | **.** | **.** | **G** | **T** | **G** | **T** | **A** | **.** | **A** | **.** | **T** | **T** | **A** | **.** |
| MO14 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO36 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | G | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO37 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO44 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO60 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | G | T | A | . | . | . | . | . | A | C |
| MO87 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO91 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | A | . | . | G | T | A | . | . | . | . | . | . | . |
| MO102 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO112 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO114 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO116 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO120 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO122 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | T | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO129 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO135 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO153 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO164 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO182 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO218 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO223 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO241 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO246 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO263 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| MO295 HPV51 L1 | . | . | . | . | T | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | G | T | A | . | . | G | . | . | A | . |
| MO339 HPV51 L1 | . | . | . | . | . | . | . | . | . | T | . | . | . | . | G | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| SS01 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| SS03 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| SS31 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| SS34 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| SS45 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| SS56 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| SS63 HPV51 L1 | . | . | . | G | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| SS69 HPV51 L1 | . | . | . | . | . | . | . | . | T | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |
| SS74 HPV51 L1 | . | . | . | . | . | . | . | T | . | . | . | . | . | . | . | . | . | . | . | . | . | G | T | A | . | . | . | . | . | . | . |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1069 | 1076 | 1083 | 1131 | 1161 | 1185 | 1188 | 1194 | 1254 | 1255 | 1264 | 1275 | 1278 | 1283 | 1287 | 1307 | 1320 | 1362 | 1368 | 1383 | 1398 | 1400 | 1416 | 1430 | 1436 | 1458 | 1464 | 1467 | 1490 | 1496 | 1502 |
| M62877 A1 | **C** | **A** | **G** | **A** | **A** | **T** | **T** | **T** | **T** | **A** | **A** | **T** | **T** | **G** | **A** | **C** | **T** | **A** | **T** | **A** | **C** | **A** | **T** | **A** | **G** | **C** | **G** | **A** | **C** | **G** | **G** |
| KF436870 A2 | **.** | **.** | **.** | **G** | **.** | **.** | **.** | **.** | **C** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** |
| KF436873 A3 | **.** | **.** | **.** | **G** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** |
| KF436875 A4 | **.** | **.** | **.** | **G** | **.** | **.** | **.** | **.** | **.** | **.** | **C** | **.** | **.** | **.** | **.** | **.** | **.** | **G** | **.** | **.** | **A** | **.** | **.** | **.** | **.** | **.** | **A** | **.** | **T** | **.** | **.** |
| KF436883 B1 | **.** | **.** | **.** | **G** | **G** | **.** | **C** | **.** | **.** | **.** | **C** | **.** | **C** | **.** | **.** | **.** | **.** | **G** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** | **.** |
| KF436886 B2 | **.** | **.** | **.** | **G** | **.** | **C** | **.** | **C** | **.** | **.** | **C** | **C** | **C** | **.** | **.** | **A** | **.** | **G** | **G** | **.** | **.** | **.** | **.** | **.** | **A** | **T** | **.** | **C** | **.** | **.** | **.** |
| MO14 HPV51 L1 | . | C | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO36 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO37 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | . | . | . | . |
| MO44 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO60 HPV51 L1 | . | . | . | G | G | . | C | . | . | . | C | . | C | . | G | . | . | G | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO87 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO91 HPV51 L1 | . | . | . | . | . | . | . | . | . | G | . | . | . | . | . | . | C | . | . | . | . | G | . | G | . | . | . | . | . | T | T |
| MO102 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO112 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO114 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO116 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO120 HPV51 L1 | . | . | . | . | . | . | . | . | . | G | . | . | . | T | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO122 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO129 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO135 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO153 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO164 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO182 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO218 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO223 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO241 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO246 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO263 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO295 HPV51 L1 | A | . | A | G | . | . | . | . | C | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| MO339 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | . | . | . | . | . |
| SS01 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS03 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS31 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS34 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS45 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS56 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS63 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | G | . | . | . | . | . | . | . | . | . | . | . |
| SS69 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| SS74 HPV51 L1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . | . |

Table S3: Association between clinical data and detected mutations compared to the reference sequence M62877 A1.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sequence number** | **Cytology** | **Colposcopy** | **Histology** | **Nt mutations** | **Aa mutations** |
| **MO14 HPV51 L1** | NEG | NEG | - | T6311G, A6312T, G6313A, A6596C | V264G, G265S, N319T |
| **MO36 HPV51 L1** | LSIL | NEG | - | A5949G, T6311G, A6312T, G6313A | V264G, G265S |
| **MO37 HPV51 L1** | LSIL | NEG | - | A6167G, T6311G, A6312T, G6313A, A6950G | K216R, V264G, G265S, K477R |
| **MO44 HPV51 L1** | LSIL | NEG | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO60 HPV51 L1** | LSIL | NEG | - | A6167G, T6311G, A6312T, G6313A, G6570A, A6580C, A6551G, A6681G, T6708C, A6784C, T6798C, A6807G, A6882G | K216R, V264G, G265S, T354P |
| **MO87 HPV51 L1** | LSIL | NEG | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO91 HPV51 L1** | LSIL | NEG | - | A6063G, G6172A, T6311G, A6312T, G6313A, A6775G, T6840C, A6920G, A6950G, G7016T, G7022T | D218, V264G, G265S, R419G, K467R, K477R, R499L, R501L |
| **MO102 HPV51 L1** | LSIL | NEG | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO112 HPV51 L1** | HSIL | POS | CIN 3 | A6167G, T6311G, A6312T, G6313A | K216R, V264G, G265S |
| **MO114 HPV51 L1** | ASCUS | NEG | - | A6167G, T6311G, A6312T, G6313A | K216R, V264G, G265S |
| **MO116 HPV51 L1** | LSIL | NEG | - | A6167G, T6311G. A6312T, G6313A | K216R, V264G, G265S |
| **MO120 HPV51 L1** | ASCH | POS | NEG | T6311G, A6312T, G6313A, A6775G, G6803T | V264G, G265S, R419G, C428F |
| **MO122 HPV51 L1** | LSIL | NEG | - | C6147T, T6311G, A6312T, G6313A | V264G, G265S |
| **MO129 HPV51 L1** | LSIL | NEG | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO135 HPV51 L1** | LSIL | NEG | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO153 HPV51 L1** | LSIL | NEG | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO164 HPV51 L1** | LSIL | NEG | - | A6167G, T6311G, A6312T, G6313A | K216R, V264G, G265S |
| **MO182 HPV51 L1** | NEG | NEG | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO218 HPV51 L1** | LSIL | POS | CIN 3 | T6311G, A6312T, G6313A | V264G, G265S |
| **MO223 HPV51 L1** | ASCUS | POS | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO241 HPV51 L1** | LSIL | POS | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO246 HPV51 L1** | LSIL | POS | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO263 HPV51 L1** | ASCUS | NEG | - | T6311G, A6312T, G6313A | V264G, G265S |
| **MO295 HPV51 L1** | LSIL | NEG | - | C5741T, A6167G, T6311G, A6312T, G6313A, A6435G, G6570A, C6589A, G6603A, A6551G, T6774C | S65F, K216R, V264G, G265S, N359T |
| **MO339 HPV51 L1** | ASCUS | NEG | - | A5923T, A6063G, T6311G, A6312T, G6313A, T6936G | V264G, G265S |
| **SS01 HPV51 L1** | HSIL | POS | NEG | T6311G, A6312T, G6313A | N135Y, V264G, G265S |
| **SS03 HPV51 L1** | ASCH | G0 | Inadequate | T6311G, A6312T, G6313A | V264G, G265S |
| **SS31 HPV51 L1** | ASCH | POS | Condyloma | T6311G, A6312T, G6313A | V264G, G265S |
| **SS34 HPV51 L1** | HSIL | G0 | Inadequate | T6311G, A6312T, G6313A | V264G, G265S |
| **SS45 HPV51 L1** | ASCH | POS | NEG | T6311G, A6312T, G6313A | V264G, G265S |
| **SS56 HPV51 L1** | ASCH | N/A | - | T6311G, A6312T, G6313A | V264G, G265S |
| **SS63 HPV51 L1** | ASCUS | POS | CIN 1 | A5689G, T6311G, A6312T, G6313A, A903G | V264G, G265S |
| **SS69 HPV51 L1** | LSIL | POS | - | A5919T, T6311G, A6312T, G6313A | V264G, G265S |
| **SS74 HPV51 L1** | ASCUS | POS | CIN 3 | A5802T, T6311G, A6312T, G6313A | V264G, G265S |