WGS Quality Control Report

Batch Name: 2024-08-02

Experiment Name: 24ARS_SALM_EMR_LG73M

Isolate No.	Sample ID	Description	ARSRL	WGS
1	24ARS_DMC0037	NGO50	*Neisseria gonorrhoeae	Neisseria gonorrhoeae
2	24ARS_JLM0047	SAL105	Salmonella Typhi	Salmonella typhi
3	24ARS_JLM0082	SAL106	Salmonella species	Salmonella enterica
4	24ARS_MAR0001	NGO51	Neisseria gonorrhoeae	Neisseria gonorrhoeae
5	24ARS_MAR0067	SAL107	Salmonella species	Salmonella enterica
6	24ARS_MAR0073	NGO52	Neisseria gonorrhoeae	Neisseria gonorrhoeae
7	24ARS_MAR0074	NGO53	Neisseria gonorrhoeae	Neisseria gonorrhoeae
8	24ARS_SLH0029	SAL110	Salmonella species	Salmonella enterica
9	24ARS_SLH0035	SAL111	Salmonella species	Salmonella enterica
10	24ARS_SLH0036	NGO54	*Neisseria gonorrhoeae	Neisseria gonorrhoeae
11	24ARS_SLH0047	SAL112	Salmonella species	Salmonella enterica
12	24ARS_SLH0063	SAL113	Salmonella species	Salmonella enterica
13	24ARS_STU0025	SAL115	Salmonella species	Salmonella enterica
14	24ARS_STU0034	SAL116	Salmonella species	Salmonella enterica
15	24ARS_VSM0001	NGO55	Neisseria gonorrhoeae	Neisseria gonorrhoeae
16	24ARS_VSM0056	SAL118	Salmonella species	Salmonella enterica
17	24ARS_VSM0059	SAL121	Salmonella species	Salmonella enterica
18	24ARS_VSM0093	NGO56	Neisseria gonorrhoeae	Neisseria gonorrhoeae
19	24ARS_VSM0200	SAL124	Salmonella species	Salmonella enterica
20	24ARS_ZMC0010	SAL125	Salmonella Typhi	Salmonella typhi
21	24ARS_ZMC0013	SAL126	Salmonella Typhi	Salmonella typhi
22	24ARS_ZMC0014	SAL127	Salmonella Typhi	Salmonella typhi

Legend: PASS | WARNING | FAILURE | EXCEEDS THRESHOLD METRIC/S | (x) - NON-CONCORDANT |

Isolate No.	Sample ID	Contamination	Contigs	GC Percent	N50	Total Length
1	24ARS_DMC0037	0.00	86	52.50	48608	2125667
2	24ARS_JLM0047	0.00	52	52.06	204329	4717836
3	24ARS_JLM0082	0.00	25	52.12	489949	4730692
4	24ARS_MAR0001	0.00	95	52.54	47364	2106255
5	24ARS_MAR0067	0.00	23	52.13	490374	4702134
6	24ARS_MAR0073	0.00	88	52.41	48589	2133215
7	24ARS_MAR0074	0.00	96	52.46	49562	2120328
8	24ARS_SLH0029	0.00	57	52.13	333142	4977595
9	24ARS_SLH0035	0.00	25	52.13	490573	4701900
10	24ARS_SLH0036	0.00	86	52.55	50737	2122346
11	24ARS_SLH0047	0.00	38	52.21	376618	4872581
12	24ARS_SLH0063	0.00	23	52.13	490374	4701747
13	24ARS_STU0025	0.00	33	52.17	741543	4736398
14	* 24ARS_STU0034	0.00	27	52.03	490410	4750129
15	24ARS_VSM0001	16.33	116	52.48	47291	2130195
16	* 24ARS_VSM0056	0.00	24	52.10	489948	4724471
17	24ARS_VSM0059	0.00	24	52.13	489948	4699372
18	24ARS_VSM0093	9.91	107	52.48	48884	2129502
19	24ARS_VSM0200	0.00	52	52.17	301432	4907981
20	24ARS_ZMC0010	0.00	55	52.05	204322	4721525
21	24ARS_ZMC0013	0.00	59	52.01	204322	4733565
22	24ARS_ZMC0014	0.00	55	52.08	204320	4705524

Note: *Isolates were tagged with warning due to uncertain results of species identification using bactinspector.

Legend: PASS | WARNING | FAILURE | EXCEEDS THRESHOLD METRIC/S |

With Warning/s

Isolate No.	Sample ID	Value with warning/s
1	24ARS_DMC0037	fastqc.1.Per.sequence.GC.content.metric_value, fastqc.1.Sequence.Duplication.Levels.metric_value, fastqc.1.Sequence.Length.Distribution.metric_value, fastqc.2.Per.sequence.GC.content.metric_value, fastqc.2.Sequence.Duplication.Levels.metric_value, fastqc.2.Sequence.Length.Distribution.metric_value
4	24ARS_MAR0001	fastqc.1.Per.sequence.GC.content.metric_value, fastqc.1.Sequence.Duplication.Levels.metric_value, fastqc.1.Sequence.Length.Distribution.metric_value, fastqc.2.Per.sequence.GC.content.metric_value, fastqc.2.Sequence.Duplication.Levels.metric_value, fastqc.2.Sequence.Length.Distribution.metric_value
6	24ARS_MAR0073	fastqc.1.Per.sequence.GC.content.metric_value, fastqc.1.Sequence.Duplication.Levels.metric_value, fastqc.1.Sequence.Length.Distribution.metric_value, fastqc.2.Per.sequence.GC.content.metric_value, fastqc.2.Sequence.Duplication.Levels.metric_value, fastqc.2.Sequence.Length.Distribution.metric_value
7	24ARS_MAR0074	fastqc.1.Per.sequence.GC.content.metric_value, fastqc.1.Sequence.Length.Distribution.metric_value, fastqc.2.Per.sequence.GC.content.metric_value, fastqc.2.Sequence.Length.Distribution.metric_value
14	24ARS_STU0034	fastqc.1.Per.sequence.GC.content.metric_value, fastqc.1.Sequence.Length.Distribution.metric_value, fastqc.2.Per.sequence.GC.content.metric_value, fastqc.2.Sequence.Length.Distribution.metric_value
16	24ARS_VSM0056	fastqc.1.Per.sequence.GC.content.metric_value, fastqc.1.Sequence.Length.Distribution.metric_value, fastqc.2.Per.sequence.GC.content.metric_value, fastqc.2.Sequence.Length.Distribution.metric_value

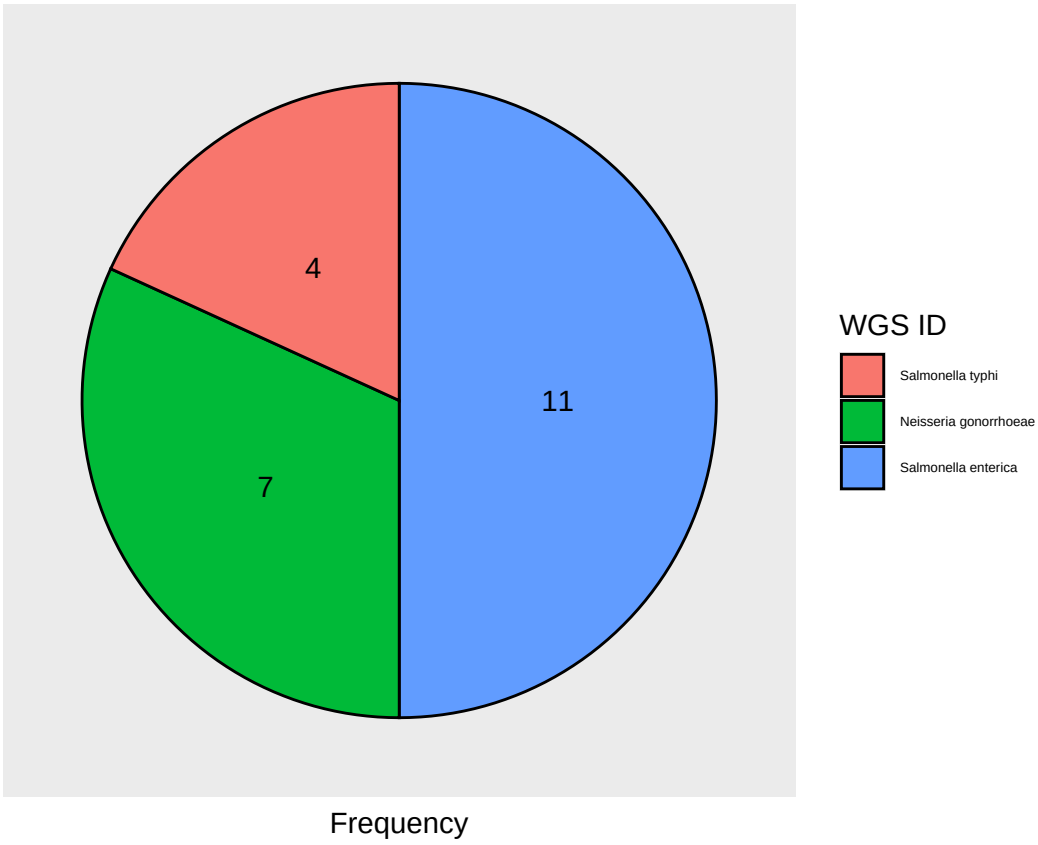
List of samples above/below QC threshold metrics

Sample ID	Result	Contamination	Contigs	N50	Total Length
24ARS_VSM0001	FAILURE	FAILURE	116	47291	2130195
24ARS_VSM0093	FAILURE	FAILURE	107	48884	2129502

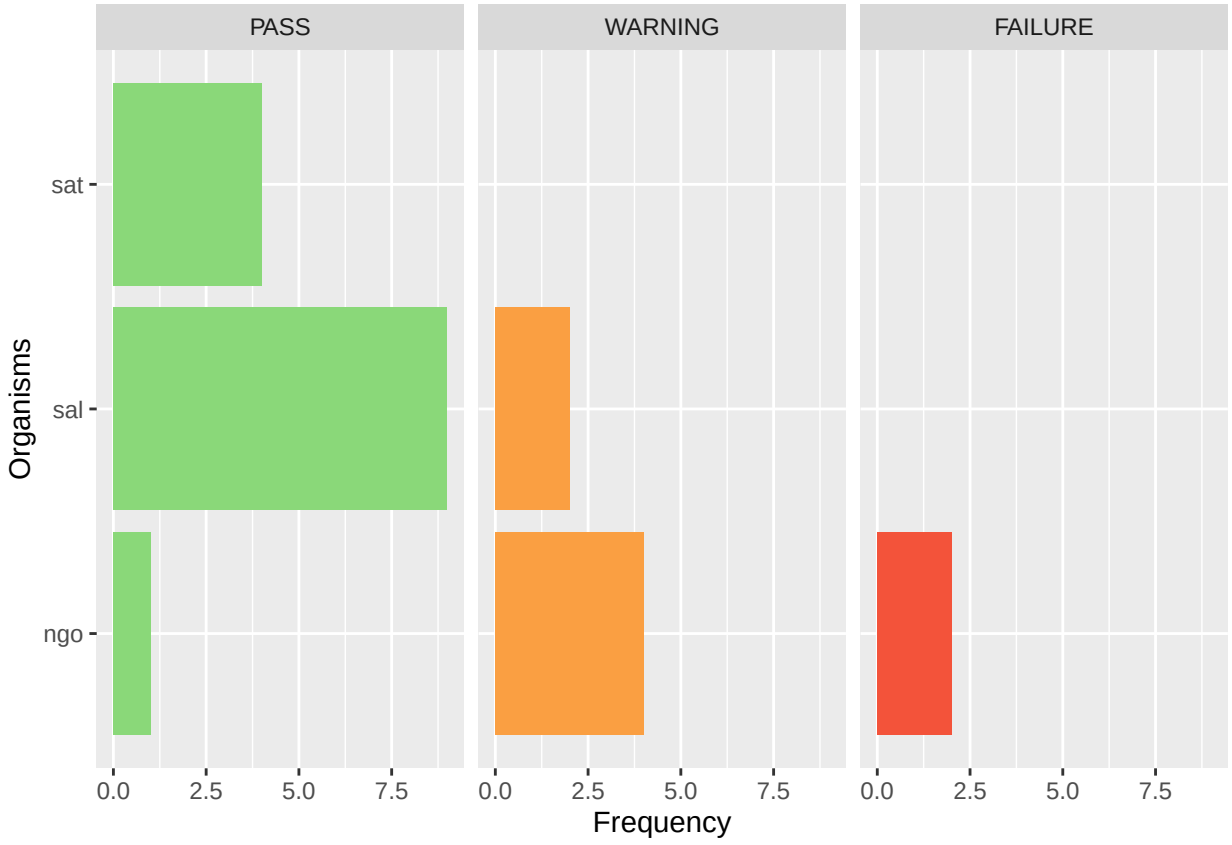
WGS_ID	Number
Salmonella enterica	11
Neisseria gonorrhoeae	7
Salmonella typhi	4

- 3 distinct species were identified among 22 isolates.
- 63.64 % (n=14) of the isolates passed the QC, while 27.27 % (n=6) were tagged with warning.
- Concordance between ARSRL and WGS species report was 100.00 %.

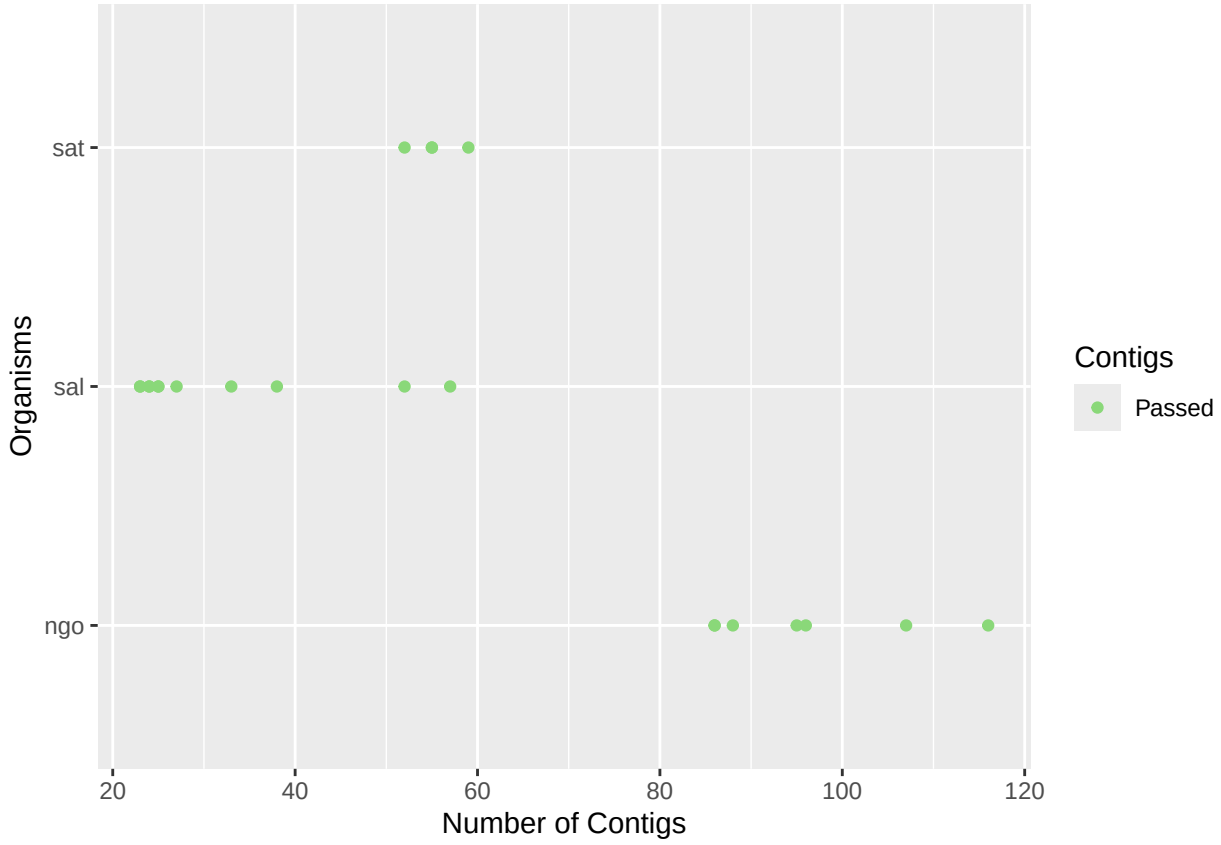
GRAPHS



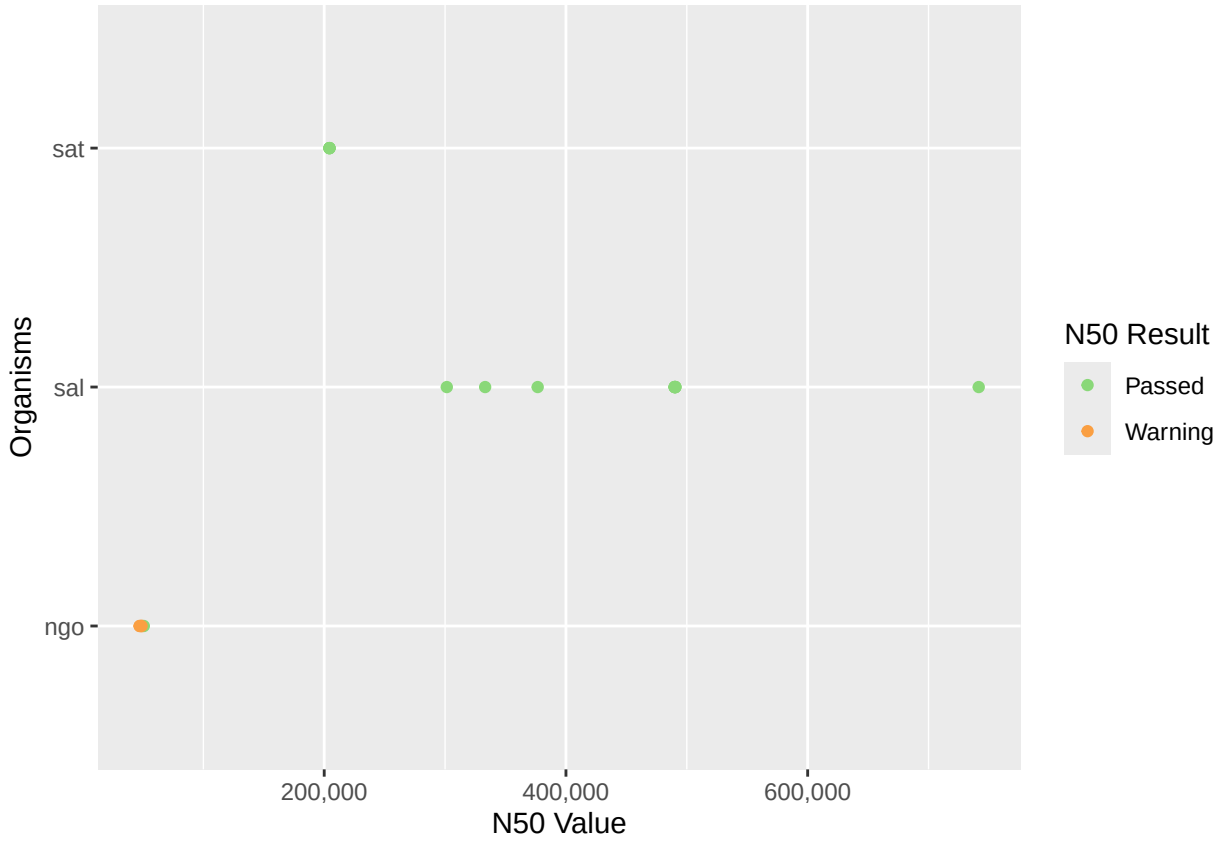
Result Classification



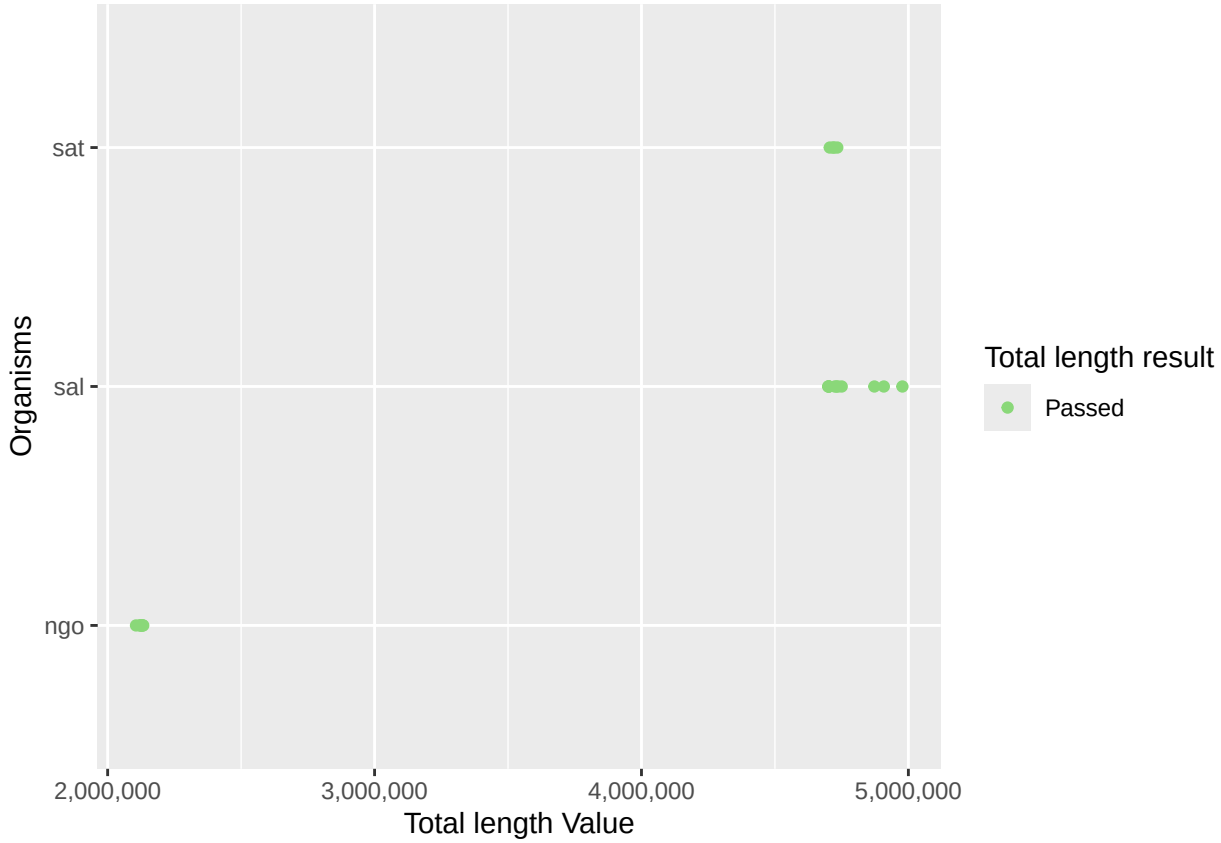
Number of contigs



N50 Value



Total Length



RECOMMENDATION:

Sample ID	Action	Reason
24ARS_VSM0001	Repeat testing	QC failure (high contigs & N50 value)
24ARS_VSM0093	Repeat testing	QC failure (high contigs & N50 value)

MLST RESULTS

sample_id	species	MLST	aroC.5.638	adk	aroE	fumC	gdh	pdhC	pgm
24ARS_DMC0037	Neisseria gonorrhoeae	10316	abcZ(59)	39	67	157	149	71	65
24ARS_MAR0001	Neisseria gonorrhoeae	-	abcZ(59)	39	67	156	149	530	65
24ARS_MAR0073	Neisseria gonorrhoeae	8776	abcZ(59)	39	67	157	148	71	133
24ARS_MAR0074	Neisseria gonorrhoeae	11249	abcZ(59)	39	67	157	148	71	65
24ARS_SLH0036	Neisseria gonorrhoeae	1587	abcZ(59)	39	67	78	148	153	133
24ARS_VSM0001	Neisseria gonorrhoeae	7363	abcZ(59)	39	67	78	148	153	65
24ARS_VSM0093	Neisseria gonorrhoeae	7363	abcZ(59)	39	67	78	148	153	65

Legend: (-) Not identified

sample_id	species	MLST	aroC.5.638	adk	aroE	fumC	gdh	pdhC	pgm
24ARS_JLM0047	Salmonella typhi	1	aroC(1)	1	1	1	1	1	5
24ARS_ZMC0010	Salmonella typhi	2	aroC(1)	1	2	1	1	1	5
24ARS_ZMC0013	Salmonella typhi	2	aroC(1)	1	2	1	1	1	5
24ARS_ZMC0014	Salmonella typhi	1	aroC(1)	1	1	1	1	1	5

Legend: (-) Not identified

sample_id	species	MLST	aroC.5.638	adk	aroE	fumC	gdh	pdhC	pgm
24ARS_JLM0082	Salmonella enterica	-	aroC(5,638)	2	3	7	6	6	11

24ARS_MAR0067	Salmonella enterica	-	aroC(5,638)	2	3	7	6	6	11
24ARS_SLH0029	Salmonella enterica	32	aroC(17)	18	22	17	5	21	19
24ARS_SLH0035	Salmonella enterica	-	aroC(5,638)	2	3	7	6	6	11
24ARS_SLH0047	Salmonella enterica	313	aroC(10)	7	12	9	112	9	2
24ARS_STU0025	Salmonella enterica	64	aroC(10)	14	15	31	25	20	33
24ARS_STU0034	Salmonella enterica	-	aroC(5,638)	2	3	7	6	6	11
24ARS_VSM0056	Salmonella enterica	-	aroC(5,638)	2	3	7	6	6	11
24ARS_VSM0059	Salmonella enterica	-	aroC(5,638)	2	3	7	6	6	11
24ARS_VSM0200	Salmonella enterica	4431	aroC(10)	19	12	981	5	9	2

Legend: (-) Not identified

MLST RESULTS SUMMARY:

wgs_id	mlst_count
Neisseria gonorrhoeae	- (n= 1), 10316 (n= 1), 11249 (n= 1), 1587 (n= 1), 7363 (n= 2), 8776 (n= 1)
Salmonella typhi	1 (n= 2), 2 (n= 2)
Salmonella enterica	- (n= 6), 313 (n= 1), 32 (n= 1), 4431 (n= 1), 64 (n= 1)

Legend: (-) Not identified

AMR PREDICTION RESULTS

Neisseria gonorrhoeae

sample_id	AMR BETA-LACTAM	AMR EFFLUX	AMR TETRACYCLINE	STRESS EFFLUX
24ARS_DMC0037	blaTEM-1	norM, mtrC, mtrR, mtrA, farB	tet(M)	mtrF
24ARS_MAR0001	blaTEM-1	mtrA, mtrR, mtrC, farB, norM	tet(M)	mtrF
24ARS_MAR0073	blaTEM-1	norM, mtrC, mtrR, farB, mtrA	NA	mtrF
24ARS_MAR0074	blaTEM-1	norM, mtrR, mtrC, farB, mtrA	NA	mtrF
24ARS_SLH0036	blaTEM-1	norM, mtrC, mtrR, farB, mtrA	tet(M)	mtrF
24ARS_VSM0001	blaTEM-1	norM, mtrC, mtrR, mtrA, farB	tet(M)	mtrF
24ARS_VSM0093	blaTEM-1	norM, mtrC, mtrR, farB, mtrA	tet(M)	mtrF

Salmonella typhi

sample_id	STRESS NA	VIRULENCE NA
24ARS_JLM0047	fieF	iroB, iroC, sinH, cdtB
24ARS_ZMC0010	fieF	sinH, iroB, iroC, cdtB
24ARS_ZMC0013	fieF	iroB, iroC, sinH, cdtB
24ARS_ZMC0014	fieF	iroB, iroC, sinH, cdtB

Salmonella enterica

sample_id	AMR APRAMYCIN/ GENTAMICIN/ TOBRAMYCIN	AMR BETA-LACTAM	AMR CEPHALOSPORIN	AMR CHLORAM-PHENICOL/ FLORFENICOL	AMR EFFLUX	AMR FOSFOMYCIN	AMR HYGROMYCIN	AMR KANAMYCIN	AMR LINCOSAMIDE	AMR QUINOLONE	AMR STREPTOMYCIN	AMR SULFONAMIDE	AMR TETRACYCLINE	AMR TRIMETHOPRIM	STRESS ARSENATE	STRESS ARSENIC	STRESS ARSENITE	STRESS COPPER	STRESS COPPER/ GOLD	STRESS COPPER/ SILVER	STRESS GOLD	STRESS MERCURY	STRESS NA	STRESS ORGANOMER-CURY	STRESS QUATERNARY AMMONIUM	STRESS SILVER	VIRULENCE NA
24ARS_JLM0082	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sodC1, sinH, iroB, iroC
24ARS_MAR0067	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sodC1, iroC, iroB, sinH
24ARS_SLH0029	aac(3)-IVa	NA	blaCTX-M-65	floR	mdsA, mdsB	NA	aph(4)-Ia	aph(3')-Ia	NA	NA	aadA1	sul1	tet(A)	dfrA14	NA	arsR	NA	NA	golT	NA	golS	marP, merT, marR	fieF	merC	qacEdelta1	NA	iroB, iroC, sinH, ybtP, ybtQ
24ARS_SLH0035	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sodC1, iroB, iroC, sinH
24ARS_SLH0047	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	iroC, iroB, sinH, sodC1
24ARS_SLH0063	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	iroC, iroB, sodC1, sinH
24ARS_STU0025	NA	NA	blaDHA-1	floR	mdsA, mdsB	NA	NA	NA	lnu(F)	qnrB4	aph(6)-Id, aph(3")-Ib, aadA2	sul2, sul1	tet(A)	dfrA23	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	qacE	NA	iroB, iroC, sinH
24ARS_STU0034	NA	blaTEM-1	NA	NA	mdsA, mdsB	fosA4	NA	NA	NA	qnrS1	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sodC1, iroC, iroB, sinH
24ARS_VSM0056	NA	blaTEM-1	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	aph(6)-Id, aph(3")-Ib	sul2	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sodC1, iroC, iroB, sinH
24ARS_VSM0059	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sodC1, iroC, iroB, sinH
24ARS_VSM0200	NA	blaTEM-1	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	aph(6)-Id, aph(3")-Ib	sul2	tet(B)	NA	arsC	arsR	arsB, arsA, arsD	pcoS, pcoR, pcoD, pcoC, pcoA	golT	silA, silB, silF, silC, silR, silS	golS	marR, merT, marP	fieF	merC	NA	silP, silE	iroB, iroC, sinH, sodC1