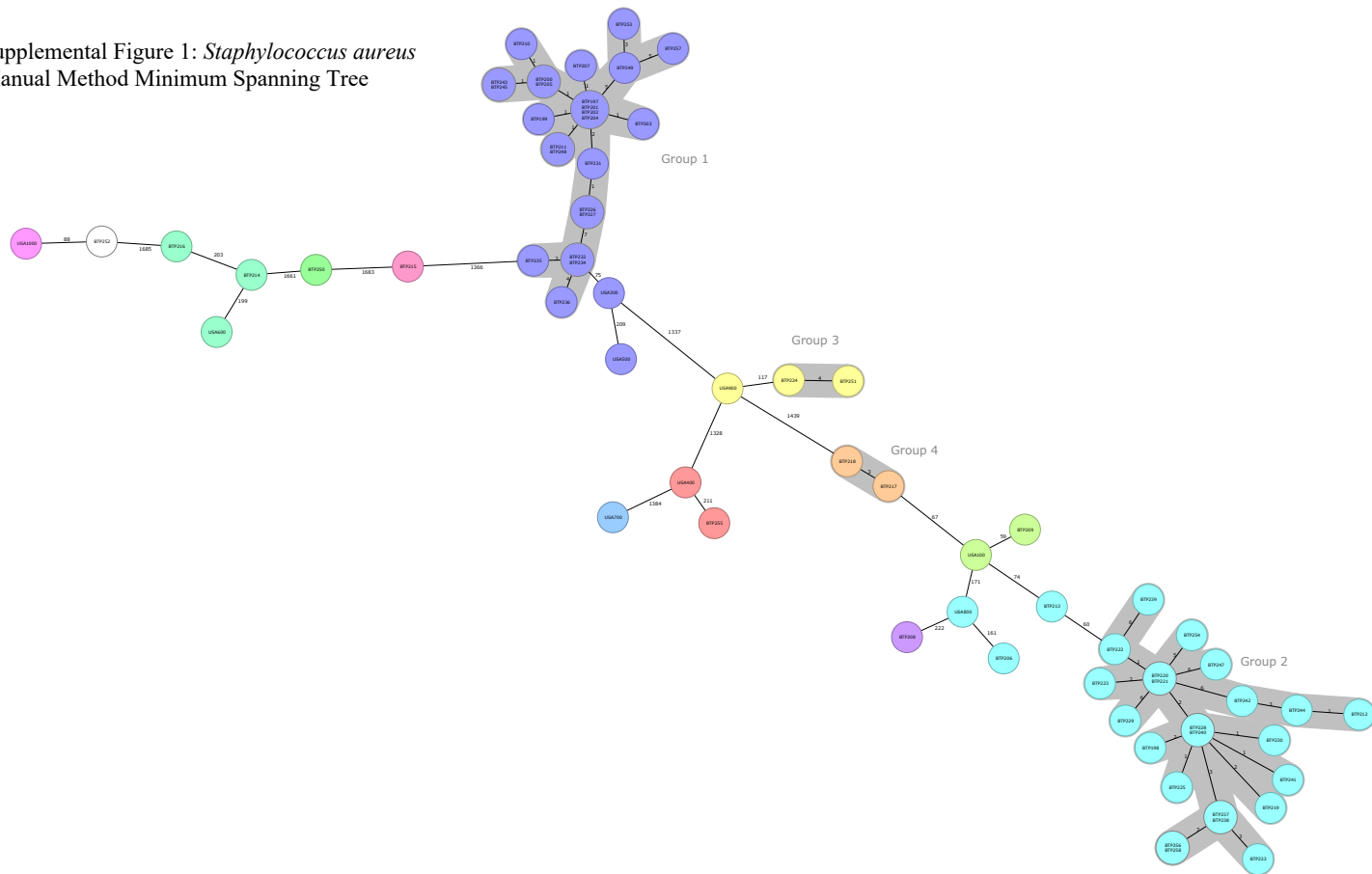
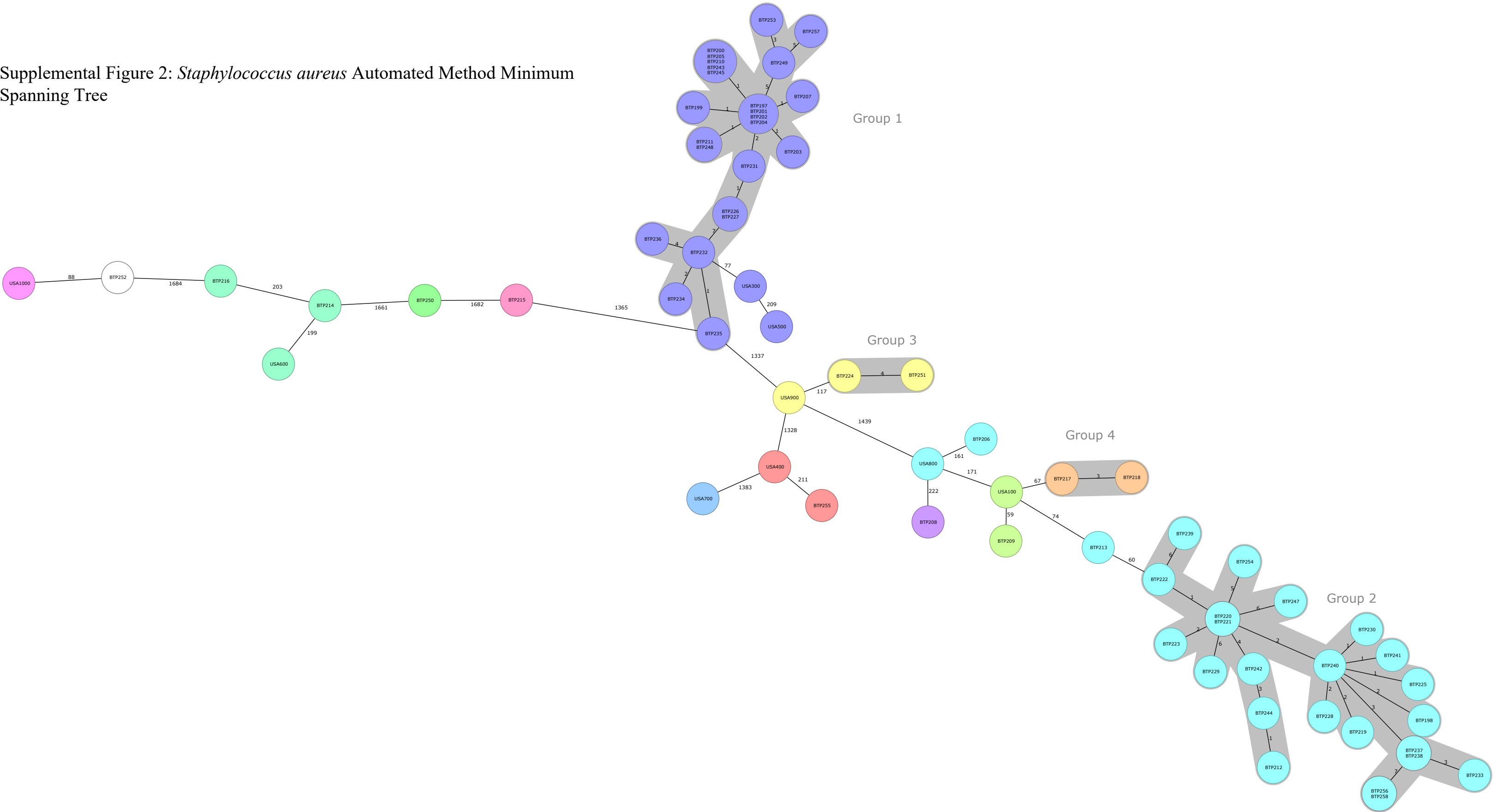
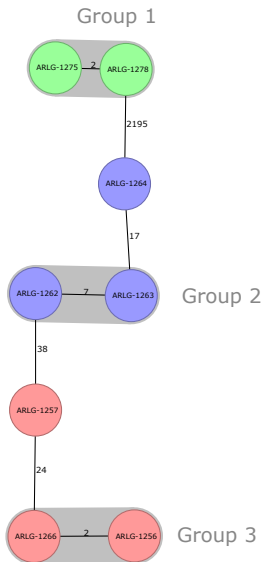




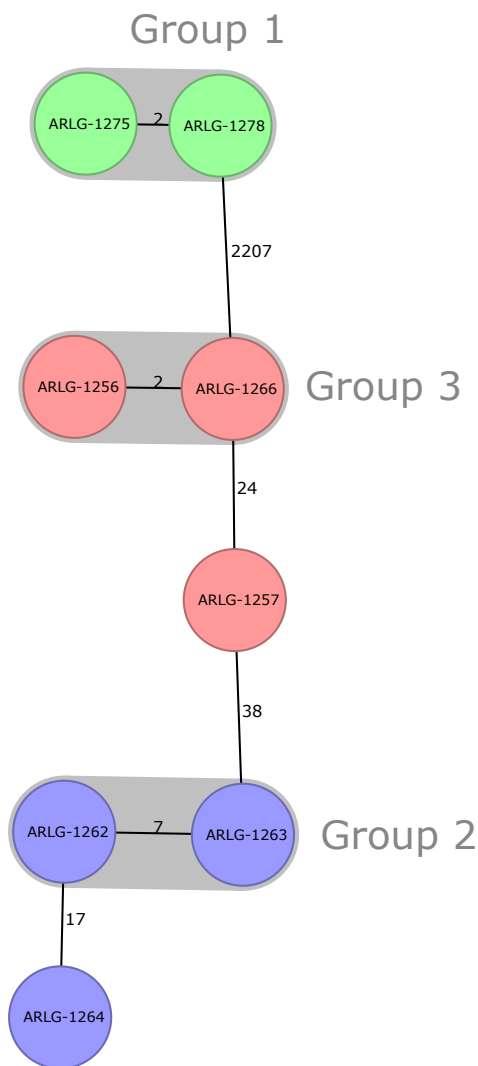
Supplemental Figure 2: *Staphylococcus aureus* Automated Method Minimum Spanning Tree



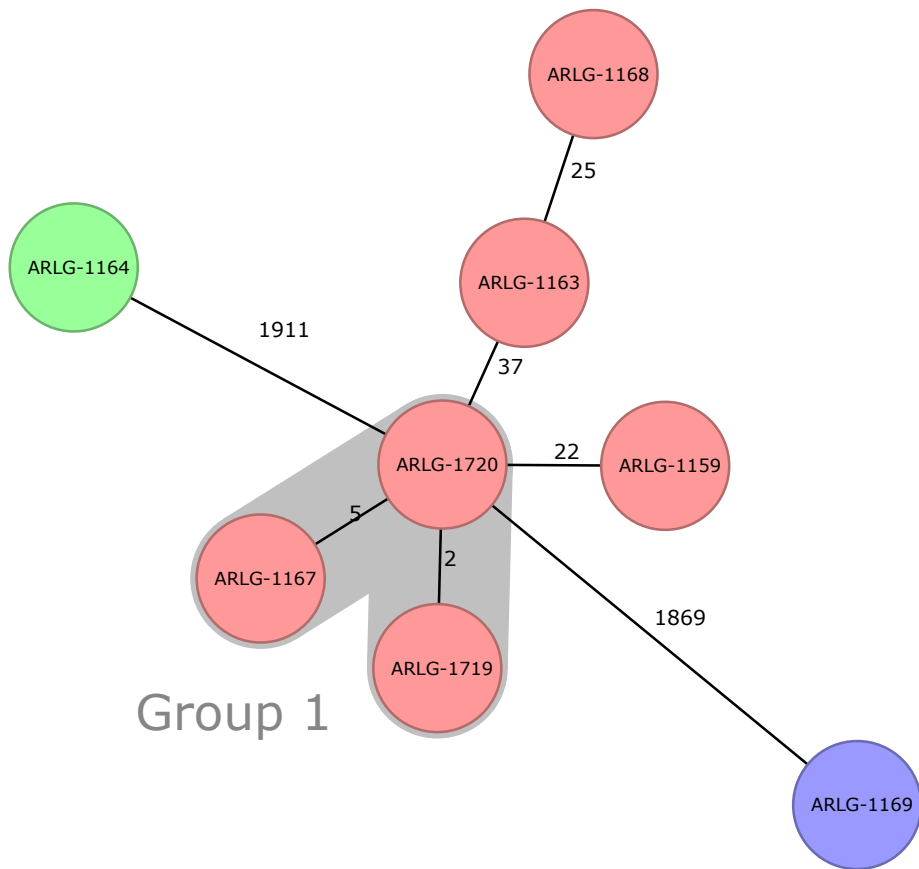
Supplemental Figure 3: *Acinetobacter baumannii* Manual Method Minimum Spanning Tree



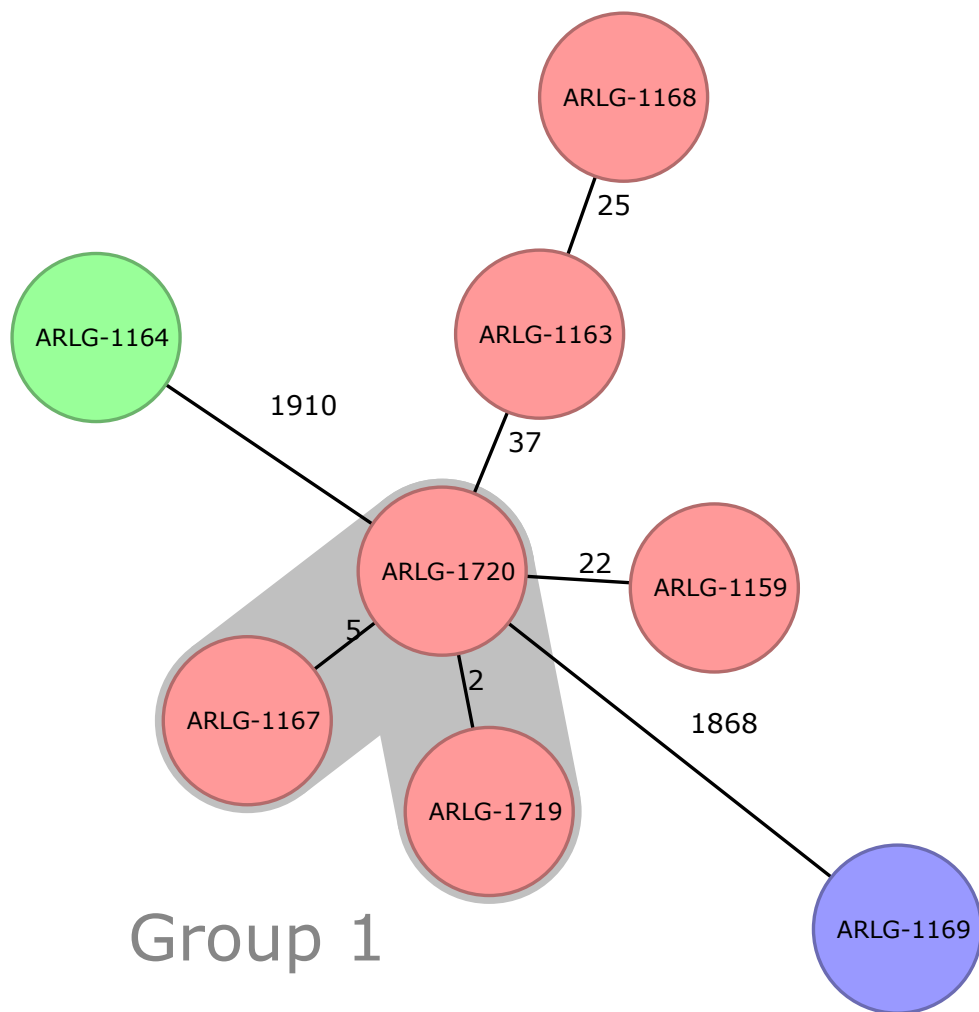
Supplemental Figure 4: *Acinetobacter baumannii* Automated Method Minimum Spanning Tree



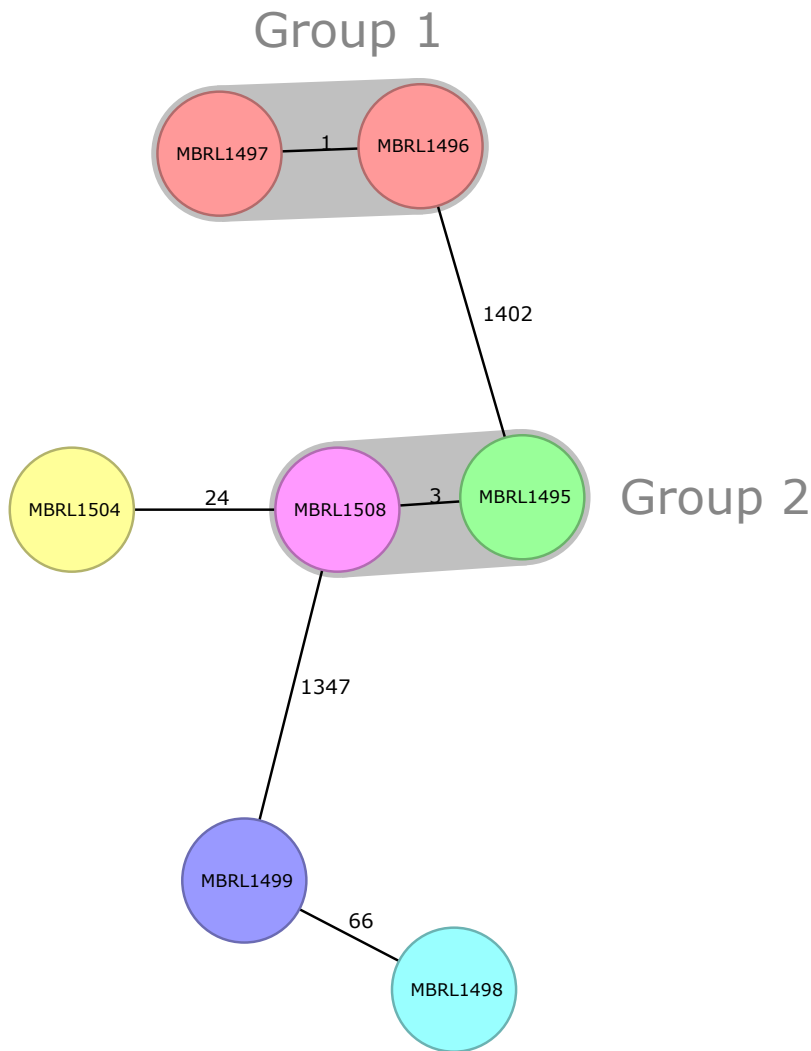
Supplemental Figure 5: *Klebsiella pneumoniae* Manual Method Minimum Spanning Tree



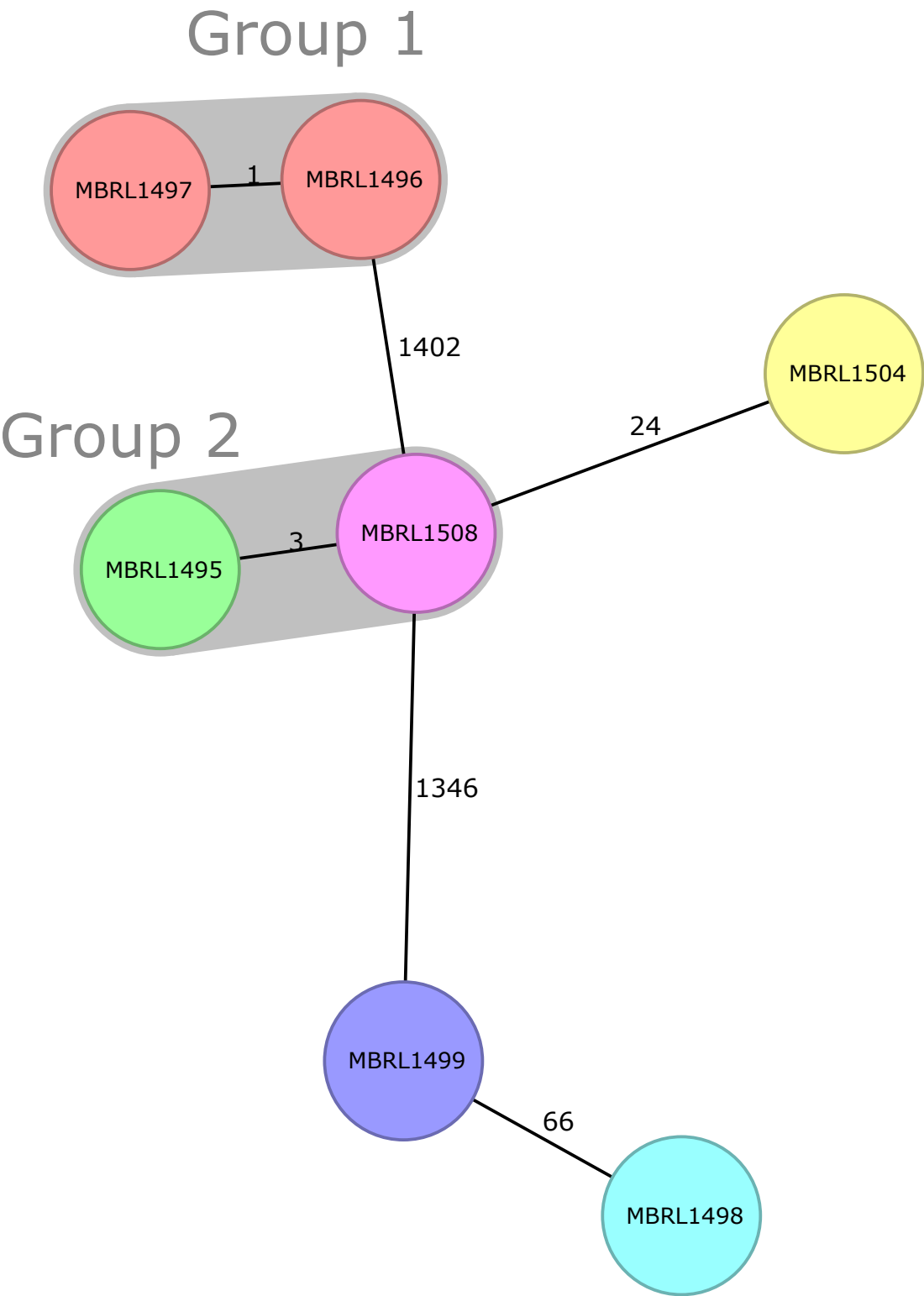
Supplemental Figure 6: *Klebsiella pneumoniae* Automated Method Minimum Spanning Tree



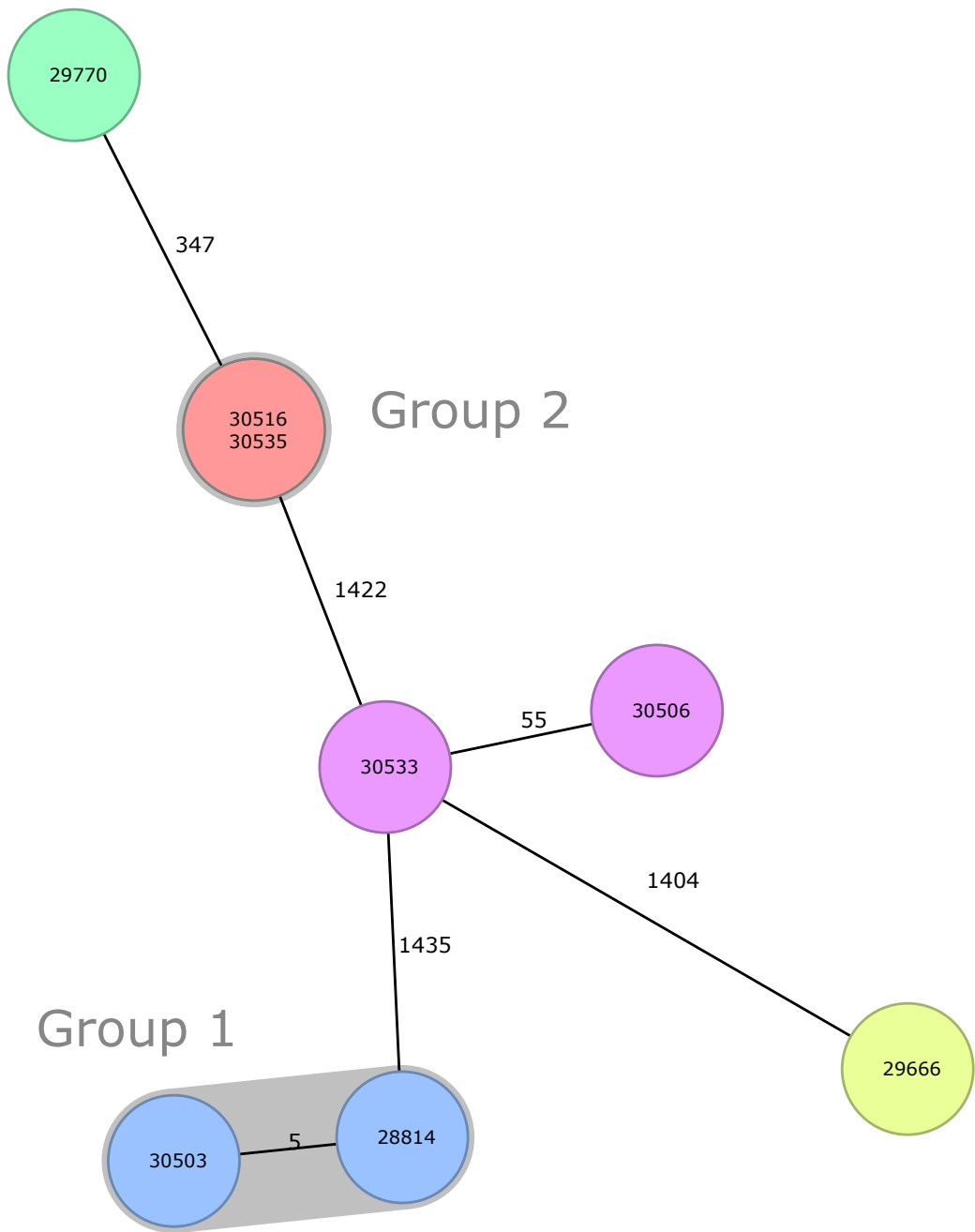
Supplemental Figure 7: *Legionella pneumophila* Manual Method Minimum Spanning Tree



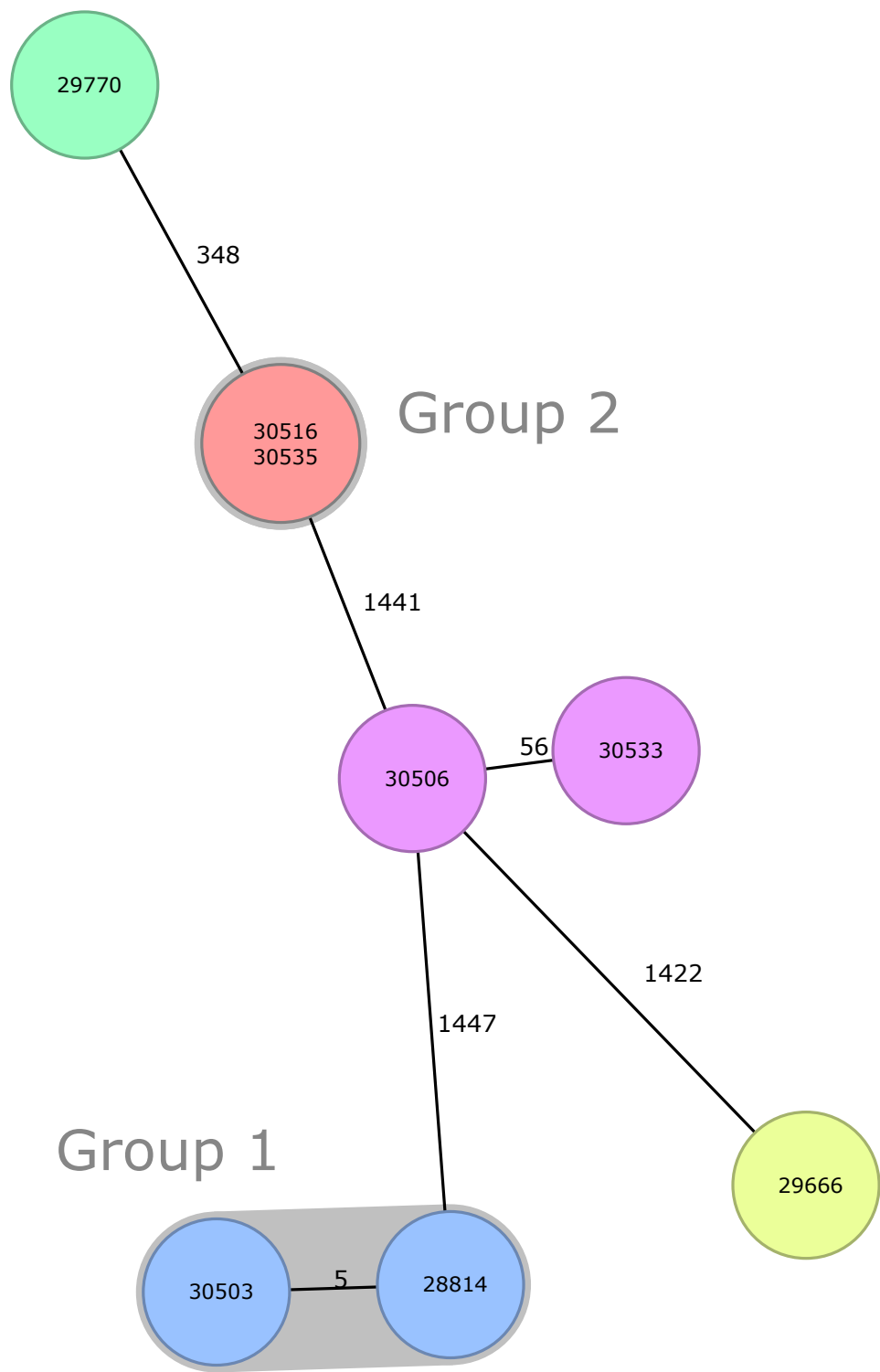
Supplemental Figure 8: *Legionella pneumophila* Automated Method Minimum Spanning Tree



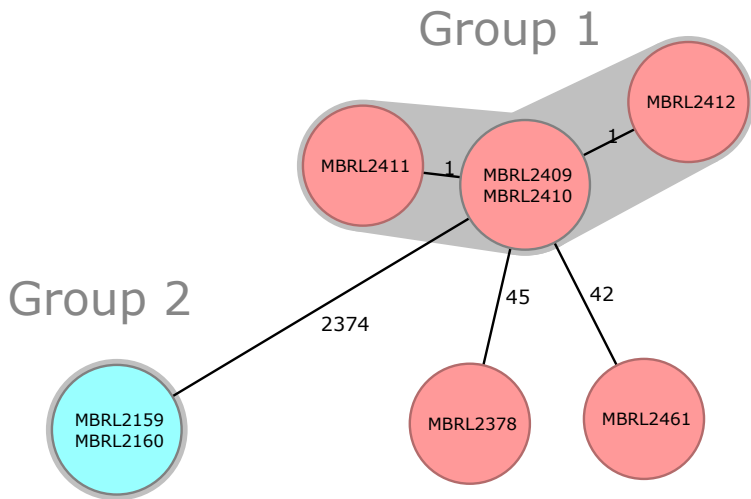
Supplemental Figure 9: *Clostridioides difficile* Manual Method Minimum Spanning Tree



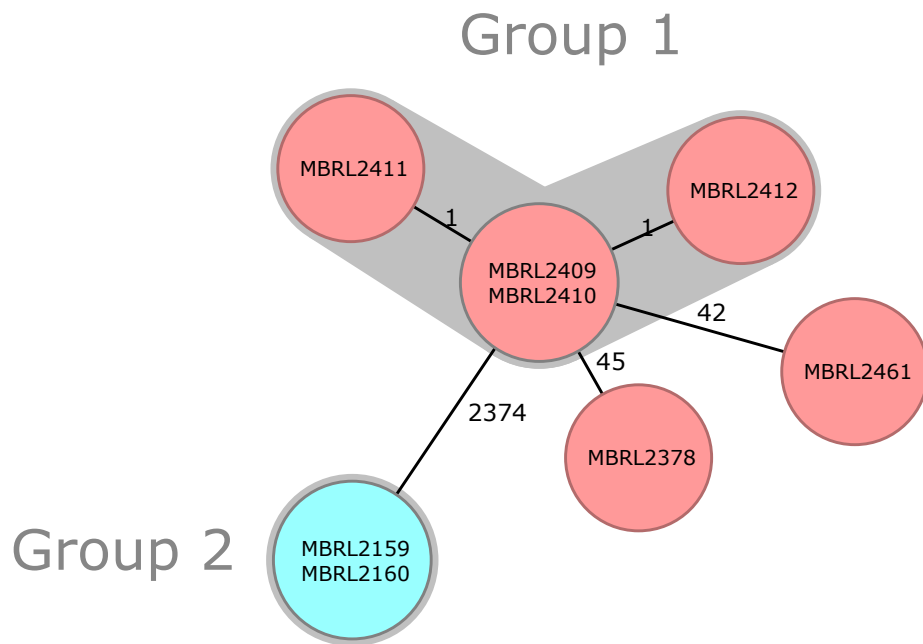
Supplemental Figure 10: *Clostridioides difficile* Automated Method Minimum Spanning Tree



Supplemental Figure 11: *Escherichia coli* Manual Method Minimum Spanning Tree

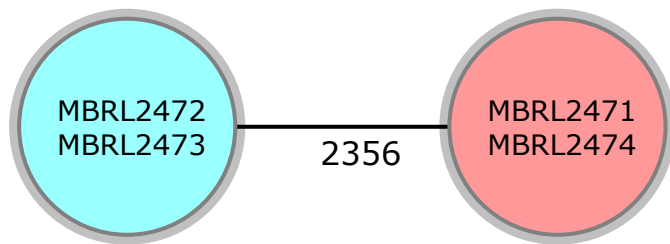


Supplemental Figure 12: *Escherichia coli* Automated Method Minimum Spanning Tree



Supplemental Figure 13: *Enterobacter cloacae* complex Manual Method Minimum Spanning Tree

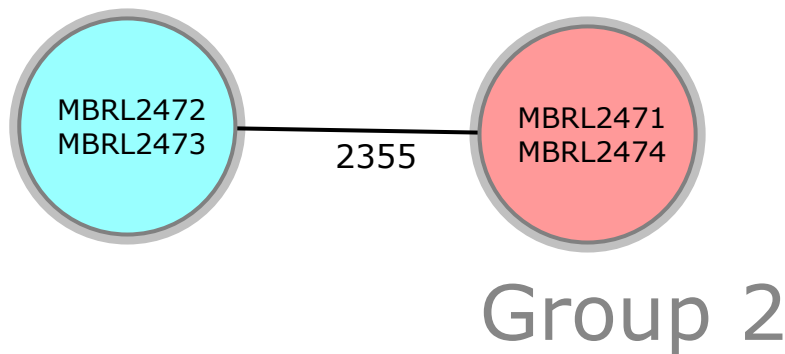
Group 1



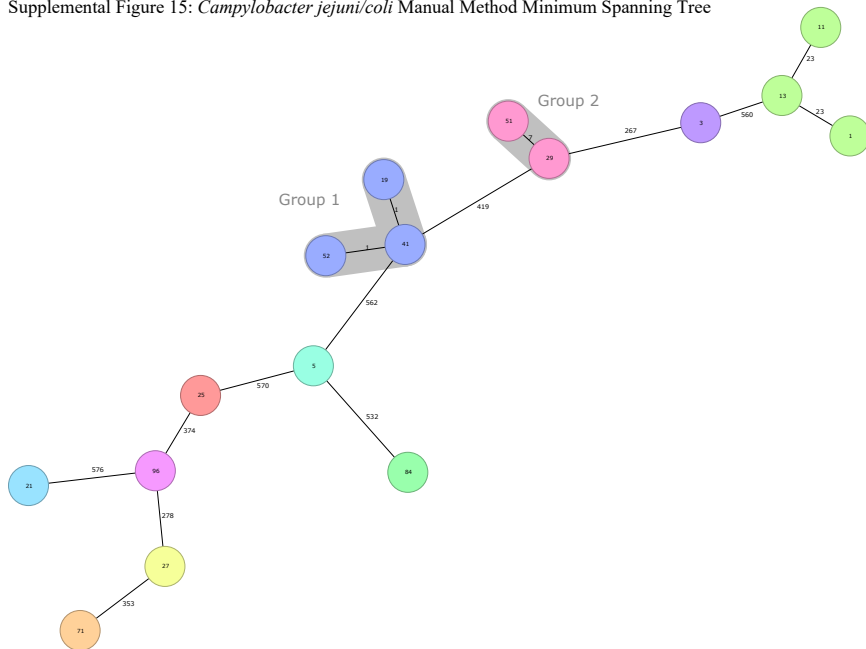
Group 2

Supplemental Figure 14: *Enterobacter cloacae* complex Automated Method Minimum Spanning Tree

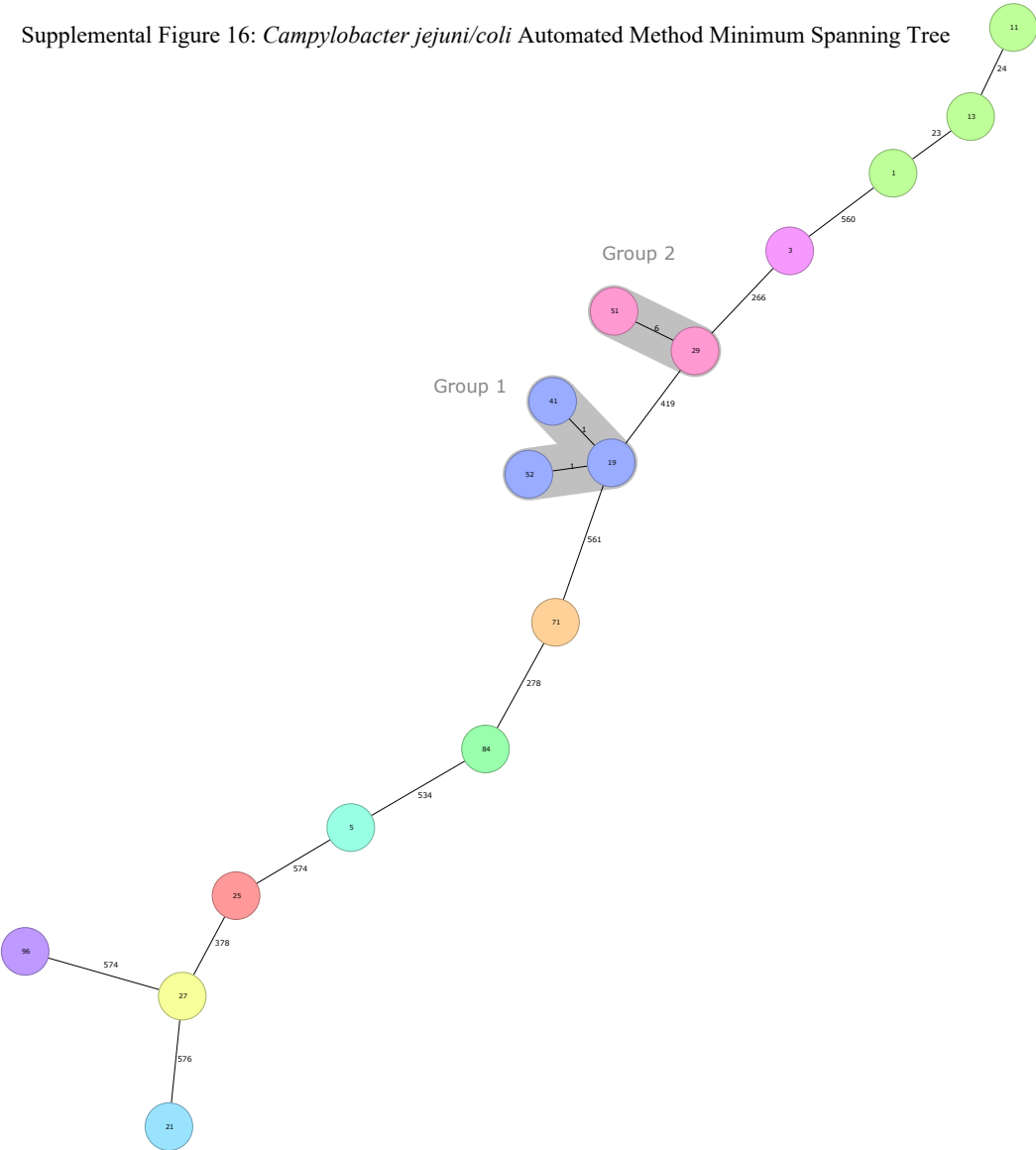
Group 1



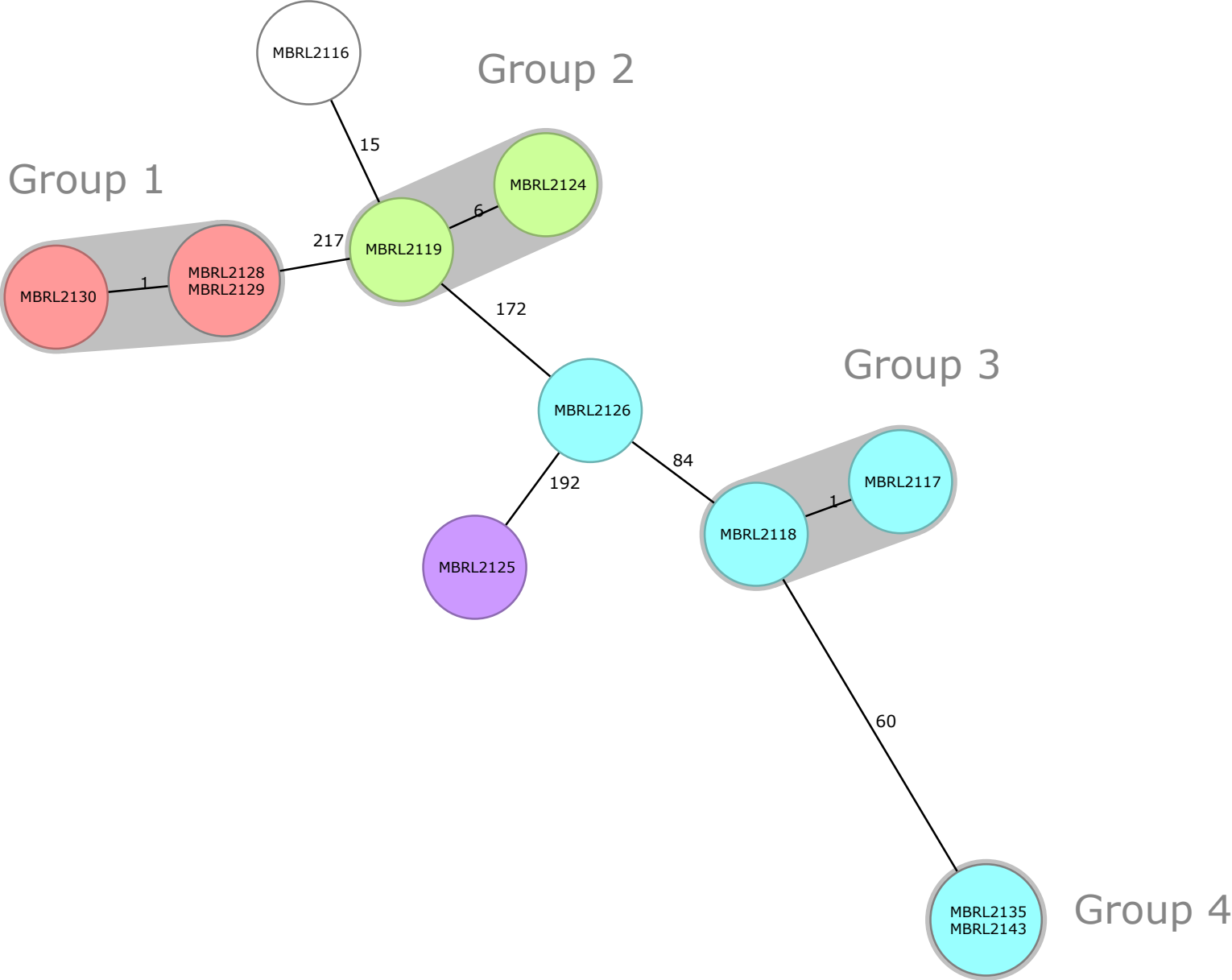
Supplemental Figure 15: *Campylobacter jejuni/coli* Manual Method Minimum Spanning Tree



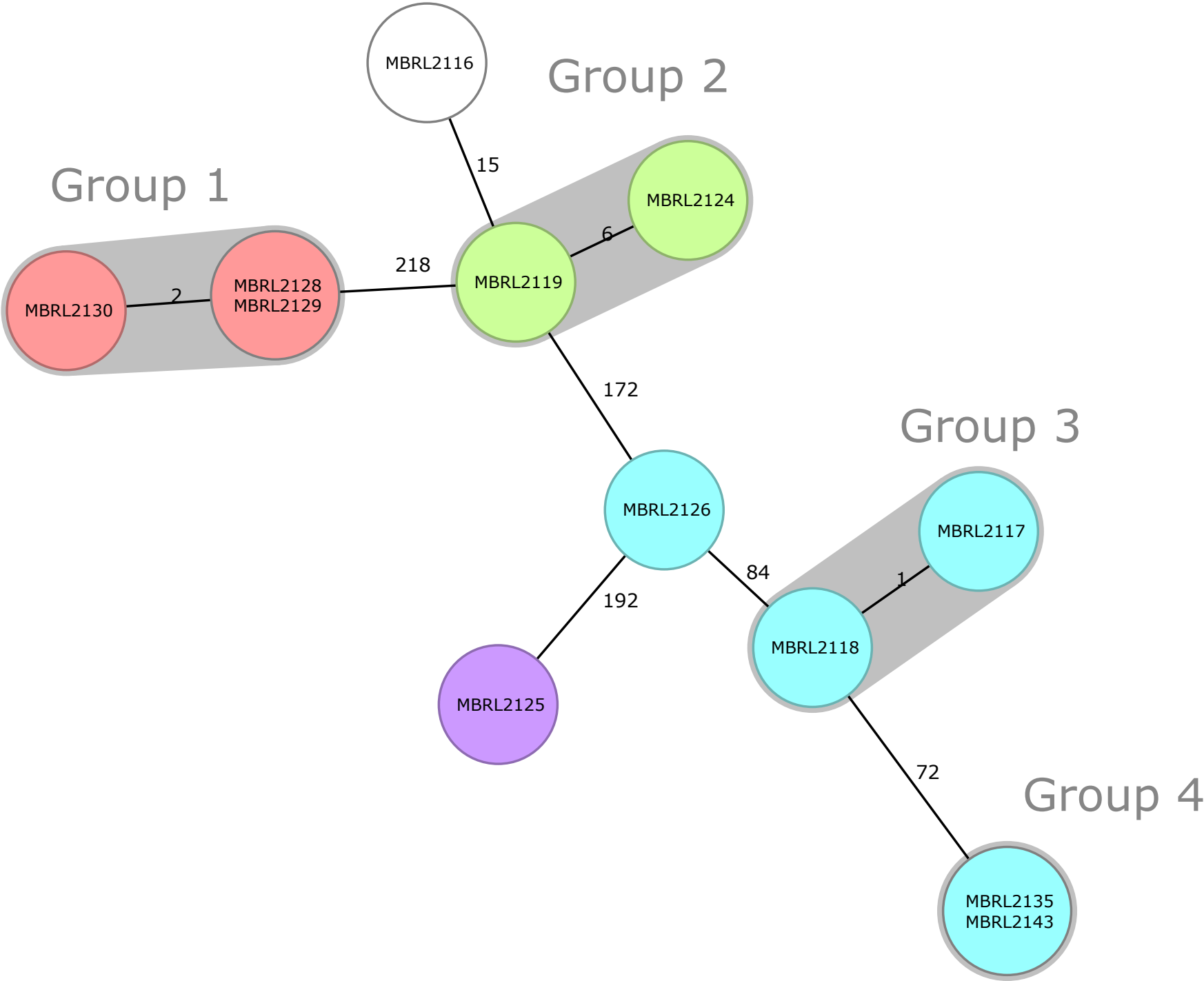
Supplemental Figure 16: *Campylobacter jejuni/coli* Automated Method Minimum Spanning Tree



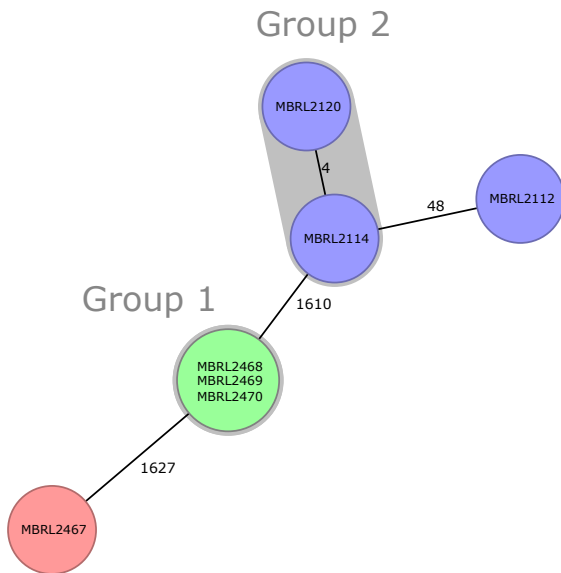
Supplemental Figure 17: *Enterococcus faecium* Manual Method Minimum Spanning Tree



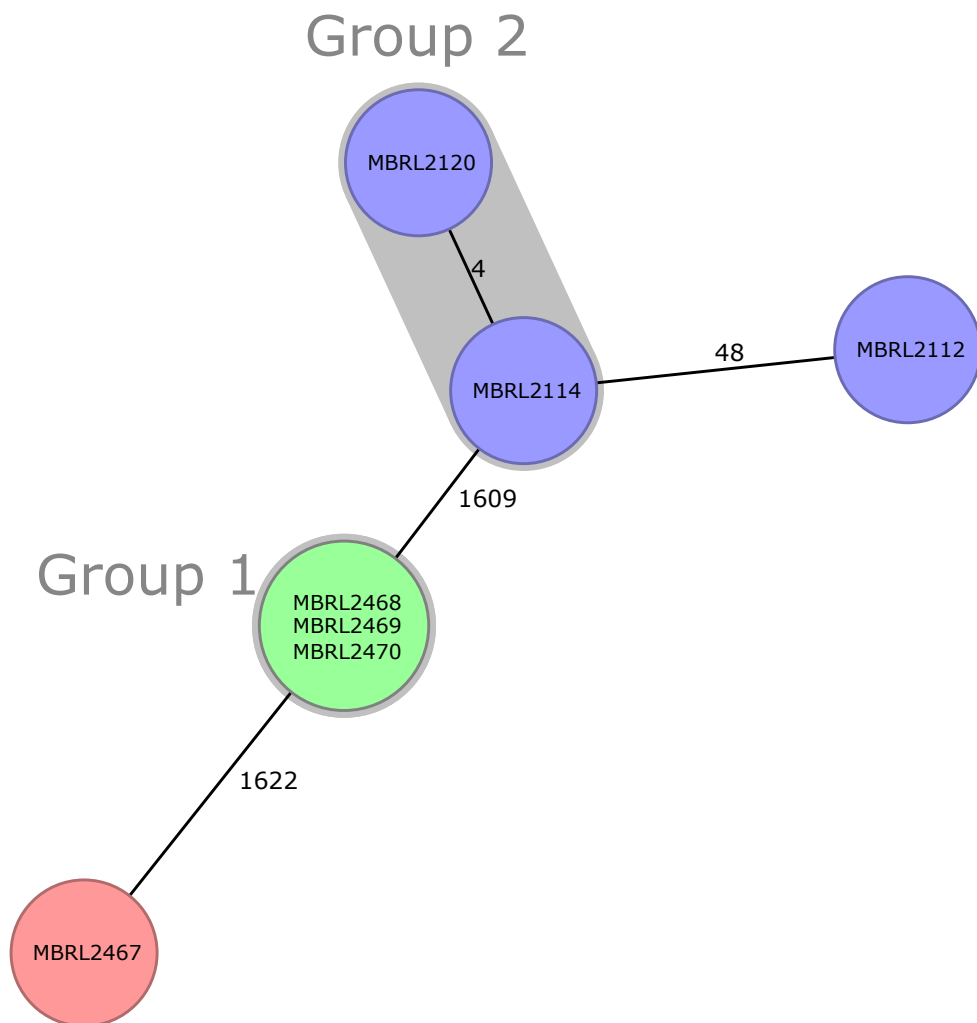
Supplemental Figure 18: *Enterococcus faecium* Automated Method Minimum Spanning Tree



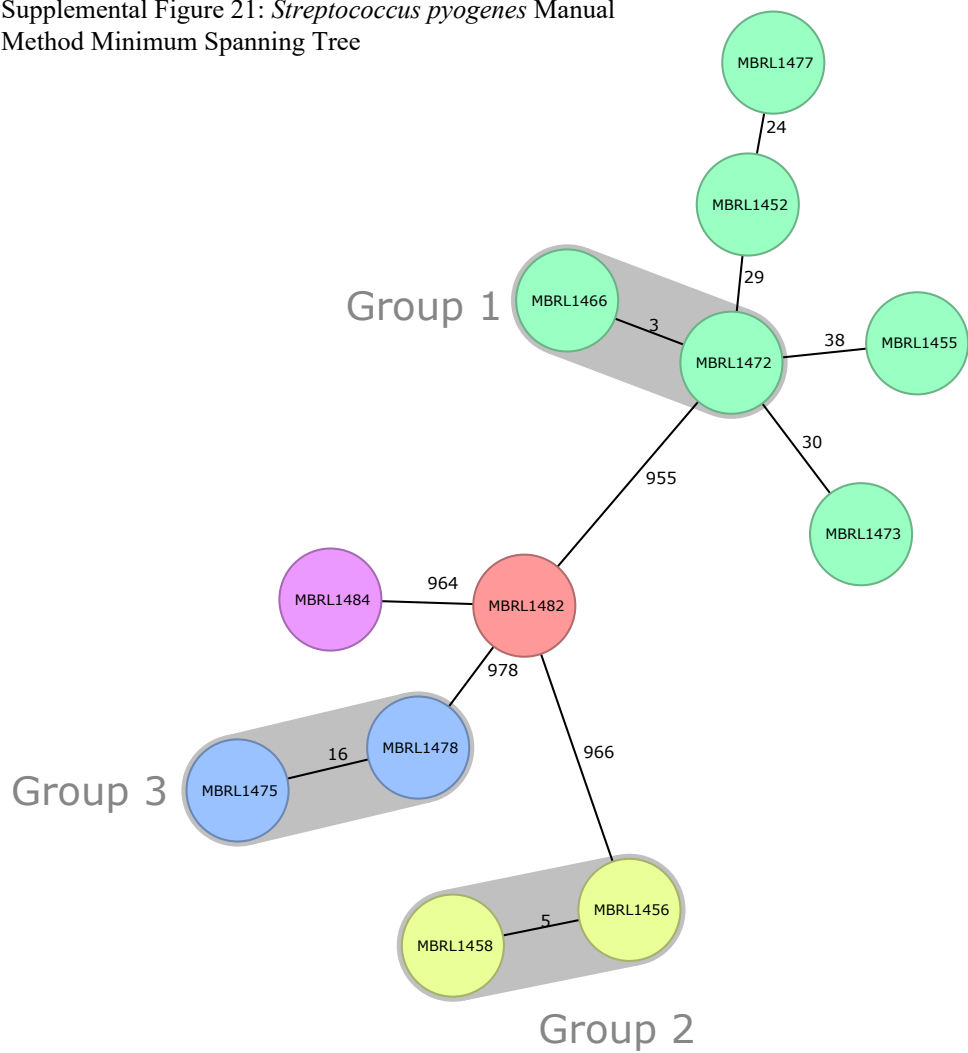
Supplemental Figure 19: *Enterococcus faecalis* Manual Method Minimum Spanning Tree



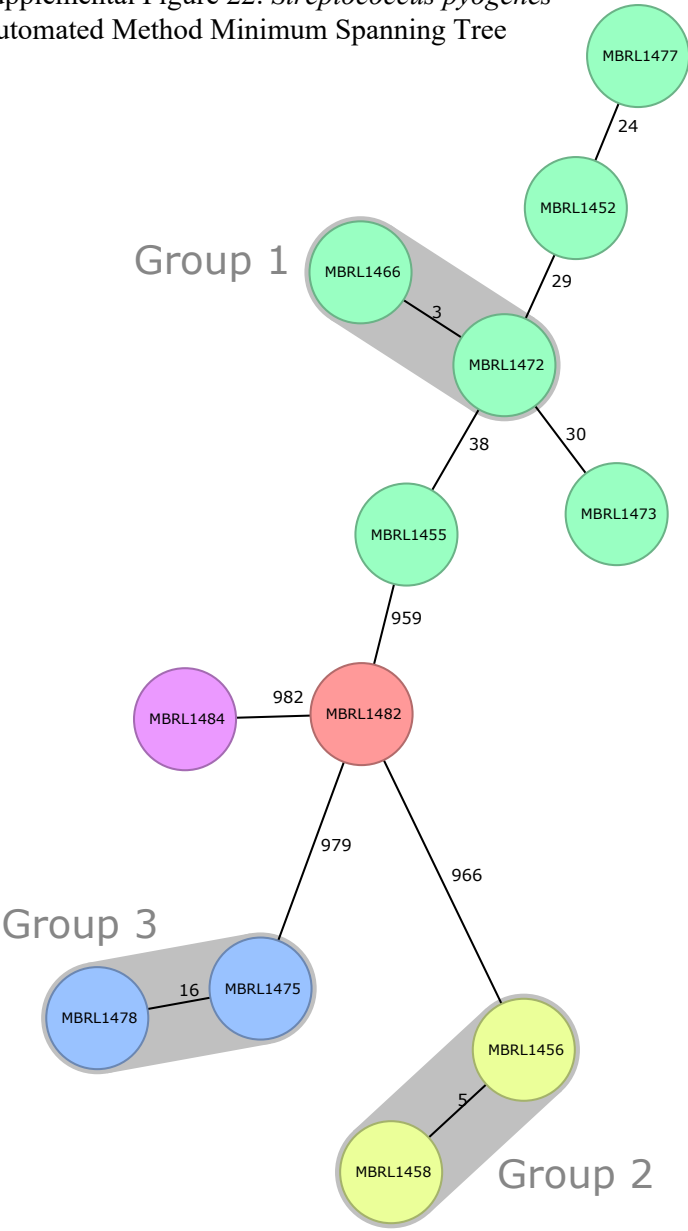
Supplemental Figure 20: *Enterococcus faecalis* Automated Method Minimum Spanning Tree



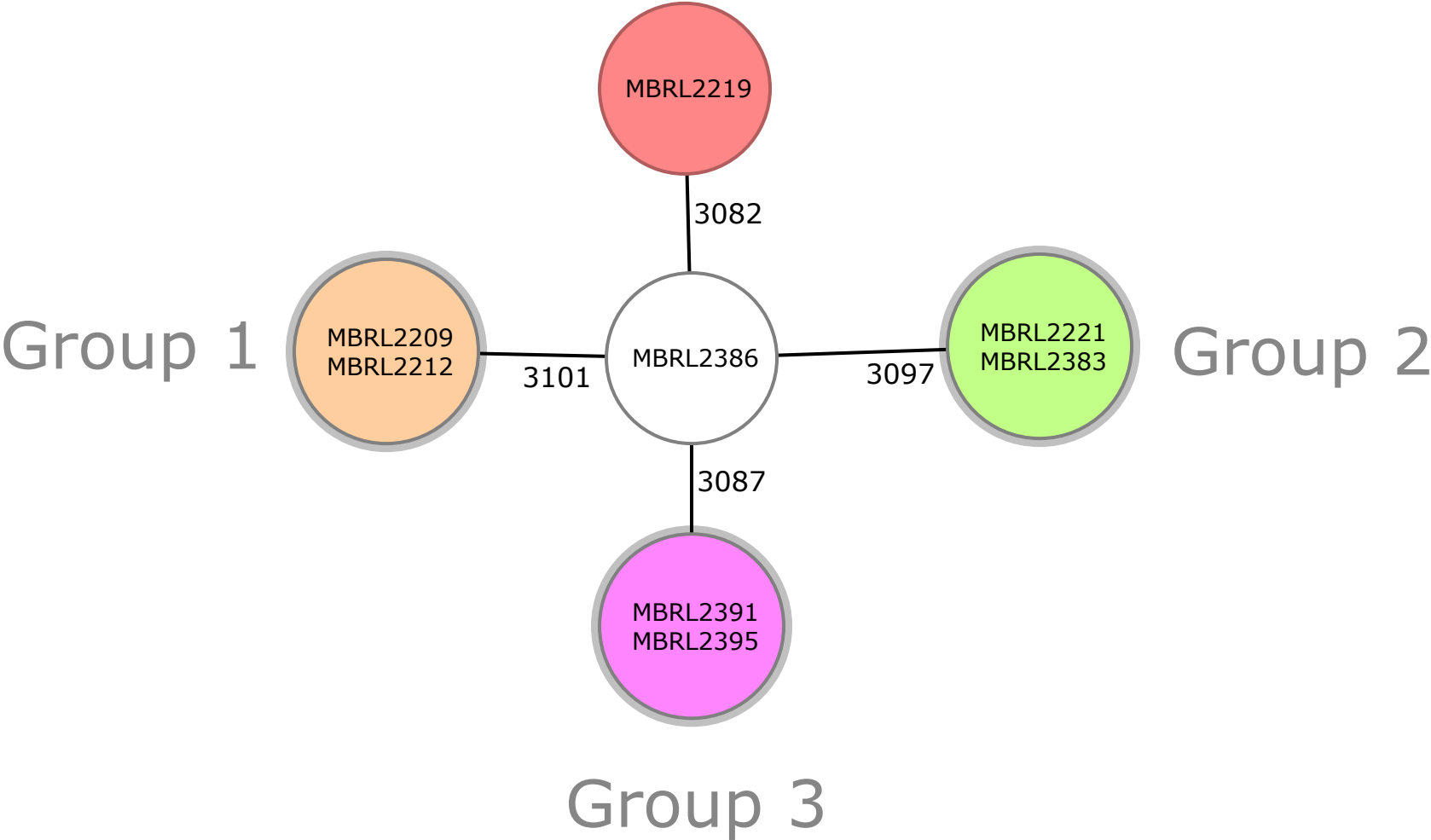
Supplemental Figure 21: *Streptococcus pyogenes* Manual
Method Minimum Spanning Tree



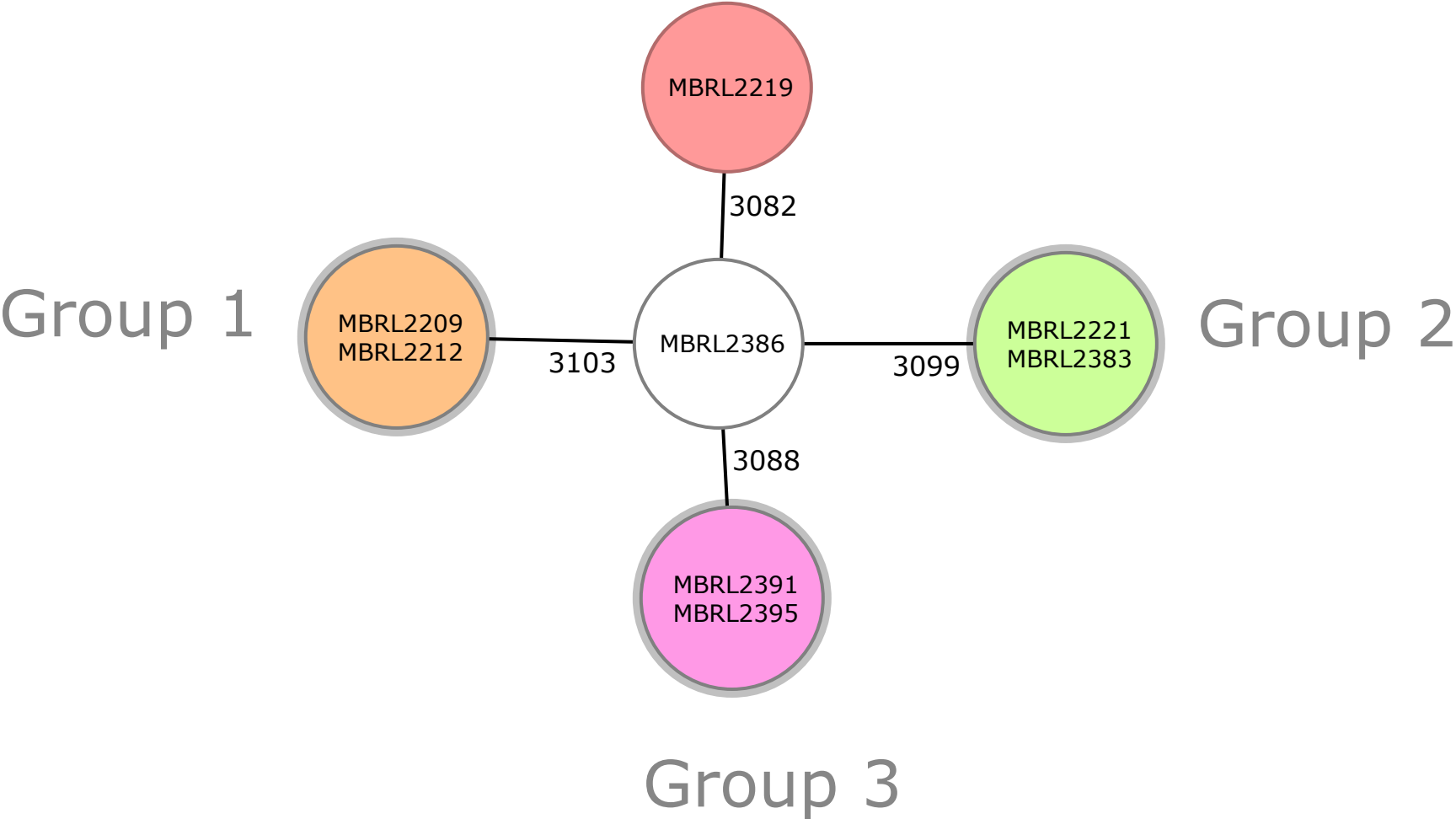
Supplemental Figure 22: *Streptococcus pyogenes*
Automated Method Minimum Spanning Tree



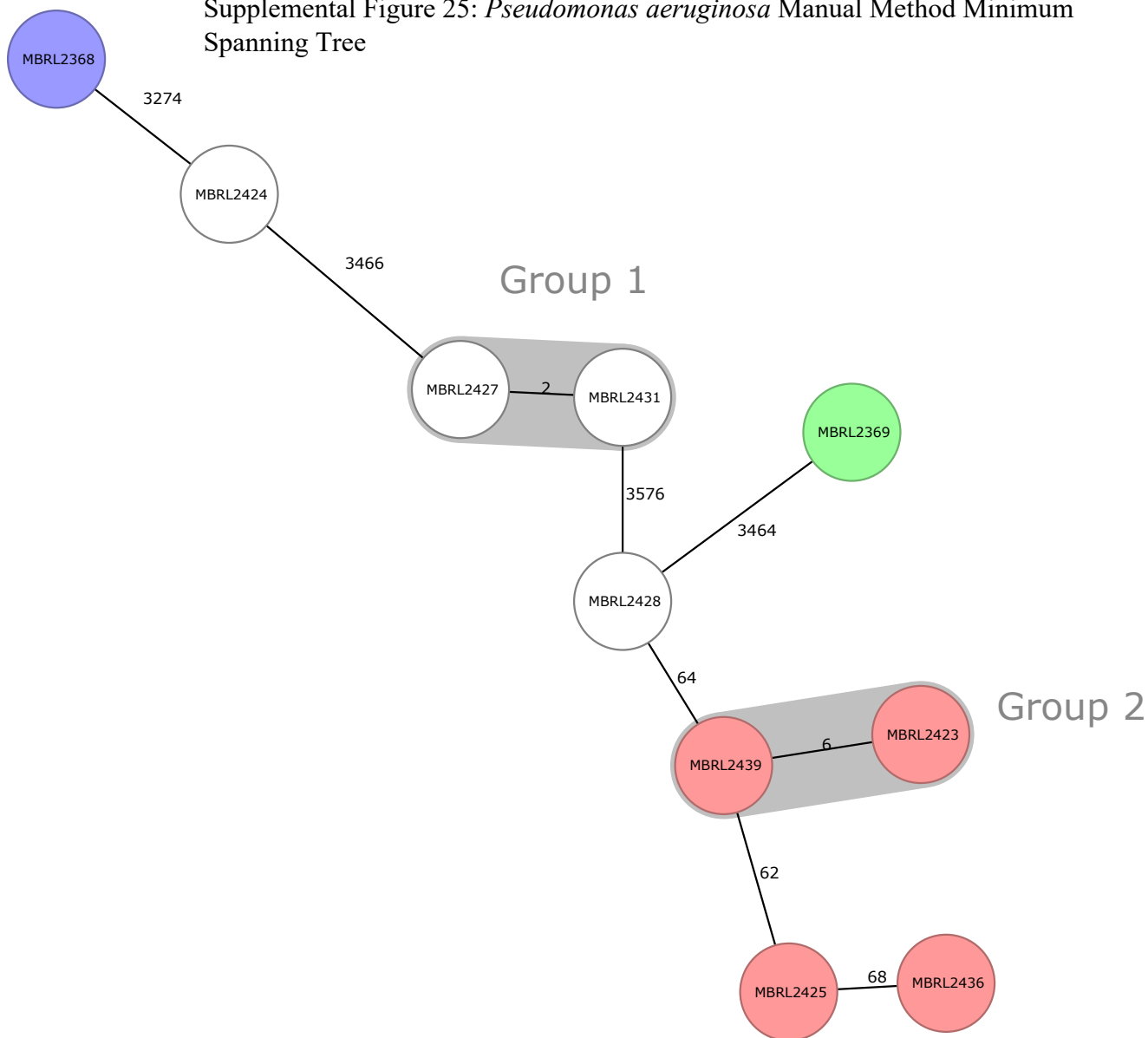
Supplemental Figure 23: *Serratia marcescens* Manual Method Minimum Spanning Tree



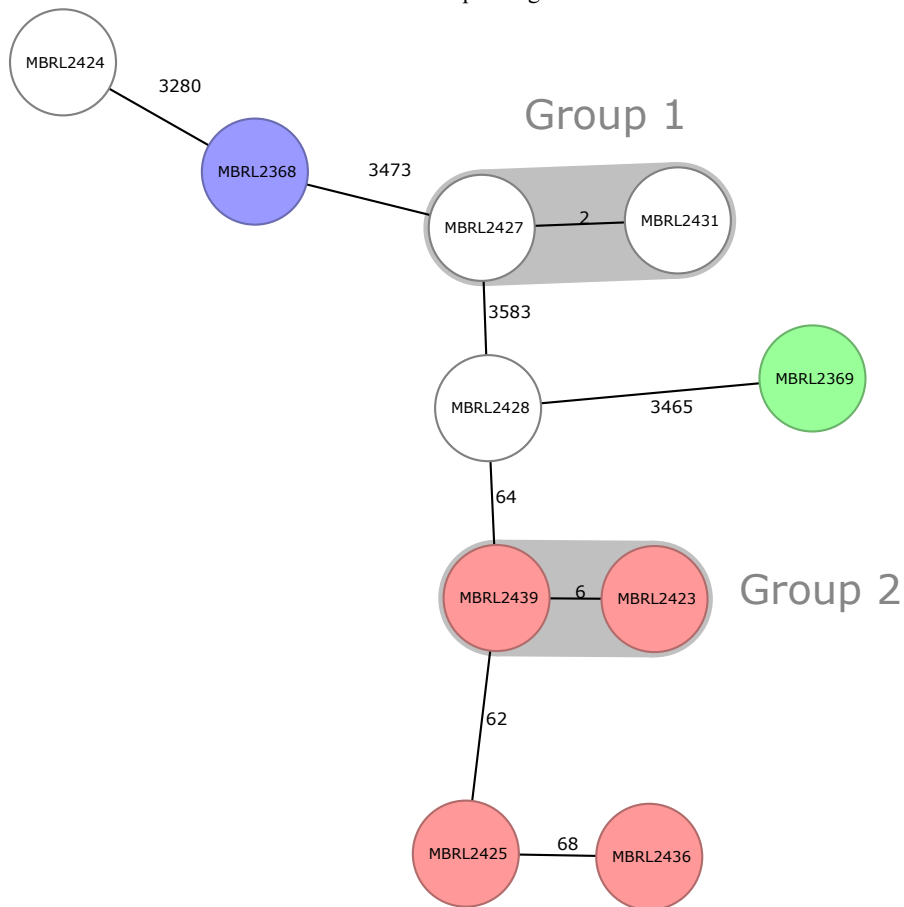
Supplemental Figure 24: *Serratia marcescens* Automated Method Minimum Spanning Tree



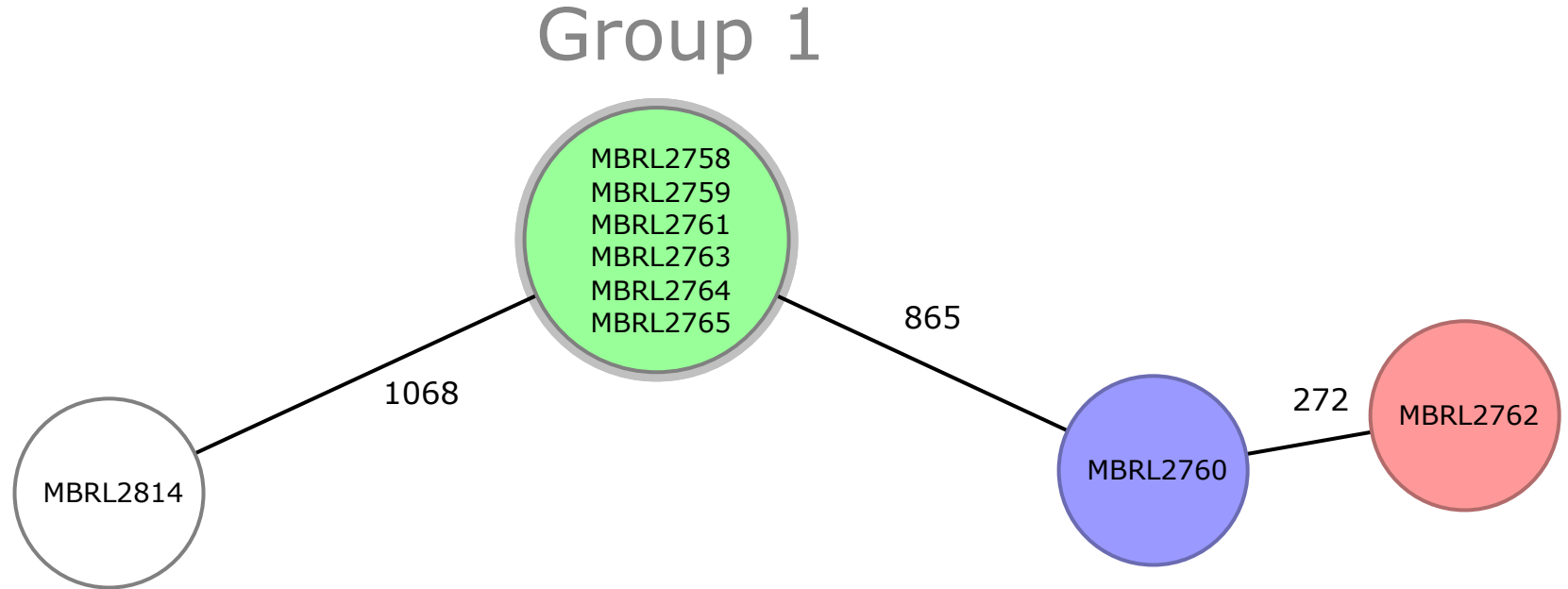
Supplemental Figure 25: *Pseudomonas aeruginosa* Manual Method Minimum Spanning Tree



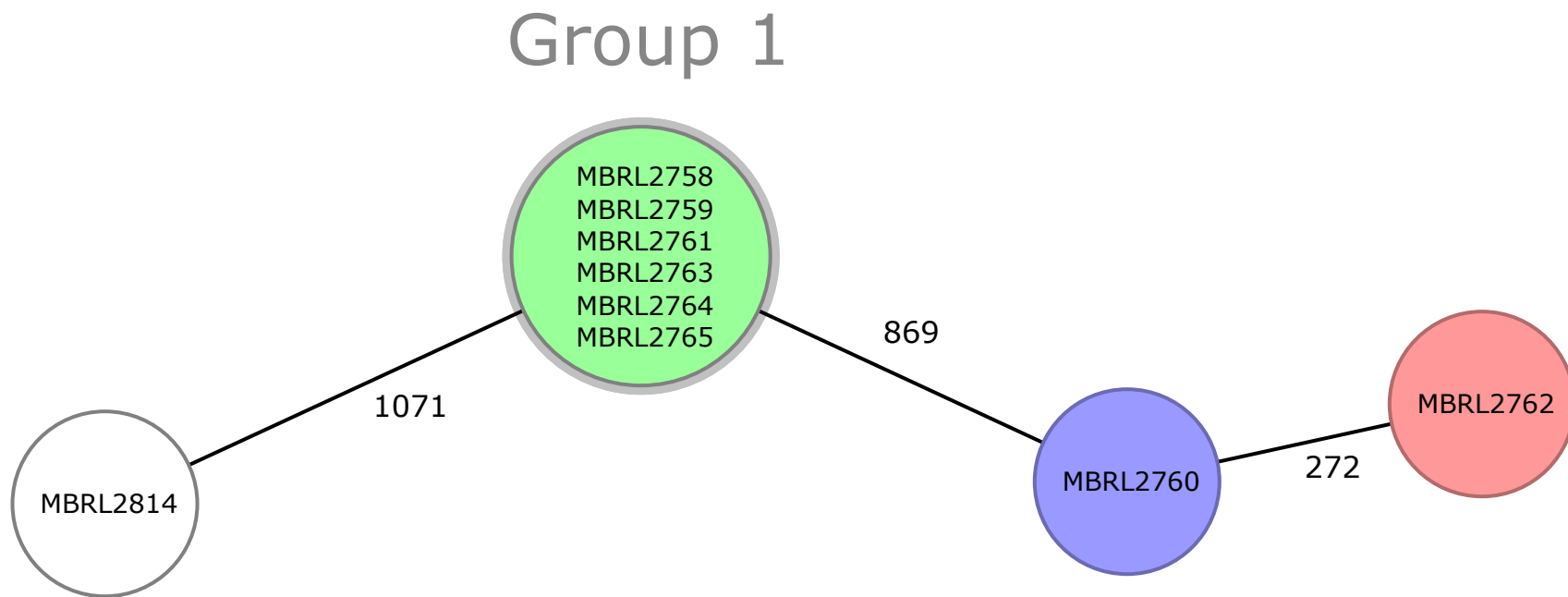
Supplemental Figure 26: *Pseudomonas aeruginosa* Automated Method Minimum Spanning Tree



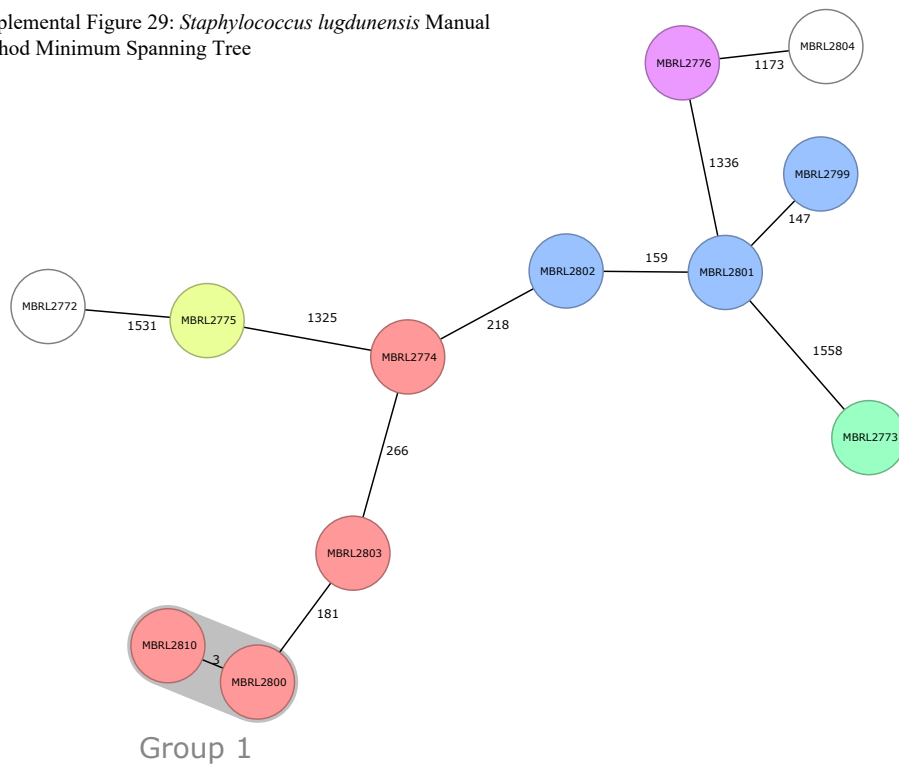
Supplemental Figure 27: *Streptococcus agalactiae* Manual Method Minimum Spanning Tree



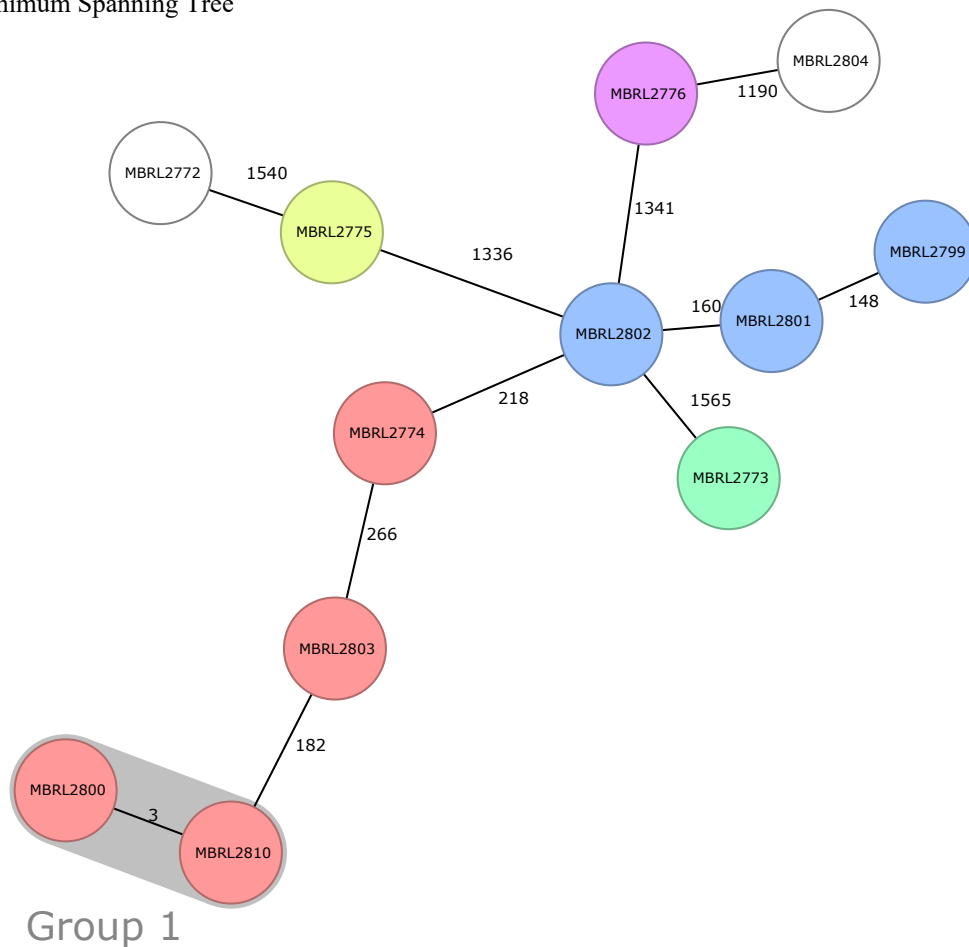
Supplemental Figure 28: *Streptococcus agalactiae* Automated Method Minimum Spanning Tree



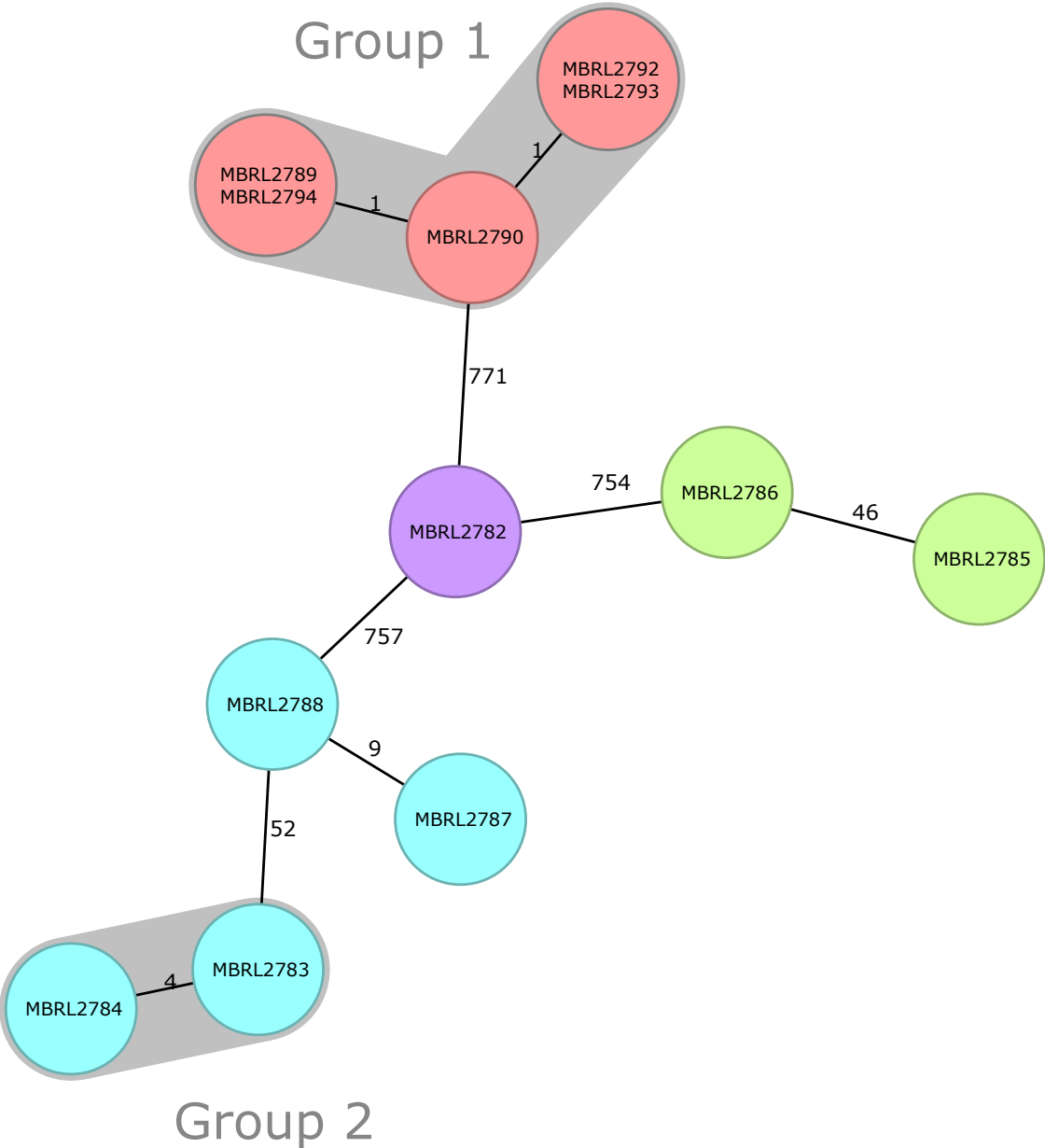
Supplemental Figure 29: *Staphylococcus lugdunensis* Manual
Method Minimum Spanning Tree



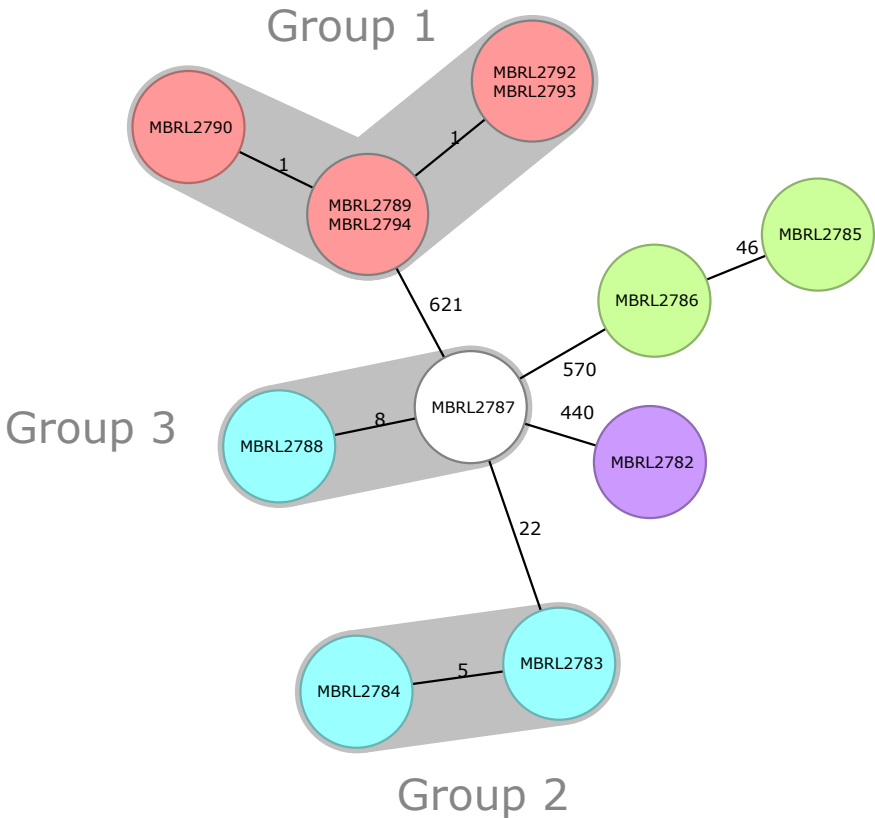
Supplemental Figure 30: *Staphylococcus lugdunensis* Automated Method
Minimum Spanning Tree



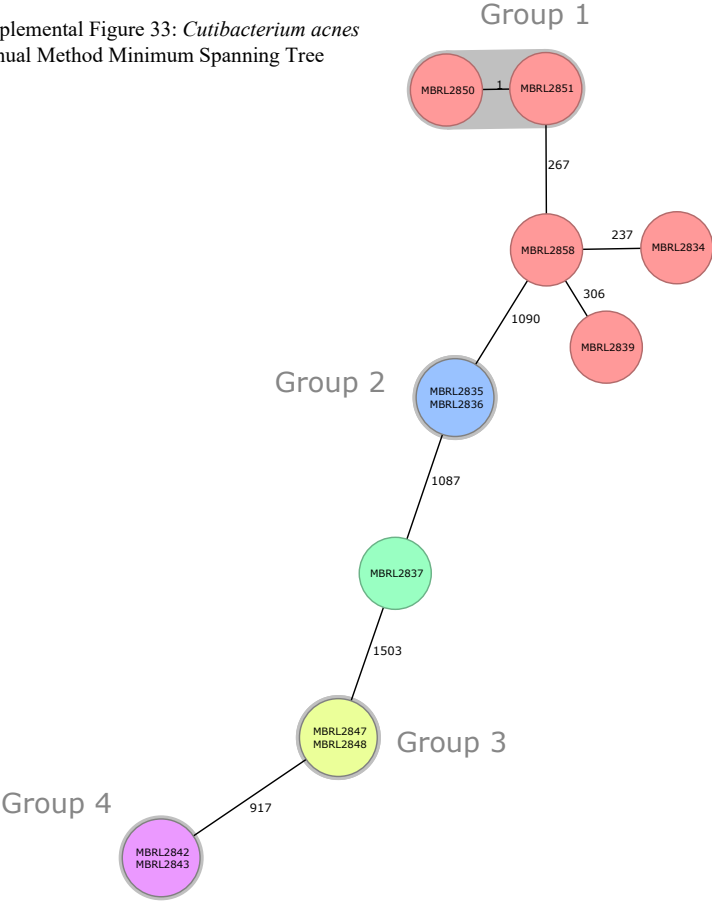
Supplemental Figure 31: *Staphylococcus epidermidis* Manual Method Minimum Spanning Tree



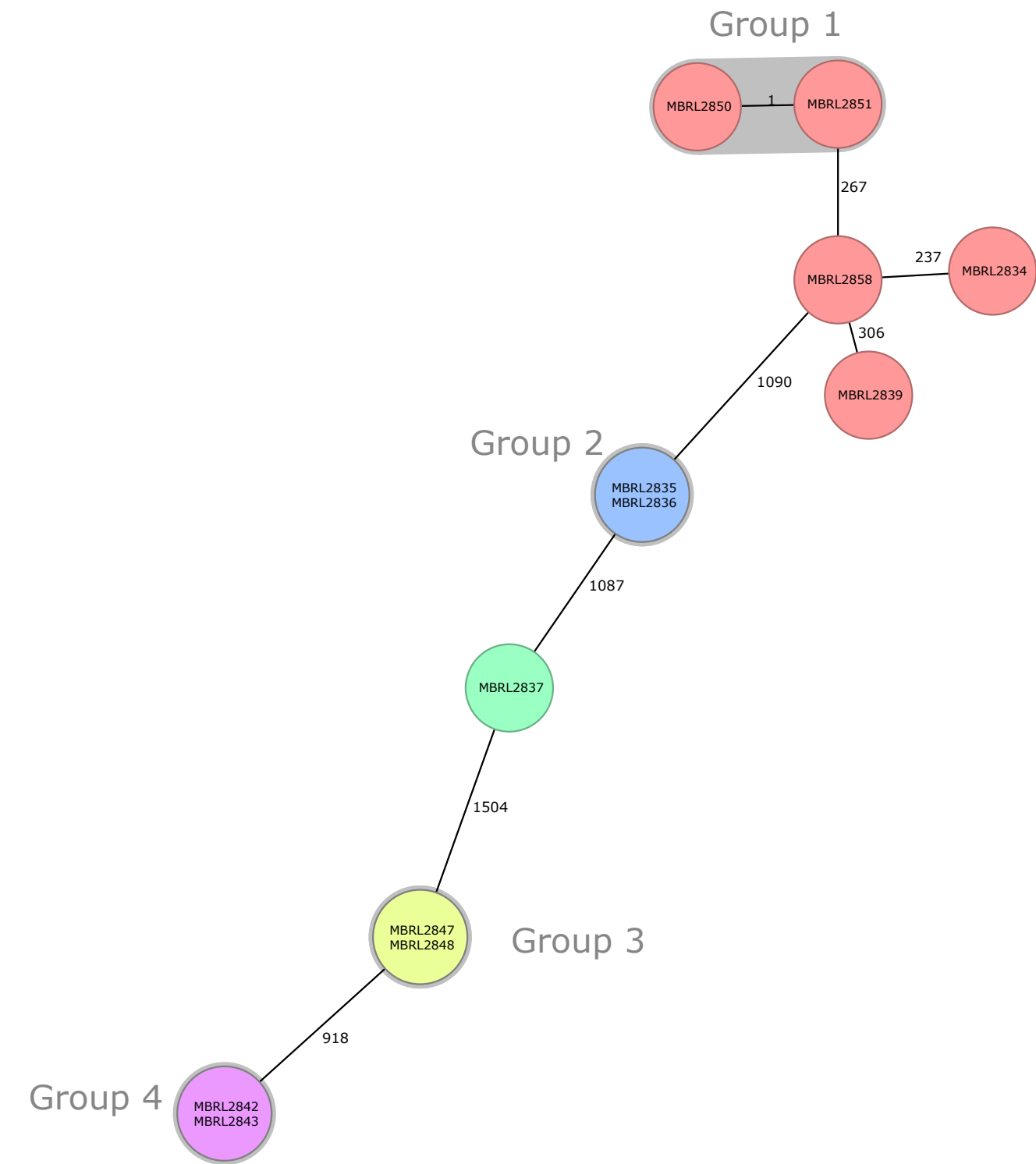
Supplemental Figure 32: *Staphylococcus epidermidis* Automated Method Minimum Spanning Tree



Supplemental Figure 33: *Cutibacterium acnes*
Manual Method Minimum Spanning Tree



Supplemental Figure 34: *Cutibacterium acnes* Automated Method Minimum Spanning Tree



Supplemental Table 1: Study Isolates

Organism	Specimen Identification	Relatedness Category	Source
<i>Staphylococcus aureus</i>	BTP ^a 197	Group 1	2014-2017 Mayo Clinic neonatal intensive care unit methicillin-resistant <i>Staphylococcus aureus</i> outbreak collection
	BTP 198	Group 2	
	BTP 199	Group 1	
	BTP 200	Group 1	
	BTP 201	Group 1	
	BTP 202	Group 1	
	BTP 203	Group 1	
	BTP 204	Group 1	
	BTP 205	Group 1	
	BTP 206	No group	
	BTP 207	Group 1	
	BTP 208	No group	
	BTP 209	No group	
	BTP 210	Group 1	
	BTP 211	Group 1	
	BTP 212	Group 2	
	BTP 213	No group	
	BTP 214	No group	
	BTP 215	No group	
	BTP 216	No group	
	BTP 217	Group 4	
	BTP 218	Group 4	
	BTP 219	Group 2	
	BTP 220	Group 2	
	BTP 221	Group 2	
	BTP 222	Group 2	
	BTP 223	Group 2	
	BTP 224	Group 3	
	BTP 225	Group 2	
	BTP 226	Group 1	
	BTP 227	Group 1	
	BTP 228	Group 2	
	BTP 229	Group 2	
	BTP 230	Group 2	
	BTP 231	Group 1	
	BTP 232	Group 1	
	BTP 233	Group 2	
	BTP 234	Group 1	

	BTP 235	Group 1	
	BTP 236	Group 1	
	BTP 237	Group 2	
	BTP 238	Group 2	
	BTP 239	Group 2	
	BTP 240	Group 2	
	BTP 241	Group 2	
	BTP 242	Group 2	
	BTP 243	Group 1	
	BTP 244	Group 2	
	BTP 245	Group 1	
	BTP 246	Not included in analysis ¹	
	BTP 247	Group 2	
	BTP 248	Group 1	
	BTP 249	Group 1	
	BTP 250	No group	
	BTP 251	Group 3	
	BTP 252	No group	
	BTP 253	Group 1	
	BTP 254	Group 2	
	BTP 255	No group	
	BTP 256	Group 2	
	BTP 257	Group 1	
	BTP 258	Group 2	
	USA100	No group	Pulsed-field gel electrophoresis type strains
	USA200	Not included in analysis ²	
	USA300	No group	
	USA400	No group	
	USA500	No group	
	USA600	No group	
	USA700	No group	
	USA800	No group	
	USA900	No group	
	USA1000	No group	
<i>Acinetobacter baumannii</i>	ARLG ^b -1256	Group 3	Antibacterial Resistance Leadership Group
	ARLG-1257	Possibly related to Groups 2 and 3	
	ARLG-1262	Group 2	
	ARLG-1263	Group 2	

	ARLG-1264	Possibly related to Group 1	
	ARLG-1266	Group 3	
	ARLG-1275	Group 1	
	ARLG-1278	Group 1	
<i>Klebsiella pneumoniae</i>	ARLG-1159	Possibly related to Group 1	
	ARLG-1163	Possibly related to Group 1 and ARLG-1168	
	ARLG-1164	No group	
	ARLG-1167	Group 1	
	ARLG-1168	Possibly related to ARLG-1163	
	ARLG-1169	No group	
	ARLG-1719	Group 1	
	ARLG-1720	Group 1	
<i>Legionella pneumophila</i>	MBRL ^c 1495	Group 2	Minnesota Department of Health
	MBRL 1496	Group 1	
	MBRL 1497	Group 1	
	MBRL 1498	No group	
	MBRL 1499	No group	
	MBRL 1504	Possibly related to Group 2	
	MBRL 1508	Group 2	
<i>Clostridioides difficile</i>	28814	Group 1	Mayo Clinic Bacteriology Laboratory
	29666	No group	
	29770	No group	
	30503	Group 1	
	30506	No group	
	30516	Group 2	
	30533	No group	
	30535	Group 2	
<i>Escherichia coli</i>	MBRL 2159	Group 2	
	MBRL 2160	Group 2	
	MBRL 2378	No group	
	MBRL 2409	Group 1	
	MBRL 2410	Group 1	
	MBRL 2411	Group 1	
	MBRL 2412	Group 1	
	MBRL 2461	No group	
	MBRL 2471	Group 2	

<i>Enterobacter cloacae</i> complex		MBRL 2472	Group 1	
		MBRL 2473	Group 1	
		MBRL 2474	Group 2	
<i>Campylobacter jejuni/coli</i>	<i>C. jejuni</i>	1	Possibly related to isolate 13	Mayo Clinic Gastrointestinal Barrier Function Laboratory
	<i>C. jejuni</i>	3	No group	
	<i>C. jejuni</i>	5	No group	
	<i>C. jejuni</i>	11	Possibly related to isolate 13	
	<i>C. jejuni</i>	13	Possibly related to isolates 1 and 11	
	<i>C. jejuni</i>	19	Group 1	
	<i>C. jejuni</i>	21	No group	
	<i>C. coli</i>	25	No group	
	<i>C. coli</i>	27	No group	
	<i>C. jejuni</i>	29	Group 2	
	<i>C. jejuni</i>	41	Group 1	
	<i>C. jejuni</i>	51	Group 2	
	<i>C. jejuni</i>	52	Group 1	
	<i>C. jejuni</i>	71	No group	
	<i>C. jejuni</i>	84	No group	
	<i>C. jejuni</i>	96	No group	
<i>Enterococcus faecium</i>		MBRL 2116	Possibly related to Group 2	Mayo Clinic Infectious Diseases Research Laboratory
		MBRL 2117	Group 3	
		MBRL 2118	Group 3	
		MBRL 2119	Group 2	
		MBRL 2124	Group 2	
		MBRL 2125	No group	
		MBRL 2126	No group	
		MBRL 2128	Group 1	
		MBRL 2129	Group 1	
		MBRL 2130	Group 1	
		MBRL 2135	Group 4	
		MBRL 2143	Group 4	
<i>Enterococcus faecalis</i>		MBRL 2112	No group	Mayo Clinic Bacteriology Laboratory
		MBRL 2114	Group 2	
		MBRL 2120	Group 2	
		MBRL 2467	No group	
		MBRL 2468	Group 1	
		MBRL 2469	Group 1	
		MBRL 2470	Group 1	

<i>Streptococcus pyogenes</i>	MBRL 1452	Possibly related to Group 1 and MBRL 1477	Minnesota Department of Health
	MBRL 1455	PR-Group 1	
	MBRL 1456	Group 2	
	MBRL 1458	Group 2	
	MBRL 1466	Group 1	
	MBRL 1472	Group 1	
	MBRL 1473	Possibly related to Group 1	
	MBRL 1475	Group 3	
	MBRL 1477	Possibly related to MBRL 1452	
	MBRL 1478	Group 3	
	MBRL 1482	No group	
	MBRL 1484	No group	
<i>Serratia marcescens</i>	MBRL 2209	Group 1	Mayo Clinic Bacteriology Laboratory
	MBRL 2212	Group 1	
	MBRL 2219	No group	
	MBRL 2221	Group 2	
	MBRL 2383	Group 2	
	MBRL 2386	No group	
	MBRL 2391	Group 3	
	MBRL 2395	Group 3	
<i>Pseudomonas aeruginosa</i>	MBRL 2368	No group	
	MBRL 2369	No group	
	MBRL 2423	Group 2	
	MBRL 2424	No group	
	MBRL 2425	Possibly related to Group 2 and MBRL 2436	
	MBRL 2427	Group 1	
	MBRL 2428	Possibly related to Group 2	
	MBRL 2431	Group 1	
	MBRL 2436	Possibly related to MBRL 2425	
	MBRL 2439	Group 2	
<i>Streptococcus agalactiae</i>	MBRL 2758	Group 1	
	MBRL 2759	Group 1	
	MBRL 2760	No group	
	MBRL 2761	Group 1	
	MBRL 2762	No group	

	MBRL 2763	Group 1	ATCC ^d 13813
	MBRL 2764	Group 1	
	MBRL 2765	Group 1	
	MBRL 2814	No group	
<i>Staphylococcus lugdunensis</i>	MBRL 2772	No group	Mayo Clinic Bacteriology Laboratory
	MBRL 2773	No group	
	MBRL 2774	No group	
	MBRL 2775	No group	
	MBRL 2776	No group	
	MBRL 2799	No group	Mayo Clinic Infectious Diseases Research Laboratory
	MBRL 2800	Group 1	
	MBRL 2801	No group	
	MBRL 2802	No group	
	MBRL 2803	No group	
	MBRL 2804	No group	
	MBRL 2810	Group 1	
<i>Staphylococcus epidermidis</i>	MBRL 2782	No group	ATCC 14990
	MBRL 2783	Group 2	Mayo Clinic Infectious Diseases Research Laboratory
	MBRL 2784	Group 2	
	MBRL 2785	No group	
	MBRL 2786	No group	
	MBRL 2787	Manual method: Possibly related to MBRL 2788 Automated method: Group 3	
	MBRL 2788	Manual method: Possibly related to MBRL 2787 Automated method: Group 3	
	MBRL 2789	Group 1	
	MBRL 2790	Group 1	
	MBRL 2792	Group 1	
	MBRL 2793	Group 1	
	MBRL 2794	Group 1	
<i>Cutibacterium acnes</i>	MBRL 2834	No group	Dr. Faten El Sayed, Assistance Publique- Hôpitaux de Paris, Université Paris Saclay
	MBRL 2835	Group 2	
	MBRL 2836	Group 2	
	MBRL 2837	No group	
	MBRL 2839	No group	

	MBRL 2842	Group 4	
	MBRL 2843	Group 4	
	MBRL 2847	Group 3	
	MBRL 2848	Group 3	
	MBRL 2850	Group 1	
	MBRL 2851	Group 1	
	MBRL 2858	No group	

^aBTP, Bacterial typing project

^bARLG, Antibacterial Resistance Leadership Group

^cMBRL, Mayo Bacteriology Research Laboratory

^dATCC, American Type Culture Collection

¹Excluded from analysis due to a pipetting error on the Clear DxTM instrument that resulted in no sequence generated.

²Excluded from analysis due to contamination with another organism upon subculture.

Supplemental Table 2: *Staphylococcus aureus* Allelic Differences Between Isolates

Manual WGS Method



≤ 8 related (green), 9-29 possibly related (yellow), ≥ 30 unrelated (red)

Supplemental Table 3: *Acinetobacter baumannii* Allelic Differences Between Isolates

Manual WGS Method									
Automated WGS Method	Isolate	ARLG-1256	ARLG-1257	ARLG-1262	ARLG-1263	ARLG-1264	ARLG-1266	ARLG-1275	ARLG-1278
	ARLG-1256	0	26	54	52	65	2	2209	2208
	ARLG-1257	26	0	40	38	51	24	2210	2209
	ARLG-1262	54	40	0	7	17	52	2209	2208
	ARLG-1263	52	38	7	0	19	50	2210	2209
	ARLG-1264	65	51	17	17	0	63	2212	2211
	ARLG-1266	2	24	52	52	63	0	2208	2207
	ARLG-1275	2209	2210	2209	2209	2212	2208	0	2
	ARLG-1278	2208	2209	2208	2208	2211	2207	2	0

≤9 related (green), 10-200 possibly related (yellow), ≥201 unrelated (red)

Supplemental Table 4: *Klebsiella pneumoniae* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method	Isolate	ARLG-1159	ARLG-1163	ARLG-1164	ARLG-1167	ARLG-1168	ARLG-1169	ARLG-1719	ARLG-1720
	ARLG-1159	0	38	1912	27	44	1872	24	22
	ARLG-1163	38	0	1915	42	25	1872	39	37
	ARLG-1164	1912	1915	0	1911	1912	1938	1912	1911
	ARLG-1167	27	42	1911	0	47	1869	7	5
	ARLG-1168	44	25	1912	47	0	1870	44	42
	ARLG-1169	1872	1872	1938	1869	1870	0	1870	1869
	ARLG-1719	24	39	1912	7	44	1870	0	2
	ARLG-1720	22	37	1911	5	42	1869	2	0

≤15 related (green), 16-50 possibly related (yellow), ≥51 unrelated (red)

Supplemental Table 5: *Legionella pneumophila* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method	Isolate	MBRL 1495	MBRL 1496	MBRL 1497	MBRL 1498	MBRL 1499	MBRL 1504	MBRL 1508	MBRL 1509
	MBRL 1495	0	1402	1403	1349	1347	27	3	1403
	MBRL 1496	1402	0	1	1438	1438	1404	1403	14
	MBRL 1497	1403	1	0	1439	1439	1405	1404	15
	MBRL 1498	1349	1438	1439	0	66	1353	1349	1440
	MBRL 1499	1347	1438	1439	66	0	1351	1347	1440
	MBRL 1504	27	1404	1405	1353	1351	0	24	1405
	MBRL 1508	3	1403	1404	1349	1347	24	0	1404
	MBRL 1509	1403	14	15	1440	1440	1405	1404	0

≤4 related (green), 5-30 possibly related (yellow), ≥31 unrelated (red)

Supplemental Table 6: *Clostridioides difficile* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method

Isolate	28814	29666	29770	30503	30506	30516	30533	30535
28814	0	1568	1539	5	1449	1524	1435	1523
29666	1568	0	1558	1569	1419	1566	1404	1565
29770	1539	1558	0	1542	1460	348	1442	347
30503	5	1569	1542	0	1450	1527	1436	1526
30506	1449	1419	1460	1450	0	1440	55	1439
30516	1524	1566	348	1527	1440	0	1423	0
30533	1435	1404	1442	1436	55	1423	0	1422
30535	1523	1565	347	1526	1439	0	1422	0

≤6 related (green), 7-50 possibly related (yellow), ≥51 unrelated (red)

Supplemental Table 7: *Escherichia coli* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method	Isolate	MBRL 2159	MBRL 2160	MBRL 2378	MBRL 2409	MBRL 2410	MBRL 2411	MBRL 2412	MBRL 2461
	MBRL 2159	0	0	2374	2374	2374	2374	2374	2376
	MBRL 2160	0	0	2375	2374	2375	2375	2375	2377
	MBRL 2378	2374	2375	0	45	45	45	46	45
	MBRL 2409	2374	2375	45	0	0	1	1	42
	MBRL 2410	2374	2375	45	0	0	1	1	42
	MBRL 2411	2374	2375	45	1	1	0	2	42
	MBRL 2412	2374	2375	46	1	1	2	0	43
	MBRL 2461	2376	2377	45	42	42	42	43	0

≤10 related (green), 11-30 possibly related (yellow), ≥31 unrelated (red)

Supplemental Table 8: *Enterobacter cloacae* complex Allelic Differences Between Isolates

		Manual WGS Method			
Automated WGS Method	Isolate	MBRL 2471	MBRL 2472	MBRL 2473	MBRL 2474
	MBRL 2471	0	2356	2356	0
	MBRL 2472	2355	0	0	2356
	MBRL 2473	2355	0	0	2356
	MBRL 2474	0	2355	2355	0

≤15 related (green), 16-50 possibly related (yellow), ≥51 unrelated (red)

Supplemental Table 9: *Campylobacter jejuni/coli* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method

Isolate	1	3	5	11	13	19	21	25	27	29	41	51	52	71	84	96
1	0	560	594	26	23	578	588	576	578	580	578	582	578	580	601	577
3	560	0	585	561	560	450	602	581	582	267	450	269	450	584	584	582
5	594	585	0	592	592	562	594	570	575	576	562	578	562	580	532	576
11	26	561	592	0	23	579	587	575	577	584	579	586	579	579	600	576
13	23	561	592	24	0	575	587	577	576	585	579	585	579	598	600	581
19	578	450	562	579	575	0	599	580	585	419	1	420	1	587	574	585
21	588	602	594	587	586	599	0	577	577	597	599	600	599	580	602	576
25	576	581	570	575	574	580	577	0	379	579	580	581	580	407	579	374
27	578	582	575	577	576	585	577	379	0	582	585	584	585	353	581	278
29	580	267	576	584	584	419	597	579	582	0	419	7	419	583	584	582
41	578	450	562	579	575	1	599	580	585	419	0	420	1	587	574	585
51	582	269	578	586	586	420	600	581	584	7	420	0	420	585	585	584
52	578	450	562	579	575	2	599	580	585	419	1	420	0	587	574	585
71	580	584	580	579	578	587	580	407	353	583	587	585	587	0	583	354
84	601	584	532	600	599	574	602	579	581	584	574	585	574	583	0	582
96	577	582	576	576	575	585	576	374	278	582	585	584	585	354	582	0

≤10 related (green), 11-60 possibly related (yellow), ≥61 unrelated (red)

Supplemental Table 10: *Enterococcus faecium* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method

Isolate	MBRL 2116	MBRL 2117	MBRL 2118	MBRL 2119	MBRL 2124	MBRL 2125	MBRL 2126	MBRL 2128	MBRL 2129	MBRL 2130	MBRL 2135	MBRL 2143
MBRL 2116	0	213	213	15	19	316	181	226	225	226	246	265
MBRL 2117	213	0	1	202	206	194	85	274	274	274	61	73
MBRL 2118	213	0	0	202	206	194	84	275	275	275	60	72
MBRL 2119	15	202	202	0	6	311	172	218	217	218	237	256
MBRL 2124	19	206	206	6	0	315	176	220	219	221	241	260
MBRL 2125	316	194	194	311	315	0	192	347	346	347	234	252
MBRL 2126	181	84	84	172	176	192	0	290	290	290	124	141
MBRL 2128	226	275	275	218	220	347	290	0	0	1	308	325
MBRL 2129	225	275	275	217	219	346	290	0	0	1	308	325
MBRL 2130	226	275	275	218	221	347	290	1	1	0	307	325
MBRL 2135	246	60	60	237	241	234	124	308	308	307	0	0
MBRL 2143	265	72	72	256	260	252	141	325	325	325	0	0

≤7 related (green), 8-30 possibly related (yellow), ≥31 unrelated (red)

Supplemental Table 11: *Enterococcus faecalis* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method	Isolate	MBRL 2112	MBRL 2114	MBRL 2120	MBRL 2467	MBRL 2468	MBRL 2469	MBRL 2470
	MBRL 2112	0	48	49	1723	1614	1614	1614
	MBRL 2114	48	0	4	1722	1610	1610	1610
	MBRL 2120	49	4	0	1722	1610	1610	1610
	MBRL 2467	1723	1722	1722	0	1627	1627	1627
	MBRL 2468	1614	1610	1610	1627	0	0	0
	MBRL 2469	1614	1610	1610	1627	0	0	0
	MBRL 2470	1614	1610	1610	1627	0	0	0

≤7 related (green), 8-30 possibly related (yellow), ≥31 unrelated (red)

Supplemental Table 12: *Streptococcus pyogenes* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method

Isolate	MBRL 1452	MBRL 1455	MBRL 1456	MBRL 1458	MBRL 1466	MBRL 1472	MBRL 1473	MBRL 1475	MBRL 1477	MBRL 1478	MBRL 1482	MBRL 1484
MBRL 1452	0	45	988	988	32	29	32	1010	24	1009	965	997
MBRL 1455	45	0	986	986	41	38	45	1005	49	1004	959	995
MBRL 1456	988	986	0	5	986	981	985	1006	986	1004	966	980
MBRL 1458	988	986	5	0	986	981	985	1006	986	1004	966	980
MBRL 1466	32	41	986	986	0	3	33	1007	37	1006	962	994
MBRL 1472	29	38	981	981	3	0	30	1001	34	1002	955	988
MBRL 1473	32	45	985	985	33	30	0	1005	36	1005	958	994
MBRL 1475	1010	1005	1006	1006	1007	1001	1005	0	1008	16	979	985
MBRL 1477	24	49	986	986	37	34	36	1008	0	1007	962	997
MBRL 1478	1009	1004	1004	1004	1006	1002	1005	16	1007	0	978	983
MBRL 1482	965	959	966	966	962	955	958	979	962	978	0	964
MBRL 1484	997	995	980	980	994	988	994	985	997	983	964	0

≤20 related (green), 21-100 possibly related (yellow), ≥101 unrelated (red)

Supplemental Table 13: *Serratia marcescens* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method

Isolate	MBRL 2209	MBRL 2212	MBRL 2219	MBRL 2221	MBRL 2383	MBRL 2386	MBRL 2391	MBRL 2395
MBRL 2209	0	0	3142 3143	3148 3149	3147 3149	3101 3103	3132 3132	3132 3133
MBRL 2212	0	0	3143 3143	3149 3149	3148 3149	3102 3103	3133 3132	3133 3133
MBRL 2219	3142 3143	3143 3143	0	3135 3135	3134 3135	3082 3082	3128 3127	3128 3128
MBRL 2221	3148 3149	3149 3149	3135 3135	0	0	3098 3099	3120 3119	3120 3120
MBRL 2383	3147 3149	3148 3149	3134 3135	0	0	3097 3099	3119 3119	3119 3120
MBRL 2386	3101 3103	3102 3103	3082 3082	3098 3099	3097 3099	0	3087 3088	3087 3088
MBRL 2391	3132 3132	3133 3132	3128 3127	3120 3119	3119 3119	3087 3088	0	0
MBRL 2395	3132 3133	3133 3133	3128 3128	3120 3120	3119 3120	3087 3088	0	0

≤12 related (green), 13-100 possibly related (yellow), ≥101 unrelated (red)

Supplemental Table 14: *Pseudomonas aeruginosa* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method

Isolate	MBRL 2368	MBRL 2369	MBRL 2423	MBRL 2424	MBRL 2425	MBRL 2427	MBRL 2428	MBRL 2431	MBRL 2436	MBRL 2439
MBRL 2368	0	3764	3734	3274	3742	3469	3665	3472	3712	3733
MBRL 269	3761	0	3527	3763	3535	3689	3464	3691	3506	3527
MBRL 2423	3734	3526	0	3742	62	3673	66	3675	80	6
MBRL 2424	3280	3765	3745	0	3746	3466	3673	3468	3714	3740
MBRL 2425	3741	3532	62	3752	0	3678	110	3680	68	62
MBRL 2427	3473	3690	3677	3474	3684	0	3577	2	3648	3672
MBRL 2428	3669	3465	65	3681	110	3583	0	3576	121	64
MBRL 2431	3474	3691	3676	3475	3683	2	3583	0	3650	3672
MBRL 2436	3711	3503	80	3720	68	3648	121	3653	0	79
MBRL 2439	3735	3526	6	3747	62	3672	64	3677	79	0

≤6 related (green), 7-100 possibly related (yellow), ≥101 unrelated (red)

Supplemental Table 15: *Streptococcus agalactiae* Allelic Differences Between Isolates

Manual WGS Method										
Automated WGS Method	Isolate	MBRL 2758	MBRL 2759	MBRL 2760	MBRL 2761	MBRL 2762	MBRL 2763	MBRL 2764	MBRL 2765	MBRL 2814
	MBRL 2758	0 0	0 0	866 870	0 0	884 887	0 0	0 0	0 0	1069 1072
	MBRL 2759	0 0	0 0	868 870	0 0	885 887	0 0	0 0	0 0	1069 1072
	MBRL 2760	866 870	868 870	0 0	865 869	272 272	868 870	868 870	867 870	1082 1085
	MBRL 2761	0 0	0 0	865 869	0 0	884 886	0 0	0 0	0 0	1068 1071
	MBRL 2762	884 887	885 887	272 272	884 886	0 0	886 887	886 887	885 887	1083 1085
	MBRL 2763	0 0	0 0	868 870	0 0	886 887	0 0	0 0	0 0	1070 1072
	MBRL 2764	0 0	0 0	868 870	0 0	886 887	0 0	0 0	0 0	1070 1072
	MBRL 2765	0 0	0 0	867 870	0 0	885 887	0 0	0 0	0 0	1069 1072
	MBRL 2814	1069 1072	1069 1072	1082 1085	1068 1071	1083 1085	1070 1072	1070 1072	1069 1072	0 0

≤20 related (green), 21-100 possibly related (yellow), ≥101 unrelated (red)

Supplemental Table 16: *Staphylococcus lugdunensis* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method	Isolate	MBRL 2772	MBRL 2773	MBRL 2774	MBRL 2775	MBRL 2776	MBRL 2799	MBRL 2800	MBRL 2801	MBRL 2802	MBRL 2803	MBRL 2804	MBRL 2810
	MBRL 2772	0	1572	1547	1531	1551	1558	1552	1549	1554	1552	1553	1555
	2772	0	1574	1547	1540	1552	1558	1555	1555	1553	1556	1571	1555
	MBRL 2773	1572	0	1566	1574	1562	1569	1566	1558	1563	1563	1573	1570
	2773	1574	0	1569	1584	1565	1572	1572	1568	1565	1569	1593	1572
	MBRL 2774	1547	1566	0	1325	1343	249	272	248	218	266	1371	273
	2774	1547	1569	0	1336	1346	249	273	250	218	266	1390	273
	MBRL 2775	1531	1574	1325	0	1372	1334	1337	1331	1329	1334	1445	1340
	2775	1540	1584	1336	0	1380	1342	1348	1343	1336	1343	1468	1348
	MBRL 2776	1551	1562	1343	1372	0	1343	1342	1336	1340	1345	1173	1344
	2776	1552	1565	1346	1380	0	1345	1347	1344	1341	1350	1190	1346
	MBRL 2799	1558	1569	249	1334	1343	0	312	147	161	305	1375	313
	2799	1558	1572	249	1342	1345	0	313	148	161	305	1395	313
	MBRL 2800	1552	1566	272	1337	1342	312	0	309	276	181	1376	3
	2800	1555	1572	273	1348	1347	313	0	310	277	182	1397	3
	MBRL 2801	1549	1558	248	1331	1336	147	309	0	159	305	1364	310
	2801	1555	1568	250	1343	1344	148	310	0	160	305	1385	310
	MBRL 2802	1554	1563	218	1329	1340	161	276	159	0	273	1360	277
	2802	1553	1565	218	1336	1341	161	277	160	0	272	1378	277
	MBRL 2803	1552	1563	266	1334	1345	305	181	305	273	0	1376	182
	2803	1556	1569	266	1343	1350	305	182	305	272	0	1397	182
	MBRL 2804	1553	1573	1371	1445	1173	1375	1376	1364	1360	1376	0	1377
	2804	1571	1593	1390	1468	1190	1395	1397	1385	1378	1397	0	1396
	MBRL 2810	1555	1570	273	1340	1344	313	3	310	277	182	1377	0
	2810	1555	1572	273	1348	1346	313	3	310	277	182	1369	0

≤8 related (green), 9-29 possibly related (yellow), ≥30 unrelated (red)

Supplemental Table 17: *Staphylococcus epidermidis* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method

	MBRL 2782	MBRL 2783	MBRL 2784	MBRL 2785	MBRL 2786	MBRL 2787	MBRL 2788	MBRL 2789	MBRL 2790	MBRL 2792	MBRL 2793	MBRL 2794
MBRL 2782	0	787	774	758	754	795	757	791	771	792	791	790
MBRL 2783	795	0	4	929	928	63	52	907	883	908	905	905
MBRL 2784	783	5	0	915	915	64	53	897	874	897	895	894
MBRL 2785	766	930	919	0	46	932	883	986	960	987	983	984
MBRL 2786	764	933	922	46	0	931	884	980	957	980	978	979
MBRL 2787	440	22	23	570	570	0	9	910	885	910	907	908
MBRL 2788	803	60	62	933	935	8	0	855	839	855	853	854
MBRL 2789	804	909	900	986	985	621	911	0	1	1	1	0
MBRL 2790	804	909	900	986	985	621	911	1	0	1	1	1
MBRL 2792	804	909	900	986	985	621	911	1	1	0	0	1
MBRL 2793	804	909	900	986	985	621	911	1	1	0	0	1
MBRL 2794	804	909	900	986	985	621	911	0	1	1	1	0

≤8 related (green), 9-29 possibly related (yellow), ≥30 unrelated (red)

Supplemental Table 18: *Cutibacterium acnes* Allelic Differences Between Isolates

Manual WGS Method

Automated WGS Method

Isolate	MBRL 2834	MBRL 2835	MBRL 2836	MBRL 2837	MBRL 2839	MBRL 2842	MBRL 2843	MBRL 2847	MBRL 2848	MBRL 2850	MBRL 2851	MBRL 2858
MBRL 2834	0	1103	1103	1148	308	1590	1591	1606	1606	284	283	237
MBRL 2835	1103	0	0	1087	1094	1571	1572	1582	1582	1113	1112	1090
MBRL 2836	1103	0	0	1087	1094	1572	1573	1583	1583	1113	1112	1090
MBRL 2837	1148	1087	1087	0	1148	1507	1508	1503	1503	1162	1162	1134
MBRL 2839	308	1094	1094	1148	0	1584	1585	1599	1599	339	338	306
MBRL 2842	1590	1571	1572	1507	1584	0	0	917	917	1590	1590	1580
MBRL 2843	1591	1572	1573	1508	1585	0	0	918	918	1591	1591	1581
MBRL 2847	1606	1582	1583	1503	1599	917	918	0	0	1603	1603	1595
MBRL 2848	1606	1582	1583	1503	1599	917	918	0	0	1603	1603	1595
MBRL 2850	284	1113	1113	1162	339	1590	1591	1603	1603	0	1	268
MBRL 2851	283	1112	1112	1162	338	1590	1591	1603	1603	1	0	267
MBRL 2858	237	1090	1090	1134	306	1580	1581	1595	1595	268	267	0

≤5 related (green), 6-50 possibly related (yellow), ≥51 unrelated (red)