**sTable 2.** WGS pipeline query sequences for surface protein genes.

|  |  |  |  |
| --- | --- | --- | --- |
| Query | Query Sequence | description | NCBI Sequence accession |
| ALPHA | TCTACAATTCCAGGGAGTGCAGCGACCTTAAATACAAGCATCACTAAAAATATACAAAACGGAAATGCTTACATAGATTTATATGATGTAAAATTAGGTAAAATAGATCCATTACAATTAATTGTTTTAGAACAAGGTTTTACAGCAAAGTATGTTTTTAGACAAGGTACTAAATACTATGGGGATGTTTCTCAGTTGCAGAGTACAGGAAGGGCTAGTCTTACCTATAATATATTTGGTGAAGATGGACTACCACATGTAAAGACTGATGGACAAATTGATATAGTTAGTGTTGCTTTAACTATTTATGATTCAACAACCTTGAGGGATAAGATTGAAGAAGTTAGAACGAATGCAAAC  GATCCTAAGTGGACGGAAGAAAGTCGTACTGAGGTTTTAACAGGATTAGATACAATTAAGACAGATATTGATAATAATCCTAAGACGCAAACAGATATTGATAGTAAAATTGTTGAGGTTAATGAATTAGAGAAATTGTTAGTATTGTCAGTACCG | *alpha* (Alpha protein family query; also called bca) | M97256 |
| RIB | GCTGAAGTAATTTCAGGAAGTGCTGTTACGTTAAACACAAATATGACTAAAAATGTTCAGAATGGTAGAGCATATATAGATTTATATGATGTGAAAAATGGGAAAATAGATCCATTACAATTAATTACGTTAAATTCACCTGATTTAAAAGCTCAGTATGTCATTAGGCAAGGCGGCAATTATTTCACACAACCTTCTGAATTGACTACTGTTGGTGCAGCTAGTATTAATTATACAGTATTGAAGACAGATGGAAGTCCTCATACGAAGCCTGATGGACAAGTGGATATTATAAACGTTTCATTGACTATTTACAATTCTTCAGCTTTGAGAGATAAAATAGATGAAGTTAAAAAGAAAGCGGAAGACCCTAAATGGGACGAGGGAAGTCGCGATAAAGTTTTGATAAGTTTAGATGATATCAAAACAGATATTGATAATAATCCTAAGACGCAATCAGACATTGCCAATAAAATAACTGAAGTTACTAATTTAGAAAAAATACTAGTACCTCGAATCCCA | *rib* (Alpha protein family query) | U58333 |
| ALP1 | GCTGAGGTGATTTCAGGAAGTGCTGCTACATTAAATTCCGCTTTAGTAAAAAATGTATCTGGTGGAAAAGCGTATATAGATATATATGATGTTAAAAATGGAAAAATAGATCCTTTAAACTTAATTGCTTTAAACCCTTCTAATTATTCAGCAAACTATTATATAAAACAAGGTGGAAGGATTTTCACGAGTGTTAATCAACTTCAAACACCAGGTACAGCTACTATTACGTACAACATCCTTGATGAAAATGGAAATCCTTATACTAAAAGTGATGGTCAAATAGATATTGTAAGTCTTGTAACAACAGTATATGATACTACAGAATTAAGGAATAATATCAACAAAGTAATTGAAAATGCAAATGATCCTAAATGGAGCGATGATAGTCGAAAAGATGTACTGAGCAAGATAGAAGTTATAAAAAATGATATTGATAATAATCCAAAAACTCAATCTGATATTGATAATAAAATTGTTGAGGTTAATGAATTAGAGAAATTGTTAGTATTACCA | *alp1* (Alpha protein family query; also called alp5 or Epsilon) | AY461799 |
| ALP2/3 | TGCATCTACAATTCCAGGGAGTGCAGCGACCTTAAATACAAGCATCACTAAAAATATACAAAACGGAAATGCTTACATAGATTTATATGATGTAAAGAATGGATTGATCGATCCTCAAAACCTCATTGTATTAAATCCATCAAGCTATTCAGCAAATTATTATATCAAACAAGGTGCTAAATATTATAGTAATCCGAGTGAAATTACAACAACTGGTTCAGCAACTATTACTTTTAATATACTTGATGAAACTGGAAATCCACATAAAAAAGCTGATGGACAAATTGATATAGTTAGTGTGAATTTAACTATATATGATTCTACAGCTTTAAGAAATAGGATAGATGAAGTAATAAATAATGCAAATGATCCTAAGTGGAGTGATGGGAGTCGTGATGAAGTCTTAACTGGATTAGAAAAAATAAAAAAAGATATTGATAATAATCCAAAAACACAAATAGATATTGATAATAAAATTAATGAAGTCAATGAAATAGAGAAATTGTTAGTTGTATCGCTACCAGATAAAATTAAGTATTCGCCAGAGGCTAAGCATAGGACTGTTGAACAACACGCGGAATTAGATGCAAAAGATAGCATTGCAAATACAGATGAATTGC | *alp2/3* (Alpha protein family gene query; highly homologous to *S. pyogenes* R28 antigen protein gene) | AF245663 |
| SRR1 | ATGTCCCAAAAGACTTTTGGCAAGCAGTTAACAGTTGTAGATACTAAGAGTAGAGTCAAGATGCATAAATCAGGAAAAAACTGGGTAAGAACAGTAATGTCGCATTTTAATCTATTTAAAGCGATTAAAGGGAGAGCAACTGTTGAAGCA | Serine-rich glycopeptide Srr1 query | AL766851 |
| SRR2 | GTAAACTCAGATTCTTCATCACATTCAACAAGTGAATCACAATCAATGTCAACTAGTACC | Serine-rich glycopeptide Srr2 query | AY669067 |
| **PI1** | AAATCGGAAATTACTTCTAATGGTGGTATCGAGAATAAAGACGGCGAAGTAATATCTAAC | Pilus backbone protein PI-1 query 1 | EU929742 |
| **PI1B** | AGTGAGGATATCACCAACAATAATGGTATCGAAAATAAAGATGGTGCTAGCTTAGCTGGT | Pilus island PI-1 query 2 | CP013908 |
| **PI2A1** | CAACTCCAATCAACCCATCAGAACCAAAAGTGGTGACTTATGGACGTAAATTTGTGAAAA | Pilus island PI-2A query 1 | EU929870 |
| **PI2A2** | CAACACCATTGAACCCAACTGAACCAAAAGTTGAAACTCATGGTAAGAAATTTGTCAAAA | Pilus island PI-2A query 2 | EU929881 |
| **PI2A3** | CAACGCCACTTAACCCAACTCAACCAAAAGTTGAAACACATGGTAAGAAATTTGTCAAAG | Pilus island PI-2A query 3 | EU929876 |
| **PI2A4** | CAACACCACTTAATCCAACTGAACCAAAAGTTGTGACACACGGTAAAAAATTCGTCAAAA | Pilus island PI-2A query 4 | EU929899 |
| **PI2B** | TCAGCTAATACTACACCAGTTTCCACTGTTACTGAGTCAAATAATGATGGTACTGAGGTT | Pilus island PI-2B query 1 | EU929104 |
| **PI2B2** | TCTAGCAGCATCACCGCGGGAAATTCAGTTACGGAATCAGGCGTTGATGGTACTGAGATA | Pilus island PI-2B query 2 | AM051289 |
| HVGA | ATACAAATTCTGCTGACTACCGTAGTAAAATTGATAATATCAGTACTACAGGTCTTGCGATAGCTCTTGAGGCTAAAGAAATTTATGAAGCAAATAAATCTATATTACCTCATCGTTACAAAGATTCTGTTGGAACTTATGTGAACAGTTTTGAGGAAAGACGAAGTCCAGGAAAATTTAATATTTGGAATGGTCAGGAAGGATTTAAT | adhesin in hypervirulent serotype III | AM051291 |

**sTable 3**. Surface protein determinants detected among GBS isolates recovered during 2015-2017.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Serotype** | **No. isolates (%)** | ***hvga*** | **Serine-rich repeat** | | **Alpha family protein** | | | | **Pili** | | | | | |
| ***srr1*** | ***srr2*** | ***alp1*** | ***alp2/3*** | ***alpha*** | ***rib*** | **PI-1** | | **PI-2a** | **PI-2b** | **PI-1:PI-2a** | **PI-1:PI-2b** |
| Ia | 1384 (21.8) | 0 | 1376 | 0 | 1105 | 179 | 68 | 22 | 1 | 1182 | | 14 | 177 | 7 |
| Ib | 919 (14.5) | 0 | 910 | 0 | 1 | 233 | 651 | 33 | 2 | 18 | | 0 | 898 | 0 |
| II | 1082 (17.1) | 0 | 897 | 0 | 29 | 163 | 675 | 212 | 2 | 676 | | 5 | 392 | 5 |
| III | 987 (15.6) | 465 | 507 | 460 | 12 | 19 | 17 | 937 | 8 | 10 | | 35 | 501 | 433 |
| IV | 748 (11.8) | 8 | 603 | 145 | 575 | 1 | 148 | 24 | 3 | 3 | | 144 | 596 | 2 |
| V | 1116 (17.6) | 0 | 1111 | 0 | 31 | 864 | 25 | 162 | 0 | 51 | | 3 | 1060 | 0 |
| VI | 61 (1) | 0 | 61 | 0 | 1 | 3 | 56 | 1 | 0 | 2 | | 0 | 58 | 1 |
| VII | 5 (0.08) | 0 | 5 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | | 1 | 0 | 4 |
| VIII | 17 (0.3) | 0 | 17 | 0 | 10 | 1 | 0 | 6 | 0 | 0 | | 0 | 0 | 17 |
| IX | 8 (0.1) | 0 | 8 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | | 0 | 0 | 0 |
| NT | 13 (0.2) | 0 | 12 | 1 | 2 | 6 | 3 | 2 | 0 | 3 | | 1 | 9 | 0 |
| Total | 6340 (100) | 473 | 5507 | 606 | 1766 | 1473 | 1651 | 1399 | 16 | 1953 | | 203 | 3691 | 469 |

**sTable 4**. Sequence types (STs) grouped by clonal complex for invasive GBS isolates recovered during 2015-2017

|  |  |
| --- | --- |
| **Clonal Complex** | **Sequence types (STs) (No. isolates)** |
| CC23 | ST23 (1072); ST88 (150); ST452 (120); ST24 (55); ST468 (11); ST498 (9); ST464 (7); ST984 (7); ST1010 (7); ST144 (6); ST970 (4); ST223 (3); ST249 (3); ST977 (3); ST859 (2); ST966 (2); ST968 (2); ST971 (2); ST973 (2); ST1015 (2); ST1042 (2); ST1055 (2); ST1064 (2); ST1076 (2); ST90 (1); ST163 (1); ST366 (1); ST443 (1); ST832 (1); ST833 (1); ST834 (1); ST835 (1); ST836 (1); ST837 (1); ST967 (1); ST969 (1); ST972 (1); ST974 (1); ST975 (1); ST978 (1); ST986 (1); ST998 (1); ST1007 (1); ST1020 (1); ST1028 (1); ST1031 (1); ST1034 (1); ST1051 (1); ST1060 (1); ST1065 (1); ST1066 (1); ST1069 (1); ST1077 (1); ST1082 (1); ST1084 (1); ST1104 (1); ST1106 (1); ST1120 (1); ST1123 (1); ST1128 (1); ST1132 (1); ST1133 (1); ST1229 (1); ST1253 (1); ST1257 (1); ST1269 (1); ST1270 (1); ST1277 (1); ST1285 (1); ST1325 (1); ST1332 (1) |
| CC1 | ST1 (1218); ST2 (43); ST235 (4); ST153 (4); ST847 (4); ST989 (2); ST49 (2); ST349 (2); ST478 (2); ST507 (2); ST693 (2); ST827 (2); ST849 (2); ST941 (2); ST952 (2); ST989 (2); ST1101 (2); ST1248 (2); ST1274 (2); ST6 (1); ST7 (1); ST14 (1); ST167 (1); ST217 (1); ST297 (1); ST367 (1); ST371 (1); ST524 (1); ST535 (1); ST667 (1); ST819 (1); ST820 (1); ST848 (1); ST894 (1); ST940 (1); ST942 (1); ST950 (1); ST951 (1); ST953 (1); ST954 (1); ST957 (1); ST958 (1); ST981 (1); ST987 (1); ST988 (1); ST1017 (1); ST1022 (1); ST1023 (1); ST1037 (1); ST1038 (1); ST1040 (1); ST1053 (1); ST1056 (1); ST1062 (1); ST1080 (1); ST1088 (1); ST1096 (1); ST1099 (1); ST1103 (1); ST1105 (1); ST1107 (1); ST1109 (1); ST1124 (1); ST1126 (1); ST1127 (1); ST1130 (1); ST1156 (1); ST1159 (1); ST1222 (1); ST1227 (1); ST1228 (1); ST1231 (1); ST1232 (1); ST1237 (1); ST1240 (1); ST1241 (1); ST1242 (1); ST1252 (1); ST1255 (1); ST1261 (1); ST1262 (1); ST1264 (1); ST1267 (1); ST1268 (1); ST1272 (1); ST1273 (1); ST1282 (1); ST1283 (1); ST1288 (1); ST1289 (1); ST1329 (1); ST1330 (1); ST1331 (1) |
| CC19 | ST19 (513); ST28 (201); ST335 (54); ST182 (21); ST42 (10); ST103 (8); ST27 (7); ST110 (6); ST314 (4); ST822 (4); ST347 (3); ST485 (3); ST824 (3); ST850 (3); ST219 (2); ST921 (2); ST1075 (2); ST1093 (2); ST1118 (2); ST21 (1); ST154 (1); ST181 (1); ST233 (1); ST566 (1); ST823 (1); ST825 (1); ST851 (1); ST853 (1); ST901 (1); ST947 (1); ST949 (1); ST955 (1); ST959 (1); ST980 (1); ST994 (1); ST997 (1); ST1014 (1); ST1025 (1); ST1033 (1); ST1046 (1); ST1052 (1); ST1068 (1); ST1085 (1); ST1094 (1); ST1098 (1); ST1100 (1); ST1108 (1); ST1111 (1); ST1113 (1); ST1122 (1); ST1136 (1); ST1224 (1); ST1225 (1); ST1233 (1); ST1239 (1); ST1243 (1); ST1276 (1); ST1284 (1); ST1286 (1); ST1327 (1); ST1333 (1) |
| CC12 | ST8 (395); ST12 (279); ST65 (10); ST652 (6); ST855 (4); ST509 (3); ST9 (2); ST1012 (2); ST1021 (2); ST15 (1); ST283 (1); ST538 (1); ST569 (1); ST838 (1); ST839 (1); ST840 (1); ST841 (1); ST843 (1); ST844 (1); ST856 (1); ST858 (1); ST979 (1); ST983 (1); ST1008 (1); ST1019 (1); ST1026 (1); ST1027 (1); ST1032 (1); ST1041 (1); ST1043 (1); ST1044 (1); ST1048 (1); ST1058 (1); ST1061 (1); ST1070 (1); ST1081 (1); ST1086 (1); ST1095 (1); ST1110 (1); ST1119 (1); ST1129 (1); ST1155 (1); ST1157 (1); ST1161 (1); ST1223 (1); ST1230 (1); ST1234 (1); ST1236 (1); ST1244 (1); ST1246 (1); ST1258 (1); ST1265 (1); ST1279 (1); ST1328 (1); |
| CC459 | ST459 (505); ST852 (25); ST821 (11); ST196 (8); ST1035 (4); ST710 (3); ST1009 (2); ST1029 (2); ST1045 (2); ST136 (1); ST732 (1); ST943 (1); ST944 (1); ST945 (1); ST946 (1); ST992 (1); ST1011 (1); ST1018 (1); ST1057 (1); ST1071 (1); ST1073 (1); ST1078 (1); ST1097 (1); ST1102 (1); ST1115 (1); ST1117 (1); ST1134 (1); ST1135 (1); ST1160 (1); ST1247 (1); ST1254 (1); ST1280 (1) |
| CC22 | ST22 (509); ST985 (4); ST846 (2); ST964 (2); ST990 (2); ST1036 (2); ST1116 (2); ST857 (1); ST960 (1); ST961 (1); ST962 (1); ST963 (1); ST991 (1); ST1006 (1); ST1013 (1); ST1024 (1); ST1047 (1); ST1049 (1); ST1050 (1); ST1067 (1); ST1079 (1); ST1158 (1); ST1235 (1); ST1245 (1); ST1256 (1); ST1260 (1); ST1275 (1); ST1278 (1) |
| CC17 | ST17 (373); ST860 (34); ST31 (15); ST965 (5); ST148 (3); ST828 (3); ST70 (2); ST995 (2); ST95 (1); ST109 (1); ST287 (1); ST291 (1); ST484 (1); ST712 (1); ST829 (1); ST830 (1); ST854 (1); ST1059 (1); ST1074 (1); ST1114 (1); ST1125 (1); ST1131 (1); ST1137 (1); ST1249 (1); ST1259 (1); ST1263 (1); ST1266 (1); ST1271 (1); ST1287 (1); |
| CC328 | ST529 (6); ST328 (2); ST327 (1) |
| CC26/1087 | ST 26 (28); ST1087 (1) |
| CC3 | ST3 (9); ST4 (5); ST711 (3); ST16 (1); ST826 (1); ST1238 (1) |
| CC585/41 | ST41 (2); ST585 (2) |
| Singletons | ST130 (11); ST931 (3) |

**sTable 5**. Capsular serotype distributions within different multilocus sequence types.

|  |  |
| --- | --- |
| **Sequence Type** | **Serotype (No. isolates)** |
| ST1 | V (798); Ib (204); II (143); VI (50); Ia (12); VII (4); NT (4); III (1); IV (1) |
| ST2 | II (26); IV (6); V (5); VIII (4); III (1); VI (1) |
| ST3 | V (4); Ib (3); II (1); IV (1) |
| ST8 | Ib (391); II (3); NT (1) |
| ST10 | Ib (36); II (25); V (4) |
| ST12 | Ib (197); II (70); III (11); V (1) |
| ST19 | III (352); V (154); II (4); Ia (1); Ib (1); NT (1) |
| ST22 | II (507); Ia (1); NT (1) |
| ST23 | Ia (1057); III (11); NT (2); Ib (1); II (1) |
| ST24 | Ia (48); II (4); V (3) |
| ST26 | V (27); III (1) |
| ST27 | III (6); V (1) |
| ST28 | II (200); III (1) |
| ST88 | Ia (139); II (10); NT (1) |
| ST103 | Ia (7); VII (1) |
| ST130 | IX (8); II (2); Ib (1) |
| ST153 | V (3); VI (1) |
| ST182 | III (20); NT (1) |
| ST235 | V (2); Ib (2) |
| ST328 | III (1); V (1) |
| ST452 | IV (119); NT (1) |
| ST 459 | IV (504); NT (1) |
| ST498 | Ia (5); V (4) |
| ST827 | II (1); V (1) |
| ST847 | Ib (2); II (2) |
| ST852 | IV (24); Ib (1) |
| ST921 | III (1); V (1) |
| ST970 | Ia (2); III (2) |

**sTable 6**. Macrolide, lincosamide, streptogramin and pleuromutilin resistance determinants and associated phenotypic among invasive Group B streptococci recovered during 2015-2017.

|  |  |  |  |
| --- | --- | --- | --- |
| **M, L, S, Pa resistance genes** | **Resistance phenotype** | **No.isolates** | **Predominant serotype/CC combination (%)** |
| *ermB* | eryR, cliR | 1248 | V/CC1 (34%); II/CC22 (31%); Ib/CC1 (14%); II/CC19 (6%); III/CC19 (4%); III/CC17 (3%); II/CC1 (2%); Ib/CC12 (1%); Ia/CC23 (1%); V/CC19 (1%) |
| *ermB, ermT* | eryR, cliR | 1 | II/CC22 |
| *ermB, ermTR* | eryR, cliR | 10 | II/CC2 (40%); IV/CC459 (30%); V/CC1; Ib/CC1 |
| *ermB, ermTR, lsaC*b | eryR, cliR | 1 | V/CC1 |
| *ermB, lnuB, lsaE*b | eryR, cliR | 8 | III/CC17 (50%); II/CC19 (25%); V/CC19; Ib/CC12 |
| *ermB, lnuB, lsa*b*E, mef, msrD* | eryR, cliR | 1 | III/CC17 |
| *ermB, lsaC*b | eryR, cliR | 25 | III/CC19 (52%); Ib/CC1 (16%) |
| *ermB, lsaC*b*, mef, msrD* | eryR, cliR | 1 | Ia/CC23 |
| *ermB, mef, msrD* | eryR, cliR | 8 | Ia/CC23 (25%); V/CC1 (25%); II/CC19; III/CC17; III/CC19; V/CC19 |
| *ermTR* | eryR, cliR | 1199 | IV/CC459 (48%); Ib/CC12 (15%); V/CC1 (13%); III/CC19 (9%); II/CC12 (4%); II/CC1 (3%); Ia/CC23 (2%); Ib/CC1 (2%); III/CC17 (2%); II/CC22 (1%) |
| *ermTR, ermT* | eryR, cliR | 4 | Ia/CC23 |
| *ermTR, ermT, lsaC* | eryR, cliR | 1 | V/CC1 |
| *ermTR, lsaC*b | eryR, cliR | 42 | V/CC1 (64%); III/CC19 (17%) |
| *ermTR, lnuC* | eryR, cliR | 1 | V/CC19 |
| *ermTR, mef, msrD, lsaC*b | eryR, cliR | 1 | III/CC19 |
| *ermTR, mef, msrD* | eryR, cliR | 5 | III/CC19 (40%); Ia/CC23; Ib/CC3; V/CC19 |
| *ermT* | eryR, cliR | 129 | III/CC17 (29%); Ia/CC23 (22%); III/CC19 (12%); Ib/CC12 (9%); II/CC1 (7%); II/CC12 (6%); V/CC19 (5%) |
| *ermT, mef, msrD* | eryR, cliR | 4 | Ia/CC23 (75%); III/CC17 |
| *ermA*c*, lsaC*b | eryR, cliR | 1 | V/CC1 |
| *mef, msrD* | eryR | 779 | Ia/CC23 (78%); III/CC17 (8%); V/CC19 (6%); Ib/CC12 (3%); III/CC19 (2%) |
| *mef, msrD, lnuC, lsaC*b | eryR, cliR | 2 | III/CC19 |
| *mef, msrD, lnuB, lsaE*b | eryR, cliR | 1 | III/CC19 |
| *mef, msrD, lsaA*b | eryR, cliR | 1 | Ib/CC12 |
| *mef, msrD, lsaC*b | eryR, cliR | 14 | Ia/CC23 (79%) |
| *mefSL1d, msrD* | eryR | 1 | Ib/CC12 |
| *lnuC* | cliR | 1 | V/CC |
| *lnuB, lsaE*b | cliR | 7 | V/CC26/1087 (71%); V/CC19; Ia/CC19 |
| *lsaC*b | cliR | 59 | III/CC19 (41%); V/CC1 (22%); Ia/CC23 (10%) |
| 23S:A2062Ge | eryR, cliR | 2 | Ib/CC12 |

eryR = erythromycin resistant; cliR = clindamycin resistant; CC = MLST clonal complex

aM,L,S,P refers to macrolides, lincosamides, streptogramins and pleuromutilins.

b*lsaC* or *lsaE* found to confer resistance to lincosamides, streptogramin A and pleuromutilins

cIsolate 20161898 contained a 235 codon *ermA* homolog with 68.3% sequence identity to the *ermA* determinants within the ResFinder and ArgAnnot databases.

dIsolate 20161487 contained a 398 codon putative *mef* homolog with 54.5% and 53.5% sequence identity with *mefA-10* and *mefB* determinants in the ResFinder and ArgAnnot databases, respectively.

eIsolate 20153154 and 20154646 contained the same 23S A2062G substitution in three or fewer of the seven 23S rRNA genes.

**sTable 7**. Tetracycline-resistance associated genes among GBS isolates recovered during 2015-2017.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Serotype** | **No. isolates** | ***tetM*** | ***tetO*** | ***tetM:tetO*** | ***tetL:tetM*** | ***tet*a** |
| Ia | 1235 (89.2%) | 1190 | 29 | 7 | 0 | 7 |
| Ib | 851 (92.6%) | 832 | 13 | 4 | 0 | 2 |
| II | 985 (91%) | 803 | 133 | 35 | 8 | 6 |
| III | 846 (85.7%) | 759 | 45 | 37 | 2 | 3 |
| IV | 463 (61.9%) | 458 | 1 | 2 | 0 | 2 |
| V | 994 (89.1%) | 954 | 17 | 13 | 2 | 8 |
| VI | 9 (14.8%) | 1 | 6 | 1 | 0 | 1 |
| VII | 4 (80%) | 3 | 1 | 0 | 0 | 0 |
| VIII | 1 (5.9%) | 0 | 1 | 0 | 0 | 0 |
| IX | 0 (0%) | 0 | 0 | 0 | 0 | 0 |
| NT | 11 (84.6%) | 11 | 0 | 0 | 0 | 0 |
| Total | 5,399 (85.2%) | 5011 | 246 | 99 | 12 | 29 |

Presence of any *tet* gene predicts resistance with MICs ≥8 µg/ml

aInclusive of all other *tet* determinants identified through ResFinder and ArgAnnot

**sTable 8**. Amino acid substitutions within ParC and GyrA query sequences conferring non-susceptibility to fluroquinolones.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **GyrA** | **ParC** | **No. isolates** | **AMR prediction to levofloxacina** | **Serotype/ST combination for 103 I/R isolates (No. isolates)b** |
| E85G | D83Y | 1 | R | III/ST335 (1) |
| E85K | S79Y | 1 | R | IV/ST1078 (1) |
| G79C | S79Y,D83G | 1 | R | Ia/ST88 (1) |
| S81L | D83G | 1 | R | V/ST19 (1) |
| S81L | D83N | 1 | R | Ia/ST23 (1) |
| S81L | S83Y | 1 | R | Ib/ST12 (1) |
| S81L | S79F | 60 | R | Ib/ST10 (34), V/ST19 (14), IV/ST459 (3), V/ST1 (3), Ib/ST953 (1), Ib/ST979 (1), Ib/ST1157 (1), III/ST335 (1), IV/ST452 (1), Ia/ST23 (1) |
| S81L | S79F,D83N | 1 | R | III/ST19 (1) |
| S81L | S79Y | 9 | R | III/ST19 (6), III/ST283 (1), V/ST1 (1), VI/ST1 (1) |
| WTc | D83G | 11 | I | V/ST1 (4), Ia/ST23 (2), Ib/ST1 (2), Ib/ST12 (1), II/ST1 (1), VI/ST1 (1) |
| WT | D83Y | 4 | I | V/ST1 (2), II/ST22 (1), III/ST1125 (1), |
| WT | S79Y | 12 | I | II/ST22 (4), V/ST1 (3), Ib/ST8 (3), Ia/ST1 (1), Ia/ST23 (1) |

aI = intermediate, R = resistant (based on CLSI breakpoints to levofloxacin)

bST = sequence type

cWT=wild type

**sTable 9.** Additional accessory genomic resistance determinants and associated MICs and serotypes/STs recovered during 2015-2017.

|  |  |  |  |
| --- | --- | --- | --- |
| **Antimicrobial** | **Determinant (No. isolates)** | **Serotype/ST (No. isolates)** | **MIC (µg/ml)** |
| Gentamicin | *aac6-aph2* (17) | V/ST19 (6); III/ST19 (4); Ia/ST23(1); Ia/ST1082 (1); II/ST28 (1); III/ST17 (1); IV/ST1010 (1); IV/ST459 (1); VI/ST1 (1) | >256 |
| Chloramphenicol | *catQ* (10) | III/ST19 (5); V/ST19(3); II/ST28 (1); V/ST585 (1) | >32 |
| Vancomycin | *vanG* (2)a | V/ST1 (2) | 2 |
| Rifampin | RpoB-H486N (5)  RpoB-H486D (1)  RpoB-H486Y/M475I (1)  RpoB-S491F (6)  RpoB-S491Y (1) | Ia/ST23 (1); II/ST22 (2); II/ST985 (1); V/ST1(1)  VI/ST1 (1)  V/ST26 (1)  Ia/ST23 (2); II/ST22 (1); III/ST860 (1); V/ST1 (2)  II/ST28 (1) | 4  >4  >4  >4  >4 |
| RpoB-L493S (1)  RpoB-L493V (1)  RpoB-S469L;D476N (1)  RpoB-M475I;H486Y (1) | II/ST985 (1)  II/ST12 (1)  Ib/ST8 (1)  V/ST26 (1) | >4  >4  >4  >4 |
| Trimethoprim | *dfrG* (2) | VI/ST1 (2) | Not determined |
| Other aminoglycosides | Aph3-III (131) |  | Not determined |
| ant6-Ia (107) |  |
| Streptothricins | *sat4A* (131) |  | Not determined |

aIsolates 20166174 (2016) and 20170296 (2017) both from adult patients from Maryland (MD).