WGS Quality Control Report

Batch Name: 2024-07-04

Experiment Name: 24ARS_EMR_LG788

Isolate No.	Sample ID	Description	ARSRL	WGS
1	23ARS_VSM0511	SAL68	Salmonella species	Salmonella enterica subsp. enterica serovar Enteritidis
2	24ARS_BRH0014	EMR142_2	Pseudomonas aeruginosa	Pseudomonas aeruginosa
3	24ARS_BRT0017	EMR141_2	Pseudomonas aeruginosa	Pseudomonas aeruginosa
4	24ARS_CRH0017	EMR146	Escherichia coli	Escherichia coli
5	24ARS_CRH0030	EMR148	Klebsiella pneumoniae	Klebsiella quasipneumoniae
6	24ARS_DMC0098	EMR149	Klebsiella pneumoniae	Klebsiella pneumoniae
7	24ARS_DMC0102	EMR157	Pseudomonas aeruginosa	Pseudomonas aeruginosa
8	24ARS_EVR0011	EMR155	Pseudomonas aeruginosa	Pseudomonas aeruginosa
9	24ARS_EVR0017	EMR158	Pseudomonas aeruginosa	Pseudomonas aeruginosa
10	24ARS_GMH0029	EMR145	Klebsiella pneumoniae	Klebsiella pneumoniae
11	24ARS_JLM0018	EMR143	Klebsiella pneumoniae	Klebsiella pneumoniae
12	24ARS_JLM0020	EMR144	Klebsiella pneumoniae	Klebsiella quasipneumoniae
13	24ARS_NKI0048	EMR147	Escherichia coli	Escherichia coli
14	24ARS_NKI0050	EMR150	Klebsiella pneumoniae	Klebsiella pneumoniae
15	24ARS_NKI0051	EMR151	Klebsiella pneumoniae	Klebsiella pneumoniae
16	24ARS_SLH0030	EMR154	Pseudomonas aeruginosa	Pseudomonas aeruginosa
17	24ARS_STU0024	EMR152	Klebsiella pneumoniae	Klebsiella pneumoniae
18	24ARS_STU0027	EMR153	Acinetobacter baumannii	Acinetobacter pittii
19	24ARS_ZMC0002	EMR156	Pseudomonas aeruginosa	Pseudomonas aeruginosa
20	UTP_BL_006	tricycle	Escherichia coli	Escherichia coli
21	UTP_ST_031	tricycle	Escherichia coli	Escherichia coli

Legend:

PASS | WARNING | FAILURE | EXCEEDS THRESHOLD METRIC/S | NON-CONCORDANT

Sample excluded in the analysis

Sample ID	Description	Index reads	Remarks
24ARS_NKI0053	EMR159	0.8429	low read count

Isolate No.	Sample ID	Contamination	Contigs	GC Percent	N50	Total Length
1	23ARS_VSM0511	0	24	52.13	478941	4700439
2	24ARS_BRH0014	0	84	65.97	247991	6878546
3	24ARS_BRT0017	0	122	65.33	220628	7348540
4	24ARS_CRH0017	0	127	50.53	136602	5373741
5	24ARS_CRH0030	0	39	57.75	801312	5379490
6	24ARS_DMC0098	0	44	57.19	479099	5405179
7	24ARS_DMC0102	0	51	66.32	488628	6482852
8	24ARS_EVR0011	0	47	66.47	407140	6291421
9	24ARS_EVR0017	0	131	66.36	151006	6423637
10	24ARS_GMH0029	0	110	56.65	172819	5772594
11	24ARS_JLM0018	0	95	56.79	394359	5742923
12	24ARS_JLM0020	0	77	57.65	229344	5512178
13	24ARS_NKI0048	0	93	50.83	320376	5148168
14	24ARS_NKI0050	0	55	57.20	236088	5425644
15	24ARS_NKI0051	0	81	56.82	238924	5595191
16	24ARS_SLH0030	0	99	65.94	361062	6937344
17	24ARS_STU0024	0	55	57.13	303929	5493891
18	24ARS_STU0027	0	17	38.58	519454	3995354
19	24ARS_ZMC0002	0	89	66.46	197528	6319285
20	UTP_BL_006	0	44	50.61	279880	4940847
21	UTP_ST_031	0	109	50.42	166206	5380880

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.

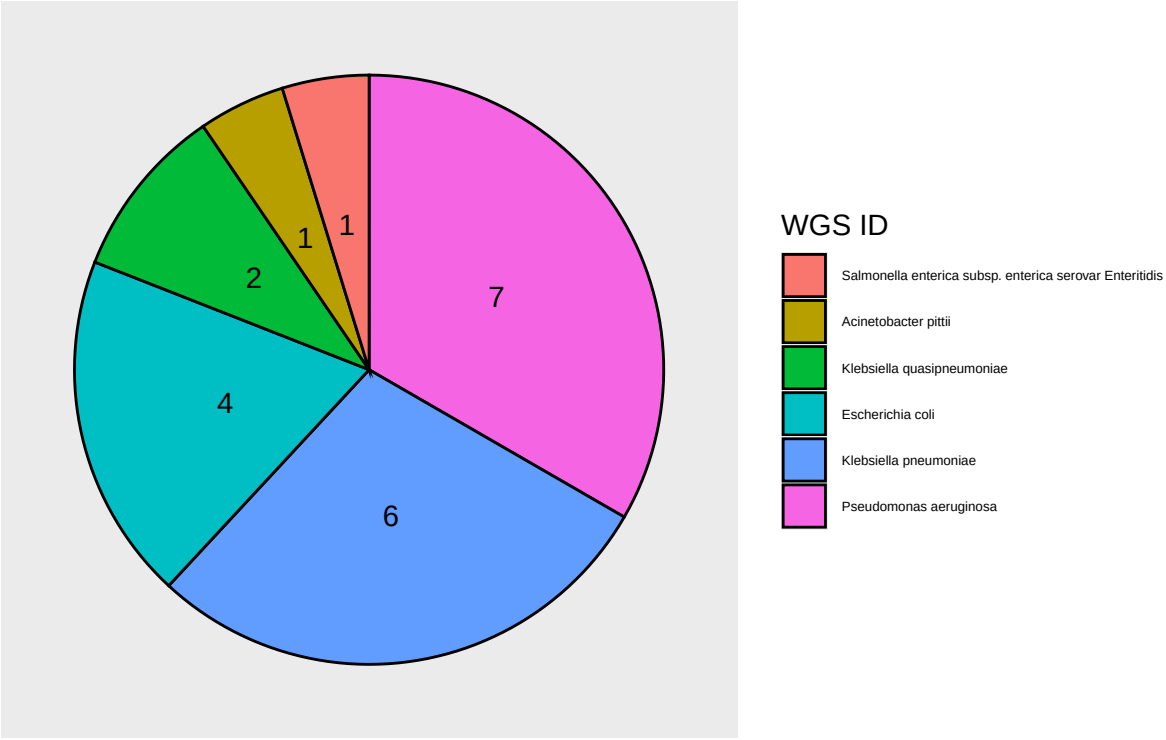
List of samples above/below QC threshold metrics

Sample ID	Remarks
	No QC failures found.

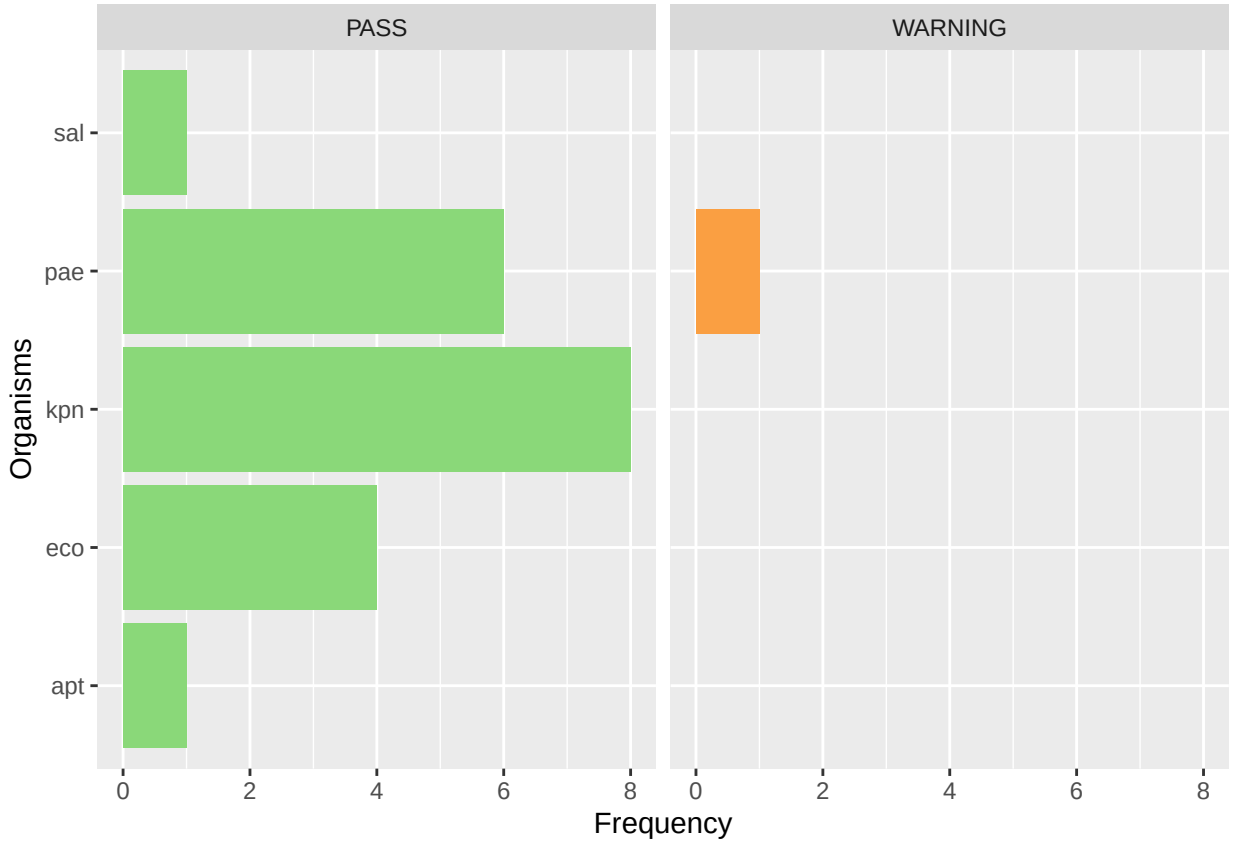
WGS_ID	Number
Pseudomonas aeruginosa	7
Klebsiella pneumoniae	6
Escherichia coli	4
Klebsiella quasipneumoniae	2
Acinetobacter pittii	1
Salmonella enterica subsp. enterica serovar Enteritidis	1

- 6 distinct species were identified among 21 isolates.
- 95.24 % (n=20) of the isolates passed the QC, while 4.76 % (n=1) were tagged with warning.
- Concordance between ARSRL and WGS species report was 100.00 %.

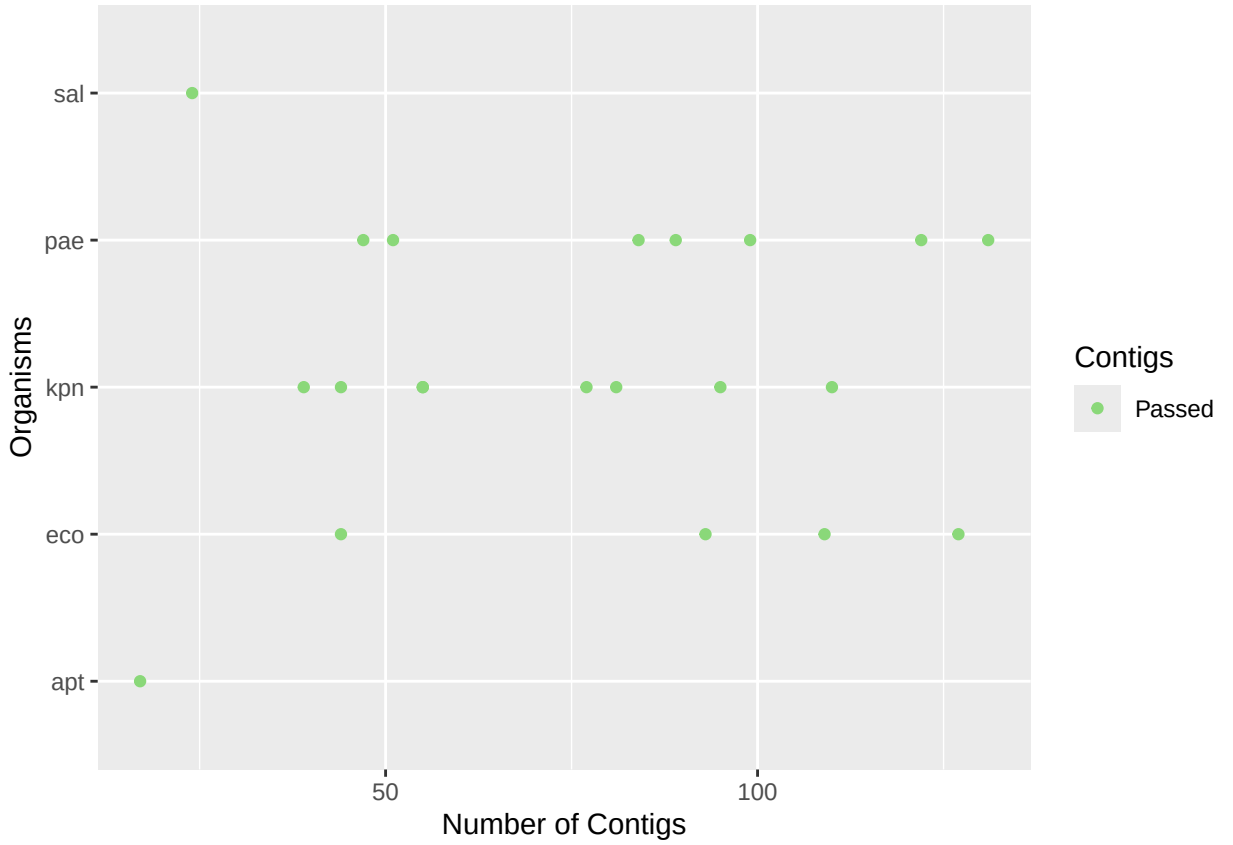
GRAPHS



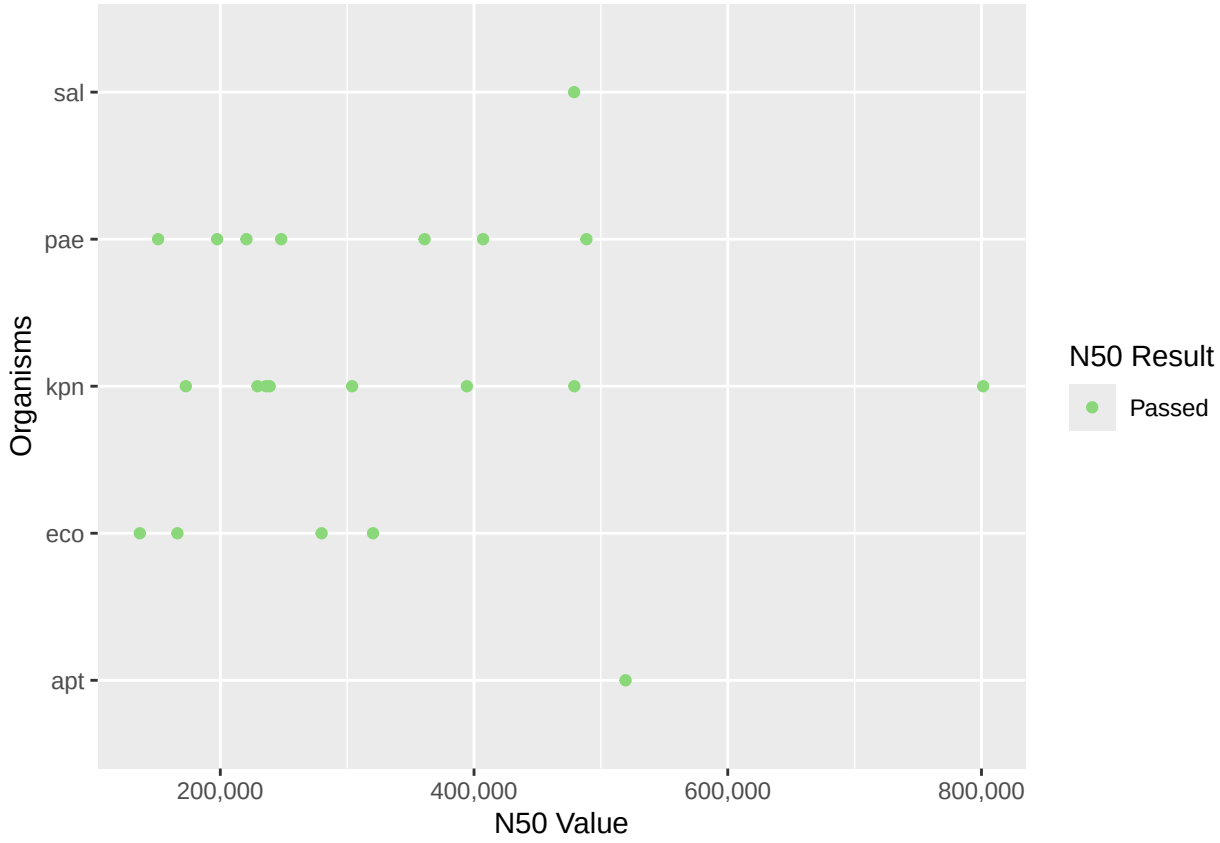
Result Classification



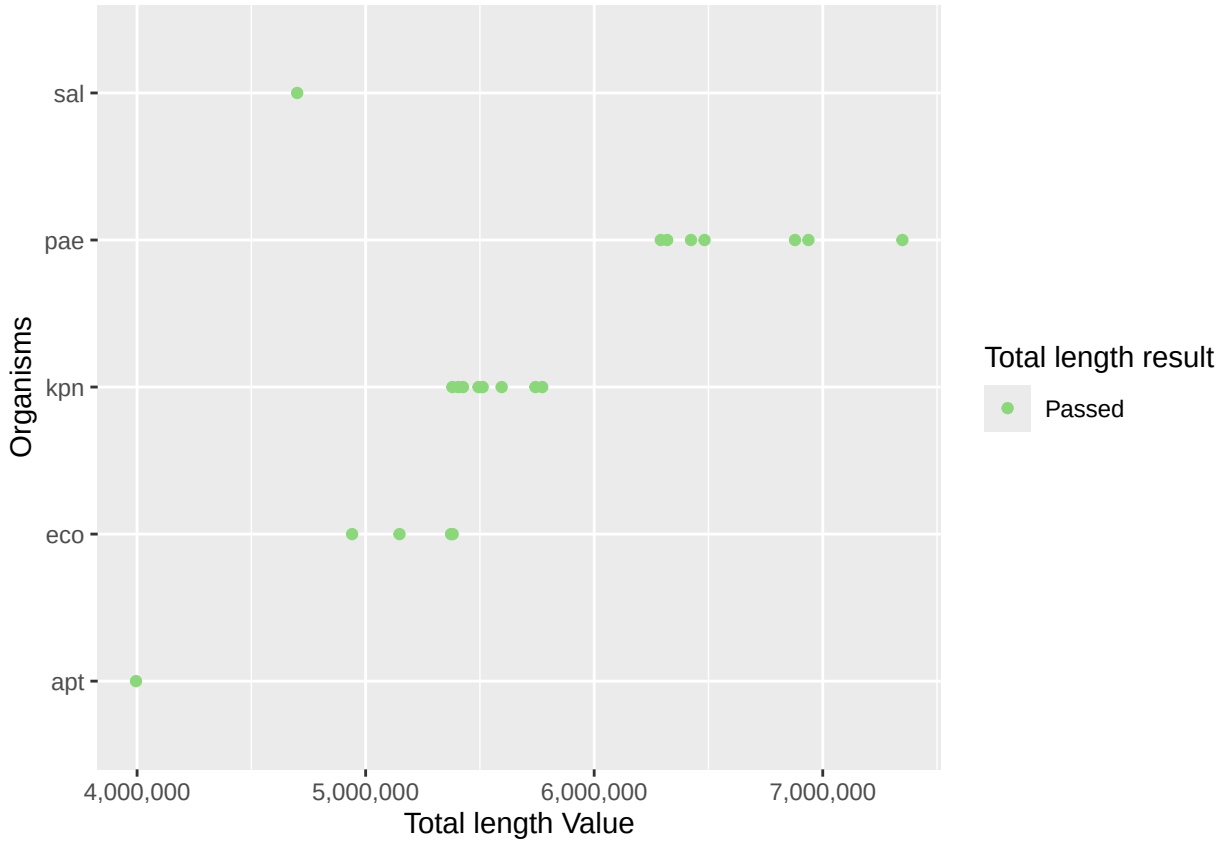
Number of contigs



N50 Value



Total Length



RECOMMENDATION:

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

MLST RESULTS

sample_id	species	MLST	aroC	dnaN	hemD	hisD	purE	sucA	thrA
23ARS_VSM0511	Salmonella enterica subsp. enterica serovar Enteritidis	-	5,638	2	3	7	6	6	11

sample_id	species	MLST	aroC	dnaN	hemD	hisD	purE	sucA	thrA
24ARS_BRH0014	Pseudomonas aeruginosa	639	11	19	19	3	4	4	7
24ARS_BRT0017	Pseudomonas aeruginosa	-	28,347	5	36	3	3	13	7
24ARS_DMC0102	Pseudomonas aeruginosa	2617	84	3	20	71	4	7	1
24ARS_EVR0011	Pseudomonas aeruginosa	-	15,345	5	11	3	15	42	9
24ARS_EVR0017	Pseudomonas aeruginosa	641	6	5	6	5	4	4	7
24ARS_SLH0030	Pseudomonas aeruginosa	-	11,345	20	1	65	4	4	10
24ARS_ZMC0002	Pseudomonas aeruginosa	3014	16	5	12	3	3	1	18

sample_id	species	MLST	aroC	dnaN	hemD	hisD	purE	sucA	thrA
24ARS_CRH0017	Escherichia coli	2083	6	322	5	16	11	8	7
24ARS_NKI0048	Escherichia coli	131	53	40	47	13	36	28	29
UTP_ST_031	Escherichia coli	38	4	26	2	25	5	5	19

sample_id	species	MLST	aroC	dnaN	hemD	hisD	purE	sucA	thrA
24ARS_CRH0030	Klebsiella quasipneumoniae	-	18	22	74	22	123	20	99
24ARS_DMC0098	Klebsiella pneumoniae	17	2	1	1	1	4	4	4
24ARS_GMH0029	Klebsiella pneumoniae	147	3	4	6	1	7	4	38
24ARS_JLM0018	Klebsiella pneumoniae	39	2	1	2	4	9	1	14
24ARS_JLM0020	Klebsiella quasipneumoniae	6403	18	22	26	59	92	13	192
24ARS_NKI0050	Klebsiella pneumoniae	2050	2	3	2	37	10	1	15
24ARS_NKI0051	Klebsiella pneumoniae	15	1	1	1	1	1	1	1
24ARS_STU0024	Klebsiella pneumoniae	39	2	1	2	4	9	1	14

sample_id	species	MLST	aroC	dnaN	hemD	hisD	purE	sucA	thrA
24ARS_STU0027	Acinetobacter pittii	-	~101	~233	46	29	~124	~59	119

MLST RESULTS SUMMARY:

Species	MLST
Salmonella enterica subsp. enterica serovar Enteritidis	- (n= 1)
Pseudomonas aeruginosa	- (n= 3),2617 (n= 1),3014 (n= 1),639 (n= 1),641 (n= 1)
Escherichia coli	131 (n= 1),2083 (n= 1),38 (n= 1)
Klebsiella pneumoniae	- (n= 1),147 (n= 1),15 (n= 1),17 (n= 1),2050 (n= 1),39 (n= 2),6403 (n= 1)
Acinetobacter pittii	- (n= 1)

AMR PREDICTION RESULTS

sample_id	species	AMR EFFLUX	STRESS COPPER/ GOLD	STRESS GOLD	STRESS NA	VIRULENCE NA
23ARS_VSM0511	Salmonella enterica subsp. enterica serovar Enteritidis	mdsA, mdsB	golT	golS	fieF	sodC1, iroC, iroB, sinH

sample_id	species	AMR AMIKACIN/ KANAMYCIN	AMR
24ARS_BRH0014	Pseudomonas aeruginosa	NA	b
24ARS_BRT0017	Pseudomonas aeruginosa	aph(3')-VIa	b
24ARS_DMC0102	Pseudomonas aeruginosa	NA	b
24ARS_EVR0011	Pseudomonas aeruginosa	NA	
24ARS_EVR0017	Pseudomonas aeruginosa	NA	
24ARS_SLH0030	Pseudomonas aeruginosa	NA	
24ARS_ZMC0002	Pseudomonas aeruginosa	NA	b

sample_id	species	AMR AMIKACIN/ KANAMYCIN/ QUINOLONE/ TOBRAMYCIN	AMR AZITHROMYCIN/ ERYTHROMYCIN/ SPIRAMYCIN/ TELITHROMYCIN	AMR BETA-LACTAM	AMR BLEOMYCIN	AMR CARBAPENEM	AMR CEPHALOSPORIN	AMR CHLORAMPHENICOL	AMR CLINDAMYCIN/ ERYTHROMYCIN	AMR COLISTIN	AMR EFFLUX	AMR GENTAMICIN	AMR KANAMYCIN	AMR STREPTOMYCIN	AMR SULFONAMIDE	AMR TETRACYCLINE	AMR TRIMETHOPRIM	STRESS ARSENATE	STRESS ARSENIC	STRESS EFFLUX	STRESS NA	STRESS QUATERNARY AMMONIUM	VIRULENCE NA
24ARS_CRH0017	Escherichia coli	aac(6')-Ib-cr5	NA	blaEC, blaTEM-1	ble	blaNDM-7	blaCMY-42	catA2	erm(42)	mcr-1.1	acrF, mdtM, emrD	aac(3)-IId	aph(3')-Ia	aph(6)-Id, aph(3")-Ib	sul2	tet(B)	NA	arsC	arsR	NA	ariR, asr, fieF	NA	fdeC, lpfA-O113, astA, espX1
24ARS_NKI0048	Escherichia coli	aac(6')-Ib-cr5	mph(A)	blaEC	NA	NA	blaCTX-M-15, blaOXA-1	NA	NA	NA	acrF, emrD, mdtM	NA	NA	aadA5	sul1	tet(A)	dfrA17	arsC	NA	emrE	ariR, fieF, asr	qacEdelta1	fdeC, iss, ybtP, ybtQ, afaC, nfaE, papA, iucA, iucB, iucC, iucD, iutA, sat, iha
UTP_ST_031	Escherichia coli	NA	mph(A)	blaEC, blaTEM-1	NA	NA	blaCTX-M-14	NA	NA	NA	acrF, emrD	NA	NA	aadA5	sul1	NA	dfrA17	arsC	arsR	NA	asr, fieF, ariR	qacEdelta1	espX1, fdeC, ybtQ, ybtP, afaC, nfaE, eilA, aap, eatA, astA

sample_id	species	AMR AMIKACIN/ KANAMYCIN/ QUINOLONE/ TOBRAMYCIN	AMR AMINOGLYCOSIDE	AMR AZITHROMYCIN/ ERYTHROMYCIN/ SPIRAMYCIN/ TELITHROMYCIN	AMR BETA-LACTAM	AMR BLEOMYCIN	AMR CARBAPENEM	AMR CEPHALOSPORIN	AMR EFFLUX	AMR FOSFOMYCIN	AMR GENTAMICIN	AMR KANAMYCIN	AMR PHENICOL/ QUINOLONE	AMR QUINOLONE
24ARS_CRH0030	Klebsiella quasipneumoniae	NA	NA	mph(A)	blaOKP-B	NA	NA	blaCTX-M-15	kdeA, emrD	fosA	NA	NA	oqxA, oqxB	qnrS1
24ARS_DMC0098	Klebsiella pneumoniae	aac(6')-Ib-cr5	NA	mph(A)	blaSHV-11, blaTEM-1	NA	NA	blaCTX-M-15	kdeA, emrD	fosA	aac(3)-IId	NA	oqxA, oqxB25	NA
24ARS_GMH0029	Klebsiella pneumoniae	aac(6')-Ib-cr	rmtB1	mph(A)	blaSHV-11	ble	blaNDM-7	blaCTX-M-15, blaOXA-1	kdeA, emrD	fosA	aac(3)-IIe	NA	oqxA, oqxB	qnrB6
24ARS_JLM0018	Klebsiella pneumoniae	aac(6')-Ib-cr5	NA	mph(A)	blaSHV-11	ble	blaNDM-5	blaCTX-M-15, blaOXA-1	kdeA, emrD	fosA	aac(3)-IId	NA	oqxA, oqxB32	qnrS1, qnrB6
24ARS_JLM0020	Klebsiella quasipneumoniae	NA	NA	mph(A)	blaOKP-B	NA	NA	blaCTX-M-15	emrD, kdeA	fosA	NA	NA	oqxA, oqxB	qnrS1
24ARS_NKI0050	Klebsiella pneumoniae	NA	NA	NA	blaSHV-1	NA	NA	NA	emrD, kdeA	fosA	NA	NA	oqxA, oqxB25	NA
24ARS_NKI0051	Klebsiella pneumoniae	aac(6')-Ib-cr5	NA	mph(A)	blaSHV-28	ble	blaNDM-5	blaCTX-M-15, blaOXA-1	emrD, kdeA	fosA	aac(3)-IIe	NA	oqxA, oqxB	qnrS1, qnrB1
24ARS_STU0024	Klebsiella pneumoniae	NA	NA	NA	blaSHV-11	NA	NA	blaCTX-M-15	kdeA, emrD	fosA	NA	aph(3')-Ia	oqxA, oqxB32	qnrS1

sample_id	AMR RIFAMYCIN	AMR STREPTOMYCIN	AMR SULFONAMIDE	AMR TETRACYCLINE	AMR TRIMETHOPRIM	STRESS COPPER	STRESS COPPER/ SILVER	STRESS MERCURY	STRESS NA	STRESS ORGANOMERCURY	STRESS QUATERNARY AMMONIUM	STRESS SILVER	STRESS TELLURIUM	VIRULENCE NA
24ARS_CRH0030	NA	aadA2, aph(6)-Id, aph(3")-Ib	sul1, sul2	tet(A)	dfrA12	pcoA, pcoB, pcoC, pcoD, pcoR, pcoS	silS, silR, silC, silF, silB, silA	NA	fieF	NA	qacEdelta1	silE, silP	terB, terC, terD, terE	NA
24ARS_DMC0098	arr-3	aadA16	sul1	tet(A)	NA	pcoA, pcoB, pcoC, pcoD, pcoR, pcoS	silS, silR, silC, silF, silB, silA	NA	fieF	NA	qacEdelta1	silE, silP	terB, terC, terD, terE	NA
24ARS_GMH0029	arr-3	aadA16	sul1	tet(A)	NA	NA	NA	NA	fieF	NA	qacEdelta1	NA	NA	NA
24ARS_JLM0018	arr-3	aadA16, aadA2, aph(3")-Ib	sul1	tet(A)	dfrA12	pcoA, pcoB, pcoC, pcoD, pcoR, pcoS	silS, silR, silC, silF, silB, silA	merP, merT, merR	fieF	merC	NA	silE, silP	terB, terC, terD, terE	ybtP, ybtQ
24ARS_JLM0020	NA	aadA2, aph(3")-Ib, aph(6)-Id	sul1, sul2	tet(A)	dfrA12	pcoS, pcoR, pcoD, pcoC, pcoB, pcoA	silA, silB, silF, silC, silR, silS	NA	fieF	NA	qacEdelta1	silP, silE	terB, terC, terD, terE	NA
24ARS_NKI0050	NA	NA	NA	NA	NA	pcoA, pcoB, pcoC, pcoD, pcoR, pcoS	silS, silR, silC, silF, silB, silA	NA	fieF	NA	NA	silE, silP	terE, terD, terC, terB	ybtQ, ybtP, iroB, iroC, iroD, iroN, peg-344, rmpC, rmpA, iutA, iucC, iucB, iucA
24ARS_NKI0051	NA	aadA2, aph(6)-Id, aph(3")-Ib	sul1, sul2	NA	dfrA12	pcoA, pcoB, pcoC, pcoD, pcoR, pcoS	silS, silR, silC, silF, silB, silA	NA	fieF	NA	qacEdelta1	silE, silP	terB, terC, terD, terE	NA
24ARS_STU0024	NA	aph(3")-Ib, aph(6)-Id	sul2, sul1	NA	dfrA7	pcoA, pcoB, pcoC, pcoD, pcoR, pcoS	silS, silR, silC, silF, silB, silA	NA	fieF	NA	qacEdelta1	silE, silP	terB, terC, terD, terE	ybtQ, ybtP

sample_id	species	AMR CARBAPENEM	AMR CEPHALOSPORIN	AMR EFFLUX	AMR FOSFOMYCIN	AMR SPECTINOMYCIN/ STREPTOMYCIN	STRESS NICKEL
24ARS_STU0027	Acinetobacter pittii	blaOXA	blaADC	amvA, adeE, adeD	abaF	ant(3")-IIa	nreB