

S2 Table. Phylogenetic and phenotypic characteristics of *Gardnerella vaginalis* isolates

| Strain | cpn60 subgroup | ARDRA pattern | Real-time PCR for subgroup detection ¹ | | | | | | | | Sialidase gene presence and activity | | | |
|--------|----------------|---------------|---|---|---|---|-------------------|-----|-----|-----|--------------------------------------|-------------------|-------------------|--------------------------|
| | | | Hydrolysis probe assays | | | | SYBR green assays | | | | PCR ² | SYBR ¹ | Spot ³ | Fluorometry ⁴ |
| | | | A | B | C | D | A | B | C | D | | | | |
| GH001 | A | 1 | 1829 | 0 | 0 | 6 | 1945 | 0 | 63 | 0 | 0 | 0 | 0 | 0 |
| GH003 | A | 1 | 2088 | 0 | 0 | 0 | 2088 | 20 | 81 | 0 | 0 | 17 | 0 | 0 |
| GH005 | A | 1 | 1954 | 0 | 0 | 0 | 1954 | 211 | 107 | 0 | 0 | 0 | 0 | 0 |
| GH011 | A | 1 | 1936 | 0 | 0 | 0 | 1936 | 27 | 85 | 0 | 0 | 8 | 0 | 0 |
| GH012 | A | 1 | 2218 | 0 | 0 | 0 | 2218 | 0 | 133 | 0 | 0 | 0 | 0 | 0 |
| GH018 | A | 1 | 1764 | 0 | 0 | 0 | 1311 | 0 | 10 | 0 | 0 | 6 | 0 | 0 |
| N115 | A | 1 | 1487 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| N134 | A | 1 | 1768 | 0 | 0 | 0 | 1398 | 61 | 19 | 0 | 0 | 0 | 0 | 0 |
| N72 | A | 1 | 1660 | 0 | 0 | 0 | 1929 | 0 | 47 | 0 | 0 | 0 | 0 | 0 |
| NR007 | A | 1 | 1903 | 0 | 0 | 0 | 1903 | 0 | 26 | 0 | 0 | 0 | 0 | 0 |
| NR008 | A | 1 | 1970 | 0 | 0 | 0 | 1970 | 0 | 761 | 0 | 0 | 96 | 0 | 0 |
| NR010 | A | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 1 | 1055 | 0 | 0 |
| NR014 | A | 1 | 1893 | 0 | 0 | 0 | 1893 | 71 | 7 | 22 | 0 | 0 | 0 | 0 |
| NR015 | A | 1 | 1811 | 0 | 0 | 0 | 0 | 128 | 9 | 0 | 0 | 74 | 0 | 0 |
| NR016 | A | 1 | 2037 | 0 | 0 | 0 | 1540 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NR017 | A | 1 | 1979 | 0 | 0 | 0 | 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NR019 | A | 1 | 1948 | 0 | 0 | 0 | 1948 | 0 | 46 | 0 | 0 | 0 | 0 | 0 |
| NR020 | A | 1 | 1949 | 0 | 0 | 0 | 1949 | 20 | 35 | 0 | 0 | 15 | 0 | 0 |
| NR021 | A | 1 | 2052 | 0 | 0 | 0 | 2052 | 12 | 11 | 0 | 0 | 0 | 0 | 0 |
| NR022 | A | 1 | 1823 | 0 | 0 | 0 | 1823 | 36 | 26 | 0 | 0 | 0 | 0 | 0 |
| NR023 | A | 1 | 1903 | 0 | 0 | 0 | 1570 | 36 | 0 | 0 | 0 | 0 | 0 | 0 |
| NR024 | A | 1 | 1977 | 0 | 0 | 0 | 1608 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| NR045 | A | 1 | 1708 | 7 | 0 | 0 | 0 | 40 | 82 | 98 | 0 | 50 | 0 | 0 |
| NR046 | A | 1 | 1773 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 |
| VN003 | A | 1 | 1779 | 0 | 0 | 0 | 2086 | 27 | 78 | 106 | 0 | 0 | 0 | 0 |
| WP001 | A | 1 | 1818 | 0 | 0 | 0 | 1572 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WP002 | A | 1 | 1923 | 0 | 0 | 0 | 1671 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WP006 | A | 1 | 1818 | 0 | 0 | 1 | 1485 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WP011 | A | 1 | 1910 | 0 | 0 | 0 | 1478 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WP015 | A | 1 | 2010 | 0 | 0 | 0 | 1570 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

S2 Table. Phylogenetic and phenotypic characteristics of *Gardnerella vaginalis* isolates

| Strain | cpn60 subgroup | ARDRA pattern | Real-time PCR for subgroup detection ¹ | | | | | | | | Sialidase gene presence and activity | | | |
|--------|----------------|---------------|---|------|---|---|-------------------|------|-----|---|--------------------------------------|-------------------|-------------------|--------------------------|
| | | | Hydrolysis probe assays | | | | SYBR green assays | | | | PCR ² | SYBR ¹ | Spot ³ | Fluorometry ⁴ |
| | | | A | B | C | D | A | B | C | D | | | | |
| WP016 | A | 1 | 2080 | 0 | 0 | 0 | 1689 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WP020 | A | 1 | 2081 | 0 | 0 | 0 | 1719 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WP021 | A | 1 | 2015 | 0 | 0 | 0 | 1723 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| WP022 | A | 1 | 1929 | 0 | 0 | 0 | 1587 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WP024 | A | 1 | 2094 | 0 | 0 | 0 | 1649 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WP026 | A | 1 | 2085 | 0 | 0 | 0 | 1687 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GH007 | B | 1 | 0 | 1233 | 0 | 0 | 10 | 789 | 82 | 0 | 1 | 1163 | 1 | 5.61 |
| GH009 | B | 1 | 0 | 1191 | 0 | 0 | 3 | 735 | 84 | 0 | 1 | 1935 | 1 | 0.91 |
| GH010 | B | 1 | 0 | 1151 | 0 | 0 | 0 | 935 | 40 | 0 | 1 | 2138 | 1 | 26.96 |
| GH019 | B | 1 | 0 | 980 | 0 | 0 | 1 | 795 | 38 | 0 | 1 | 1800 | 1 | 2.15 |
| GH020 | B | 1 | 0 | 1027 | 0 | 0 | 0 | 857 | 4 | 0 | 1 | 2063 | 1 | 3.67 |
| GH022 | B | 1 | 0 | 920 | 0 | 0 | 0 | 0 | 26 | 0 | 1 | 1755 | 1 | 9.78 |
| N101 | B | 2 | 0 | 0 | 0 | 0 | 0 | 517 | 0 | 0 | 1 | 1734 | 1 | 18.39 |
| N117 | B | 2 | 0 | 1984 | 0 | 0 | 0 | 1564 | 0 | 0 | 1 | 1190 | 1 | 2.85 |
| N144 | B | 2 | 0 | 975 | 0 | 0 | 0 | 1104 | 0 | 0 | 1 | 1731 | 1 | 21.23 |
| N153 | B | 2 | 0 | 0 | 0 | 0 | 0 | 135 | 0 | 0 | 1 | 1408 | 1 | 2.38 |
| N170 | B | 1 | 0 | 1900 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1627 | 1 | 7.30 |
| N95 | B | 1 | 0 | 0 | 0 | 0 | 0 | 1155 | 32 | 0 | 1 | 1123 | 1 | 8.00 |
| NR006 | B | 1 | 0 | 0 | 0 | 0 | 184 | 677 | 62 | 0 | 1 | 1828 | 1 | 16.29 |
| NR025 | B | 2 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 1 | 1123 | 1 | 3.57 |
| NR026 | B | 1 | 0 | 0 | 0 | 0 | 0 | 701 | 0 | 0 | 1 | 1868 | 1 | 21.27 |
| NR027 | B | 2 | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 0 | 1 | 1143 | 1 | 2.78 |
| NR028 | B | 1 | 1 | 1524 | 0 | 0 | 0 | 1027 | 0 | 0 | 1 | 1784 | 1 | 5.02 |
| NR029 | B | 2 | 0 | 0 | 0 | 0 | 0 | 82 | 121 | 0 | 1 | 1213 | 1 | 2.30 |
| NR030 | B | 1 | 0 | 1368 | 0 | 0 | 0 | 1024 | 0 | 0 | 1 | 1994 | 1 | 1.97 |
| NR031 | B | 1 | 0 | 0 | 0 | 0 | 0 | 999 | 1 | 0 | 1 | 2013 | 1 | 2.92 |
| NR032 | B | 1 | 0 | 795 | 0 | 0 | 0 | 1056 | 0 | 0 | 1 | 1795 | 1 | 19.45 |
| NR033 | B | 1 | 0 | 0 | 0 | 0 | 0 | 93 | 0 | 0 | 1 | 1866 | 1 | 1.11 |
| VN002 | B | 1 | 0 | 1446 | 0 | 0 | 0 | 0 | 28 | 0 | 1 | 2075 | 1 | 2.80 |
| VN009 | B | 1 | 0 | 1011 | 0 | 0 | 0 | 883 | 0 | 0 | 1 | 1710 | 1 | 7.68 |

S2 Table. Phylogenetic and phenotypic characteristics of *Gardnerella vaginalis* isolates

| Strain | cpn60 subgroup | ARDRA pattern | Real-time PCR for subgroup detection ¹ | | | | | | | | Sialidase gene presence and activity | | | |
|--------|----------------|---------------|---|------|------|---|-------------------|------|------|-----|--------------------------------------|-------------------|-------------------|--------------------------|
| | | | Hydrolysis probe assays | | | | SYBR green assays | | | | PCR ² | SYBR ¹ | Spot ³ | Fluorometry ⁴ |
| | | | A | B | C | D | A | B | C | D | | | | |
| VN010 | B | 1 | 0 | 1095 | 0 | 0 | 0 | 830 | 14 | 0 | 1 | 1615 | 1 | 2.80 |
| VN011 | B | 1 | 0 | 1356 | 0 | 0 | 0 | 75 | 0 | 0 | 1 | 1856 | 1 | 6.85 |
| VN013 | B | 1 | 0 | 949 | 0 | 0 | 0 | 168 | 0 | 0 | 1 | 1831 | 1 | 4.98 |
| VN014 | B | 1 | 0 | 1185 | 0 | 0 | 0 | 260 | 0 | 0 | 1 | 1817 | 1 | 4.38 |
| VN015 | B | 1 | 0 | 935 | 0 | 0 | 0 | 184 | 19 | 0 | 1 | 1734 | 1 | 5.58 |
| W11 | B | 1 | 0 | 1442 | 0 | 0 | 0 | 1032 | 10 | 0 | 1 | 1025 | 1 | 4.57 |
| WP003 | B | 2 | 0 | 1151 | 0 | 0 | 0 | 1527 | 0 | 0 | 1 | 1142 | 1 | 2.57 |
| WP027 | B | 2 | 0 | 1045 | 0 | 0 | 103 | 0 | 0 | 0 | 1 | 1127 | 1 | 3.14 |
| WP028 | B | 1 | 0 | 1475 | 0 | 0 | 0 | 748 | 0 | 0 | 1 | 1442 | 1 | 2.23 |
| GH004 | C | 2 | 0 | 0 | 1661 | 0 | 0 | 17 | 813 | 0 | 1 | 1142 | 0 | 0.00 |
| GH006 | C | 2 | 0 | 0 | 1878 | 0 | 0 | 0 | 1422 | 0 | 1 | 1361 | 1 | 2.97 |
| GH015 | C | 2 | 0 | 0 | 2047 | 0 | 0 | 0 | 1332 | 86 | 1 | 1441 | 1 | 26.60 |
| GH016 | C | 2 | 0 | 0 | 2034 | 0 | 0 | 0 | 1380 | 0 | 1 | 1220 | 0 | 0.00 |
| GH017 | C | 2 | 0 | 0 | 1784 | 0 | 0 | 0 | 1467 | 0 | 1 | 1670 | 1 | 10.83 |
| GH021 | C | 2 | 0 | 0 | 1934 | 0 | 0 | 0 | 1136 | 0 | 1 | 1471 | 0 | 0.00 |
| N165 | C | 2 | 0 | 0 | 1012 | 0 | 0 | 0 | 1119 | 0 | 1 | 1157 | 0 | 0.00 |
| NR001 | C | 2 | 0 | 0 | 1877 | 0 | 0 | 0 | 1339 | 0 | 1 | 1709 | 0 | 0.00 |
| NR004 | C | 2 | 1 | 0 | 1999 | 0 | 0 | 0 | 1485 | 0 | 1 | 1906 | 0 | 0.00 |
| NR009 | C | 2 | 0 | 0 | 1989 | 0 | 0 | 0 | 1346 | 0 | 1 | 1781 | 0 | 0.00 |
| NR034 | C | 2 | 0 | 0 | 1875 | 0 | 0 | 0 | 1194 | 0 | 1 | 1966 | 0 | 0.00 |
| NR035 | C | 2 | 0 | 0 | 1864 | 0 | 0 | 253 | 1499 | 0 | 1 | 1875 | 0 | 0.00 |
| NR036 | C | 2 | 1 | 0 | 1899 | 0 | 0 | 165 | 1387 | 107 | 1 | 1975 | 0 | 0.00 |
| NR037 | C | 2 | 0 | 0 | 1783 | 0 | 0 | 0 | 1594 | 0 | 1 | 2190 | 0 | 0.00 |
| NR038 | C | 2 | 0 | 0 | 1679 | 0 | 0 | 76 | 1481 | 0 | 1 | 2050 | 0 | 0.00 |
| NR039 | C | 2 | 0 | 0 | 1781 | 0 | 0 | 99 | 1547 | 0 | 1 | 2041 | 0 | 0.00 |
| NR040 | C | 2 | 1 | 0 | 1757 | 0 | 0 | 32 | 1542 | 0 | 1 | 1751 | 0 | 0.00 |
| NR041 | C | 2 | 0 | 0 | 1874 | 0 | 0 | 232 | 1670 | 0 | 1 | 2048 | 0 | 0.00 |
| NR042 | C | 2 | 0 | 0 | 1934 | 0 | 0 | 53 | 1532 | 0 | 1 | 1981 | 0 | 0.00 |
| VN001 | C | 2 | 0 | 0 | 1579 | 0 | 0 | 143 | 1282 | 0 | 1 | 1196 | 0 | 0.00 |
| VN004 | C | 2 | 0 | 0 | 1635 | 0 | 0 | 0 | 1534 | 0 | 1 | 1862 | 0 | 0.00 |

S2 Table. Phylogenetic and phenotypic characteristics of *Gardnerella vaginalis* isolates

| Strain | cpn60 subgroup | ARDRA pattern | Real-time PCR for subgroup detection ¹ | | | | | | | | Sialidase gene presence and activity | | | |
|--------|----------------|---------------|---|---|------|------|-------------------|-----|------|------|--------------------------------------|-------------------|-------------------|--------------------------|
| | | | Hydrolysis probe assays | | | | SYBR green assays | | | | PCR ² | SYBR ¹ | Spot ³ | Fluorometry ⁴ |
| | | | A | B | C | D | A | B | C | D | | | | |
| VN007 | C | 2 | 0 | 0 | 1798 | 0 | 0 | 41 | 1738 | 0 | 1 | 1422 | 0 | 0.00 |
| VN008 | C | 2 | 0 | 0 | 1761 | 0 | 0 | 145 | 1669 | 0 | 1 | 1607 | 0 | 0.00 |
| VN016 | C | 2 | 0 | 0 | 1878 | 0 | 0 | 0 | 952 | 0 | 1 | 1115 | 0 | 0.00 |
| VN018 | C | 2 | 0 | 0 | 1831 | 0 | 0 | 0 | 1102 | 0 | 1 | 1450 | 0 | 0.00 |
| VN019 | C | 2 | 0 | 0 | 1772 | 0 | 0 | 0 | 1302 | 0 | 1 | 1192 | 0 | 0.00 |
| WP007 | C | 2 | 1 | 0 | 1770 | 0 | 0 | 0 | 1234 | 0 | 1 | 1307 | 0 | 0.00 |
| WP008 | C | 2 | 0 | 0 | 1978 | 0 | 0 | 0 | 1407 | 0 | 1 | 1451 | 0 | 0.00 |
| WP009 | C | 2 | 1 | 0 | 1945 | 0 | 0 | 0 | 1252 | 0 | 1 | 1454 | 0 | 0.00 |
| WP010 | C | 2 | 0 | 0 | 1922 | 0 | 0 | 0 | 1287 | 0 | 1 | 1467 | 0 | 0.00 |
| WP014 | C | 2 | 0 | 0 | 1765 | 0 | 0 | 0 | 1293 | 0 | 1 | 1463 | 0 | 0.00 |
| WP018 | C | 2 | 1 | 0 | 1958 | 0 | 0 | 0 | 1430 | 0 | 1 | 1496 | 0 | 0.00 |
| WP019 | C | 2 | 1 | 0 | 2060 | 0 | 0 | 0 | 1239 | 0 | 1 | 1358 | 0 | 0.00 |
| WP023 | C | 2 | 1 | 0 | 2041 | 0 | 0 | 0 | 1310 | 0 | 1 | 1399 | 0 | 0.00 |
| WP025 | C | 2 | 29 | 0 | 1122 | 0 | 0 | 0 | 1314 | 0 | 1 | 1455 | 0 | 0.00 |
| N160 | D | 1 | 0 | 0 | 0 | 1115 | 0 | 0 | 0 | 1272 | 1 | 569 | 0 | 0.00 |
| N161 | D | 1 | 0 | 0 | 0 | 1166 | 0 | 0 | 0 | 1290 | 1 | 659 | 0 | 0.00 |
| NR002 | D | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 1171 | 1 | 1442 | 0 | 0.00 |
| NR003 | D | 1 | 0 | 0 | 0 | 1316 | 0 | 35 | 55 | 1354 | 1 | 702 | 0 | 0.00 |
| NR043 | D | 1 | 0 | 0 | 0 | 1074 | 0 | 402 | 109 | 1217 | 1 | 992 | 0 | 0.00 |
| NR044 | D | 1 | 0 | 0 | 0 | 961 | 0 | 0 | 0 | 1652 | 1 | 458 | 0 | 0.00 |
| NR047 | D | 2 | 0 | 0 | 0 | 0 | 0 | 16 | 9 | 1140 | 1 | 1535 | 0 | 0.00 |
| WP012 | D | 2 | 0 | 0 | 0 | 1083 | 0 | 0 | 0 | 1680 | 1 | 853 | 0 | 0.00 |

¹ Values are mean relative fluorescent units minus standard deviation of last 10 PCR cycles, all negative values adjusted to 0.

² Presence of band in Sia-F/R PCR assay, 0=Negative, 1=Positive

³ Visible fluorescence of culture in presence of substrate on filter paper spots under UV light, 0=Negative, 1=Positive

⁴ Values are change (slope) of fluorescence over time of cultures in presence of substrate measured on a FLx800 fluorometer, adjusted to 0.1 OD₅₉₅