

# WGS Quality Control Report

Batch Name: 2024-07-08

Experiment Name: 24ARS\_EMR\_NGO\_LGH4F

Isolate No.	Sample ID	Description	ARSRL	WGS
1	22ARS_BGH0063	NGO2	Neisseria gonorrhoeae	Neisseria gonorrhoeae
2	22ARS_BGH0094	NGO4	Neisseria gonorrhoeae	Neisseria gonorrhoeae
3	22ARS_BGH0095	NGO5	Neisseria gonorrhoeae	Neisseria gonorrhoeae
4	22ARS_BGH0096	NGO6	Neisseria gonorrhoeae	Neisseria gonorrhoeae
5	22ARS_GMH0061	NGO9	Neisseria gonorrhoeae	Neisseria gonorrhoeae
6	22ARS_JLM0026	NGO13	Neisseria gonorrhoeae	Neisseria gonorrhoeae
7	22ARS_JLM0059	NGO14	Neisseria gonorrhoeae	Neisseria gonorrhoeae
8	22ARS_SLH0062	NGO17	Neisseria gonorrhoeae	Neisseria gonorrhoeae
9	24ARS_BGH0058	EMR169	Enterococcus faecalis	Enterococcus faecalis
10	24ARS_BGH0059	EMR170	Enterococcus faecalis	Enterococcus faecalis
11	24ARS_BGH0061	EMR171	Enterococcus faecalis	Enterococcus faecalis
12	24ARS_BGH0062	EMR172	Enterococcus faecalis	Enterococcus faecalis
13	24ARS_BGH0065	NGO3	Enterococcus faecium	Neisseria gonorrhoeae
14	24ARS_DMC0129	EMR168	Enterococcus faecalis	Enterococcus faecalis
15	24ARS_JLM0064	EMR163	Pseudomonas aeruginosa	Pseudomonas aeruginosa
16	24ARS_JLM0065	EMR164	Acinetobacter baumannii	Acinetobacter baumannii
17	24ARS_NKI0031	EMR167	Enterococcus faecalis	Enterococcus faecalis
18	24ARS_NKI0054	EMR160	Pseudomonas aeruginosa	Pseudomonas aeruginosa
19	24ARS_NKI0055	EMR161	Pseudomonas aeruginosa	Pseudomonas aeruginosa
20	24ARS_SLH0060	EMR165	Klebsiella pneumoniae	Klebsiella pneumoniae
21	24ARS_SLH0064	EMR166	Pseudomonas aeruginosa	Pseudomonas aeruginosa
22	24ARS_STU0026	EMR162	Pseudomonas aeruginosa	Pseudomonas aeruginosa

Legend:

PASS	WARNING	FAILURE	EXCEEDS THRESHOLD METRIC/S	NON-CONCORDANT
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Isolate No.	Sample ID	Contamination	Contigs	GC Percent	N50	Total Length
1	22ARS_BGH0063	0	95	52.55	46851	2106578
2	22ARS_BGH0094	0	84	52.52	59655	2119302
3	22ARS_BGH0095	0	84	52.64	64281	2076243
4	22ARS_BGH0096	0	90	52.65	56218	2068914
5	22ARS_GMH0061	0	88	52.64	57477	2071250
6	22ARS_JLM0026	0	81	52.29	60563	2191682
7	22ARS_JLM0059	0	88	52.50	55092	2123392
8	22ARS_SLH0062	0	86	52.48	52810	2122070
9	24ARS_BGH0058	0	64	37.32	137544	2951077
10	24ARS_BGH0059	0	54	37.17	179691	3086115
11	24ARS_BGH0061	0	38	37.47	264080	2883694
12	24ARS_BGH0062	0	51	37.21	274808	3041435
13	24ARS_BGH0065	0	86	52.50	65863	2130382
14	24ARS_DMC0129	0	31	37.29	375662	2965797
15	24ARS_JLM0064	0	58	66.03	310324	6603012
16	24ARS_JLM0065	0	50	38.90	162339	3872906
17	24ARS_NKI0031	0	27	37.38	289851	2848700
18	24ARS_NKI0054	0	1198	66.29	8862	6107910
19	24ARS_NKI0055	0	170	66.09	149562	6818848
20	24ARS_SLH0060	0	34	57.43	494997	5317731
21	24ARS_SLH0064	0	62	66.34	321922	6392717
22	24ARS_STU0026	0	108	65.55	184226	6998537

Legend:

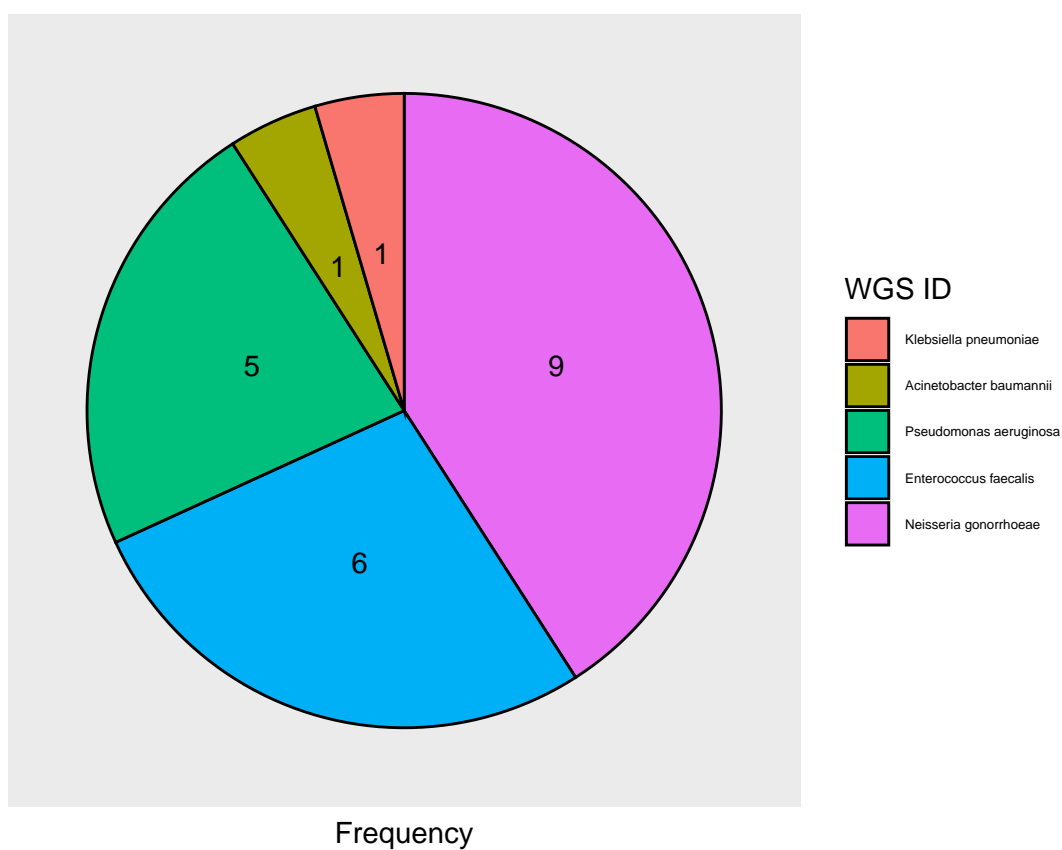
PASS	WARNING	FAILURE	EXCEEDS THRESHOLD METRIC/S	*Isolates were tagged with warning due to uncertain results of species identification using bactinspector or sequence identification levels.
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List of samples above/below QC threshold metrics					
Sample ID	Result	Contamination	Contigs	N50	Total Length
24ARS_NKI0054	FAILURE	PASS	1198	8862	6107910

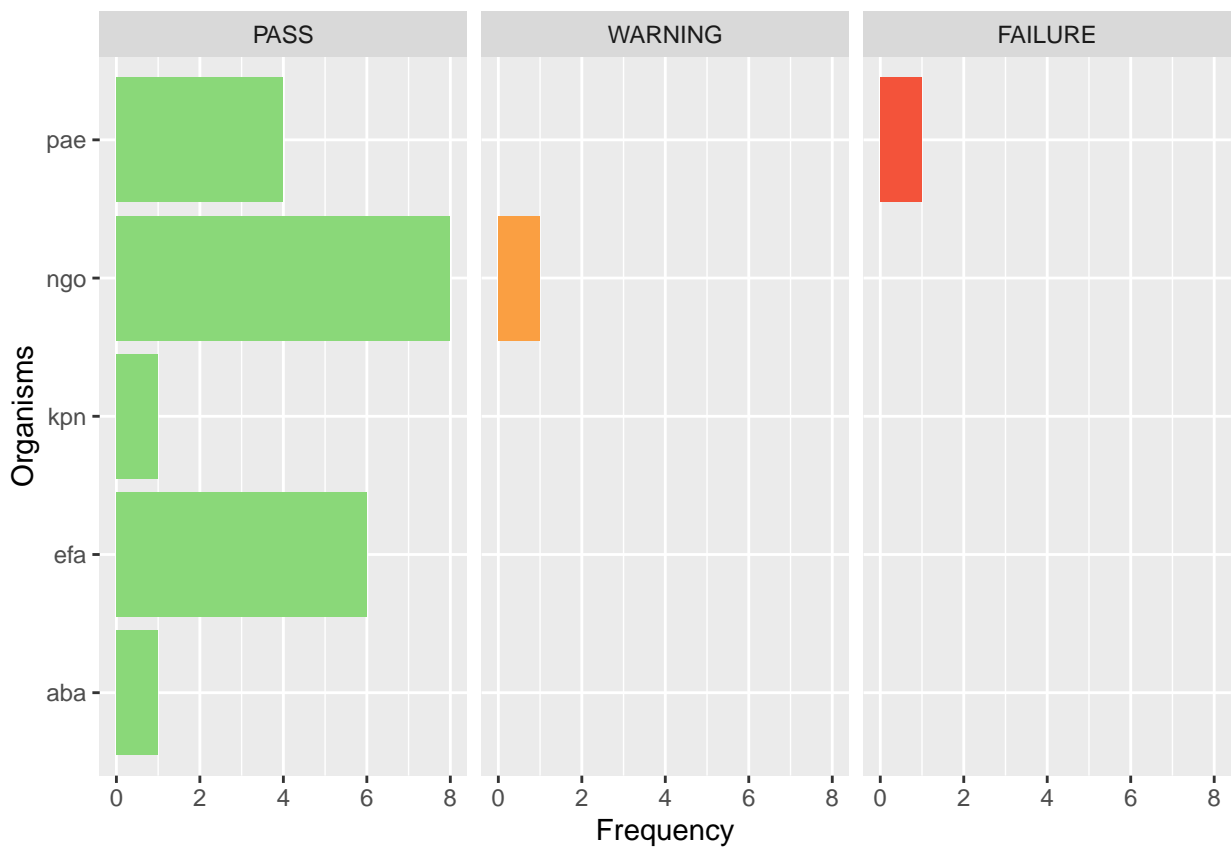
WGS_ID	Number
Neisseria gonorrhoeae	9
Enterococcus faecalis	6
Pseudomonas aeruginosa	5
Acinetobacter baumannii	1
Klebsiella pneumoniae	1

- 5 distinct species were identified among 22 isolates.
- 90.91 % (n=20) of the isolates passed the QC, while 4.55 % (n=1) were tagged with warning.
- Concordance between ARSRL and WGS species report was 95.45 %.

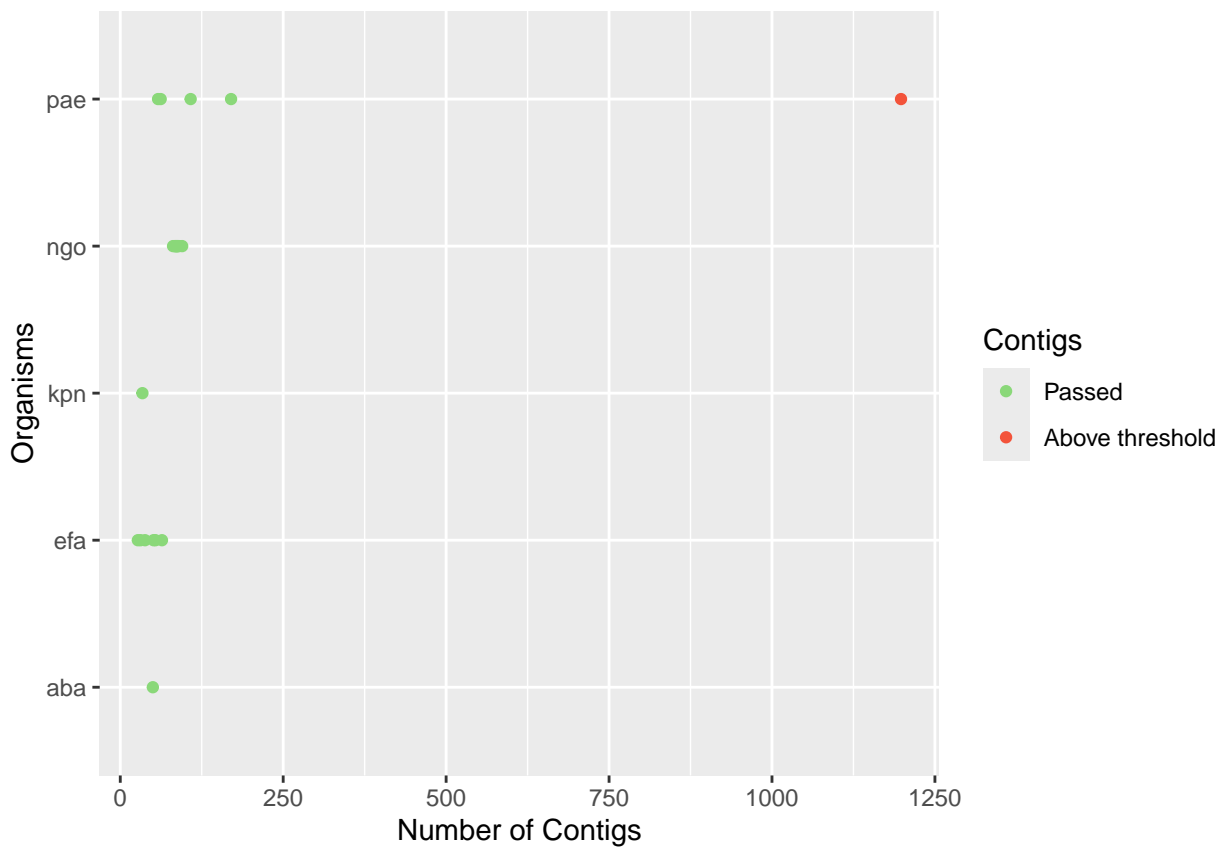
## GRAPHS



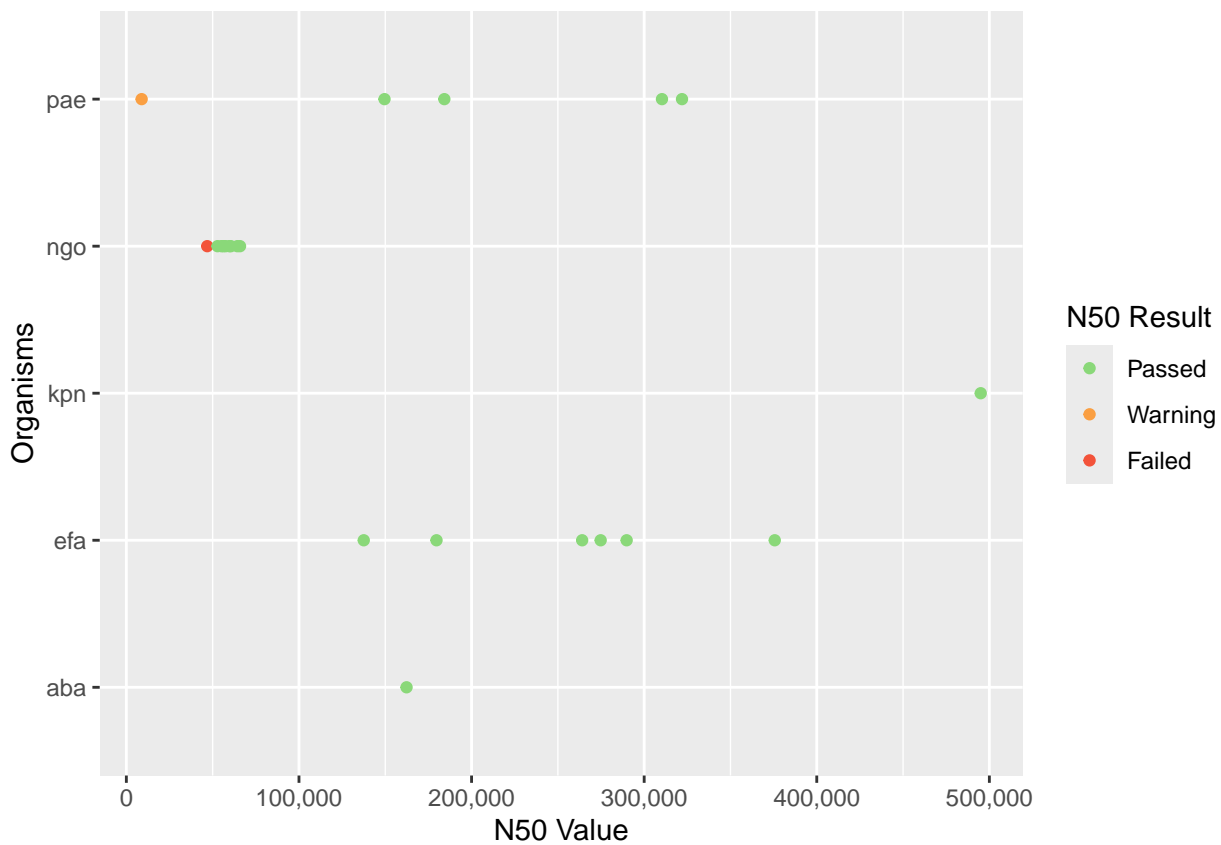
## Result Classification



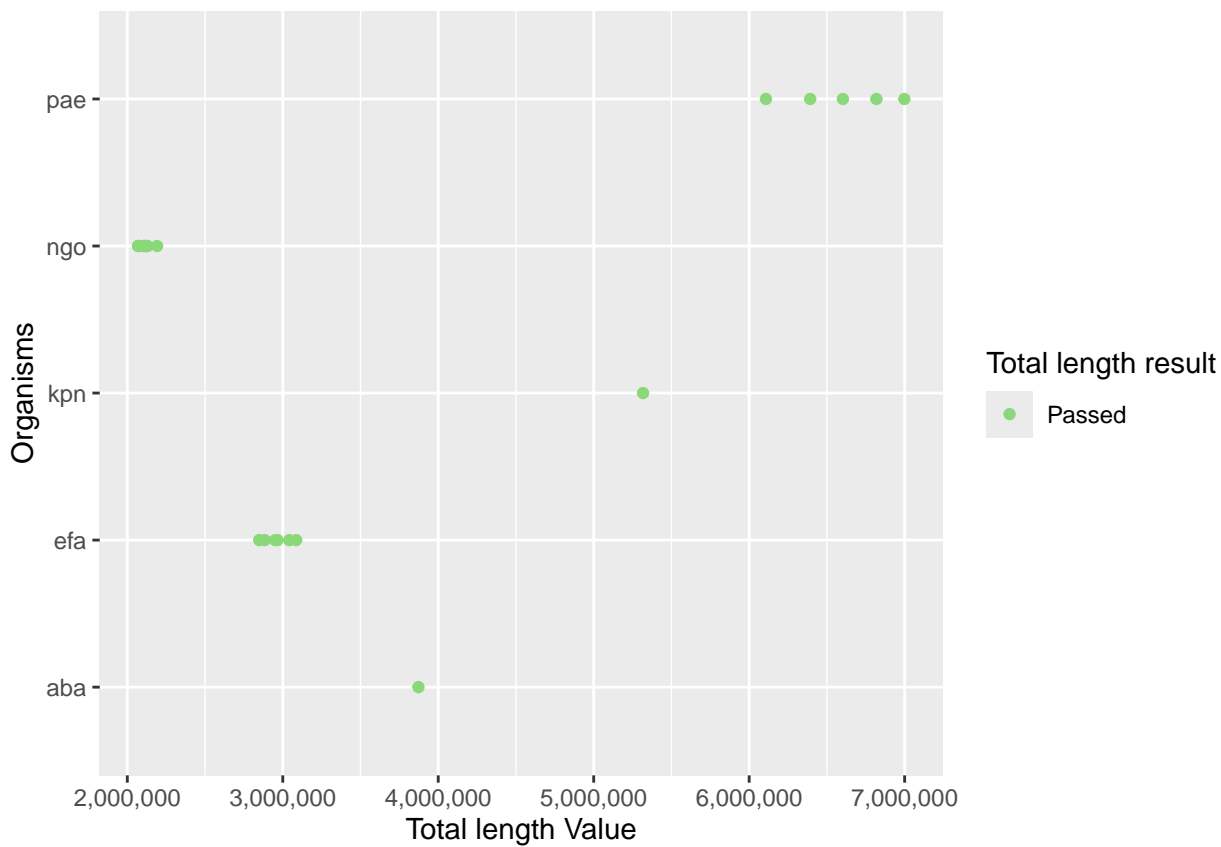
## Number of contigs



## N50 Value



## Total Length



## RECOMMENDATION:

Sample ID	Action	Reason
No further action required for this batch.		

## MLST RESULTS

sample_id	species	MLST	abcZ	adk	aroE	fumC	gdh	pdhC	pgm
22ARS_BGH0063	Neisseria gonorrhoeae	13333	59	39	170	78	148	153	133
22ARS_BGH0094	Neisseria gonorrhoeae	12463	109	39	170	78	149	154	65
22ARS_BGH0095	Neisseria gonorrhoeae	11421	126	39	67	158	149	71	65
22ARS_BGH0096	Neisseria gonorrhoeae	-	59	39	~789	111	148	71	65
22ARS_GMH0061	Neisseria gonorrhoeae	11963	59	39	67	111	149	154	65
22ARS_JLM0026	Neisseria gonorrhoeae	-	59	~39	67	78	148	153	65
22ARS_JLM0059	Neisseria gonorrhoeae	7363	59	39	67	78	148	153	65
22ARS_SLH0062	Neisseria gonorrhoeae	8130	59	39	170	78	149	154	65
24ARS_BGH0065	Neisseria gonorrhoeae	7363	59	39	67	78	148	153	65

sample_id	species	MLST	abcZ	adk	aroE	fumC	gdh	pdhC	pgm
24ARS_BGH0058	Enterococcus faecalis	368	63	6	67	6	23	1	68
24ARS_BGH0059	Enterococcus faecalis	403	11	5	4	16	11	13	10
24ARS_BGH0062	Enterococcus faecalis	179	5	1	1	3	7	1	6
24ARS_DMC0129	Enterococcus faecalis	16	5	1	1	3	7	7	6
24ARS_NKI0031	Enterococcus faecalis	16	5	1	1	3	7	7	6

sample_id	species	MLST	abcZ	adk	aroE	fumC	gdh	pdhC	pgm
24ARS_JLM0064	Pseudomonas aeruginosa	-	28	20	11	11	4	4	~219
24ARS_NKI0054	Pseudomonas aeruginosa	-	-	5	11	354?	3	15	1
24ARS_NKI0055	Pseudomonas aeruginosa	235	38	11	3	13	1	2	4
24ARS_SLH0064	Pseudomonas aeruginosa	244	17	5	12	3	14	4	7
24ARS_STU0026	Pseudomonas aeruginosa	277	39	5	9	11	27	5	2

sample_id	species	MLST	abcZ	adk	aroE	fumC	gdh	pdhC	pgm
24ARS_JLM0065	Acinetobacter baumannii	2	2	2	2	2	2	2	2

sample_id	species	MLST	abcZ	adk	aroE	fumC	gdh	pdhC	pgm
24ARS_SLH0060	Klebsiella pneumoniae	327	2	1	1	1	10	1	19

## MLST RESULTS SUMMARY:

Species	MLST
Neisseria gonorrhoeae	- (n= 2 ),11421 (n= 1 ),11963 (n= 1 ),12463 (n= 1 ),13333 (n= 1 ),7363 (n= 2 ),8130 (n= 1 )
Enterococcus faecalis	16 (n= 2 ),179 (n= 1 ),368 (n= 1 ),403 (n= 1 )
Pseudomonas aeruginosa	- (n= 2 ),235 (n= 1 ),244 (n= 1 ),277 (n= 1 )
Acinetobacter baumannii	2 (n= 1 )
Klebsiella pneumoniae	327 (n= 1 )

AMR PREDICTION RESULTS

Neisseria gonorrhoeae				
sample_id	AMR BETA-LACTAM	AMR EFFLUX	AMR TETRACYCLINE	STRESS EFFLUX
22ARS_BGH0063	blaTEM-135	norM, mtrC, mtrR, mtrA, farB	NA	mtrF
22ARS_BGH0094	blaTEM-135	norM, mtrC, mtrR, mtrA, farB	tet(M)	mtrF
22ARS_BGH0095	blaTEM-1	norM, mtrC, mtrR, mtrA, farB	NA	mtrF
22ARS_BGH0096	blaTEM-1	norM, mtrC, mtrR, mtrA, farB	NA	mtrF
22ARS_GMH0061	blaTEM-135	norM, mtrC, mtrR, mtrA, farB	NA	mtrF
22ARS_JLM0026	blaTEM-1	norM, mtrC, mtrR, farB, mtrA	tet(M)	mtrF
22ARS_JLM0059	blaTEM-1	norM, mtrC, mtrR, farB, mtrA	tet(M)	mtrF
22ARS_SLH0062	blaTEM-135	norM, mtrC, mtrR, mtrA, farB	tet(M)	mtrF
24ARS_BGH0065	blaTEM	norM, mtrC, mtrR, farB, mtrA	tet(M)	mtrF

Enterococcus faecalis																	
sample_id	AMR AMIKACIN/ GENTAMICIN/ KANAMYCIN/ TOBRAMYCIN	AMR AMIKACIN/ KANAMYCIN	AMR AMINOGLY- COSIDE	AMR CHLORAM- PHENICOL	AMR CHLORAM- PHENICOL/ FLORFENICOL	AMR CLINDAMYCIN/ ERYTHROMYCIN/ STREP- TOGRAMIN B	AMR FLORFENICOL/ OXAZOLIDINONE	AMR LINCOSAMIDE	AMR LINCOSAMIDE/ STREP- TOGRAMIN	AMR MADURAMICIN/ NARASIN/ SALINOMYCIN	AMR SPECTINOMYCIN	AMR STREPTOMYCIN	AMR STREP- TOTHRICIN	AMR TETRACYCLINE	AMR TRIMETHOPRIM	STRESS COPPER	
24ARS_BGH0058	NA	aph(3')-IIIa	NA	NA	NA	NA	NA	NA	Isa(A)	narB, narA	ant(9)-Ia	ant(6)-Ia	sat4	tet(M), tet(L)	NA	NA	NA
24ARS_BGH0059	aac(6')-Ie/aph(2'')-Ia	NA	spw	NA	fexA	erm(B)	optrA	Inu(B)	Isa(A), Isa(E)	narB, narA	ant(9)-Ia	ant(6)-Ia	NA	tet(M), tet(L)	NA	NA	NA
24ARS_BGH0062	NA	NA	NA	catA	NA	erm(B)	NA	NA	Isa(A)	NA	NA	str	NA	tet(M)	dfgG	NA	NA
24ARS_DMC0129	aac(6')-Ie/aph(2'')-Ia	aph(3')-IIIa	spw	NA	fexA	erm(B)	optrA	Inu(B)	Isa(A), Isa(E)	NA	NA	ant(6)-Ia	sat4	tet(M)	dfgG	NA	NA
24ARS_NKI0031	aac(6')-Ie/aph(2'')-Ia	aph(3')-IIIa	spw	NA	fexA	erm(B)	optrA	Inu(B)	Isa(A), Isa(E)	NA	ant(9)-Ia	ant(6)-Ia	sat4	tet(M)	NA	NA	NA

*Pseudomonas aeruginosa*

sample_id	AMR BETA-LACTAM	AMR CARBAPENEM	AMR CEPHALOSPORIN	AMR CHLORAM- PHENICOL	AMR EFFLUX	AMR FOSFOMYCIN	AMR KANAMYCIN	AMR SULFONAMIDE	AMR TIGECYCLINE	STRESS MERCURY	STRESS ORGANOMER- CURY
24ARS_JLM0064	blaOXA-50	NA	blaPDC-5	catB7	mexA, mexX, mexE	fosA	aph(3')-IIB	NA	NA	NA	NA
24ARS_NKI0054	blaOXA-396	NA	NA	catB7	mexA	fosA	aph(3')-IIB	NA	NA	NA	NA
24ARS_NKI0055	blaOXA-488	blaIMP-26	blaPDC-35, blaOXA-10	catB7	mexA, mexX, mexE	fosA	aph(3')-IIB	sul1	tmexC3, tmexD3, toprJ1	merR, merT, merP	merC
24ARS_SLH0064	blaOXA-847	NA	blaPDC-1	catB7	mexE, mexA, mexX	fosA	aph(3')-IIB	NA	NA	NA	NA
24ARS_STU0026	blaOXA	NA	blaPDC-5	catB7	mexA, mexE, mexX	fosA	aph(3')-IIB	NA	NA	NA	NA

*Acinetobacter baumannii*

sample_id	AMR AZITHROMYCIN/ ERYTHROMYCIN/ STREP- TOGRAMIN	AMR CARBAPENEM	AMR CEPHALOSPORIN	AMR EFFLUX	AMR ERYTHROMYCIN	AMR FOSFOMYCIN	AMR GENTAMICIN	AMR SPECTINO- MYCIN/ STREPTOMYCIN	AMR STREPTOMYCIN	AMR SULFONAMIDE	STRESS NICKEL
24ARS_JLM0065	msr(E)	blaOXA-66, blaOXA-23	blaADC-73	adeC, amvA	mph(E)	abaF	armA	ant(3'')-IIa	aph(3'')-Ib, aph(6)-Id	sul2	nreB

*Klebsiella pneumoniae*

sample_id	AMR AZITHROMYCIN/ ERYTHROMYCIN/ SPIRAMYCIN/ TELITHROMYCIN	AMR BETA-LACTAM	AMR BLEOMYCIN	AMR CARBAPENEM	AMR CEPHALOSPORIN	AMR CHLORAM- PHENICOL	AMR CHLORAM- PHENICOL/ FLORFENICOL	AMR EFFLUX	AMR FOSFOMYCIN	AMR KANAMYCIN	AMR PHENICOL/ QUINOLONE	AMR QUINOLONE	AMR RIFAMYCIN	AMR STREPTOMYCIN	AMR SULFONAMIDE	STRESS MERCURY	STRESS NA	STRESS ORGANOMER- CURY	STRESS QUATERNARY AMMONIUM
24ARS_SLH0060	mph(A)	blaSHV-1	ble	blaNDM-1	blaDHA, blaOXA-10	cmiA5	floR	kdeA, emrD	fosA	aph(3')-Ia	oqx25, oqx4	qnrS1	arr-2	aadA1	sul2, sul1	merT, merP	fieF	merC	qacE