WGS Quality Control Report

Batch Name: 2024-07-28

Experiment Name: 24ARS_SALM2_LG735

Isolate No.	Sample ID	Description	ARSRL	WGS
1	24ARS_BGH0073	SAL83	Salmonella species	Salmonella enterica
2	24ARS_BGH0098	SAL84	Salmonella species	Salmonella enterica
3	24ARS_BGH0099	SAL85	Salmonella species	Salmonella enterica
4	24ARS_BGH0100	SAL86	Salmonella species	Salmonella enterica
5	24ARS_BRH0012	SAL87	Salmonella species	Salmonella enterica
6	24ARS_BRH0013	SAL88	Salmonella species	Salmonella enterica
7	24ARS_BRH0054	SAL89	Salmonella species	Salmonella enterica
8	24ARS_BRH0068	SAL90	Salmonella species	Salmonella typhi
9	24ARS_BRT0028	SAL91	Salmonella Typhi	Salmonella typhi
10	24ARS_BRT0041	SAL92	Salmonella species	Salmonella enterica
11	24ARS_CMC0007	SAL93	Salmonella Typhi	Salmonella typhi
12	24ARS_CRH0031	SAL94	Salmonella species	Salmonella enterica
13	24ARS_CRH0049	SAL95	Salmonella species	Salmonella enterica
14	24ARS_CVM0082	SAL96	Salmonella Typhi	Salmonella typhi
15	24ARS_DMC0100	SAL97	Salmonella species	Salmonella enterica
16	24ARS_DMC0101	SAL98	Salmonella species	Salmonella enterica
17	24ARS_DMC0162	SAL99	Salmonella species	Salmonella enterica
18	24ARS_DMC0218	SAL100	Salmonella Typhi	Salmonella typhi
19	24ARS_DMC0291	SAL101	Salmonella species	Salmonella enterica
20	24ARS_DMC0292	SAL102	Salmonella Typhi	Salmonella typhi
21	24ARS_GMH0033	SAL103	Salmonella species	Salmonella enterica
22	24ARS_JLM0046	SAL104	Salmonella species	Salmonella enterica

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

Isolate No.	Sample ID	Contamination	Contigs	GC Percent	N50	Total Length
1	24ARS_BGH0073	0	47	52.09	291623	5020885
2	24ARS_BGH0098	0	55	52.14	245434	4977405
3	24ARS_BGH0099	0	38	52.17	376619	4913046
4	24ARS_BGH0100	0	58	52.14	194191	4975128
5	* 24ARS_BRH0012	0	27	52.03	489959	4771132
6	24ARS_BRH0013	0	25	52.13	490385	4702229
7	24ARS_BRH0054	0	61	52.12	263338	4950993
8	24ARS_BRH0068	0	58	52.07	204318	4736095
9	24ARS_BRT0028	0	54	52.08	204323	4707276
10	* 24ARS_BRT0041	0	22	52.10	490374	4721282
11	24ARS_CMC0007	0	58	52.09	153660	4701851
12	* 24ARS_CRH0031	0	16	52.14	697691	4525268
13	* 24ARS_CRH0049	0	38	52.12	418650	4707180
14	24ARS_CVM0082	0	55	52.10	204322	4699960
15	24ARS_DMC0100	0	89	52.04	219196	5135005
16	24ARS_DMC0101	0	91	52.07	221808	5031480
17	24ARS_DMC0162	0	52	51.32	403711	5081038
18	24ARS_DMC0218	0	57	52.08	172569	4701935
19	24ARS_DMC0291	0	57	52.15	319335	4906095
20	24ARS_DMC0292	0	58	52.08	161697	4733558
21	* 24ARS_GMH0033	0	25	52.07	490238	4752483
22	24ARS_JLM0046	0	61	52.13	204159	4985784

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

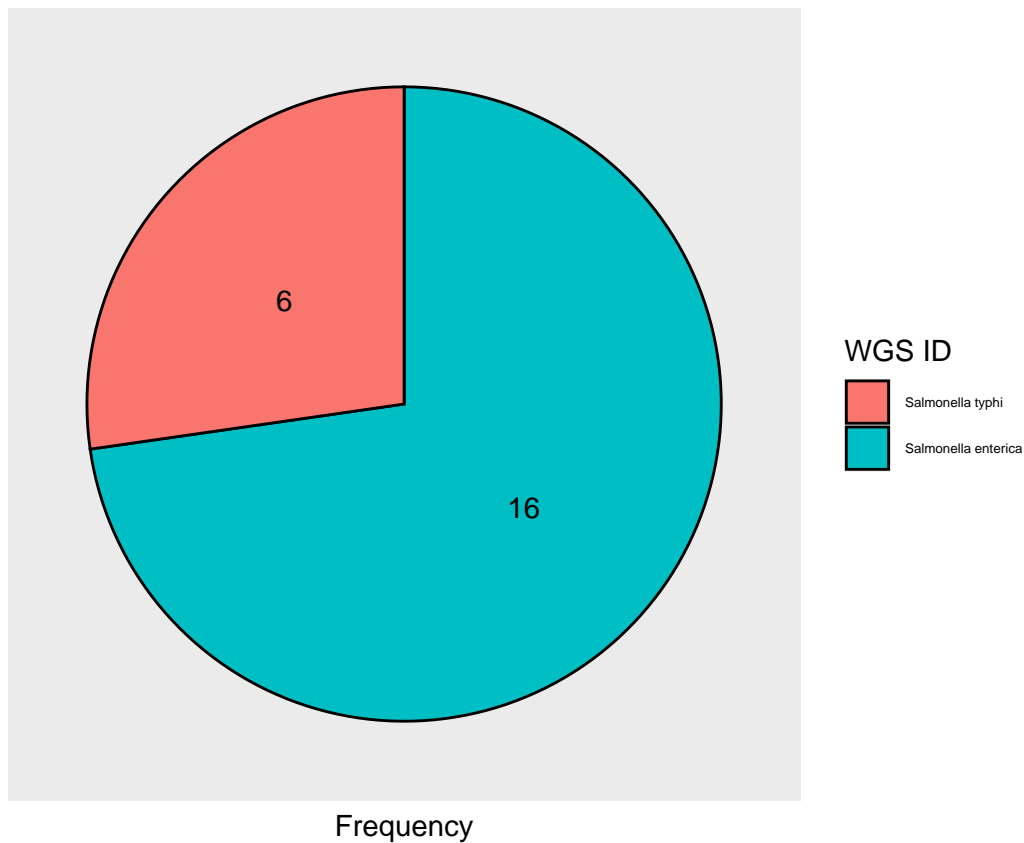| Isolate No.	Sample ID	Value with warning/s
5	24ARS_BRH0012	fastqc.1.Per.sequence.GC.content.metric_value, fastqc.1.Sequence.Length.Distribution.metric_value, fastqc.2.Per.sequence.GC.content.metric_value, fastqc.2.Sequence.Length.Distribution.metric_value
10	24ARS_BRT0041	fastqc.1.Per.sequence.GC.content.metric_value, fastqc.1.Sequence.Length.Distribution.metric_value, fastqc.2.Per.sequence.GC.content.metric_value, fastqc.2.Sequence.Length.Distribution.metric_value
12	24ARS_CRH0031	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
13	24ARS_CRH0049	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
21	24ARS_GMH0033	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

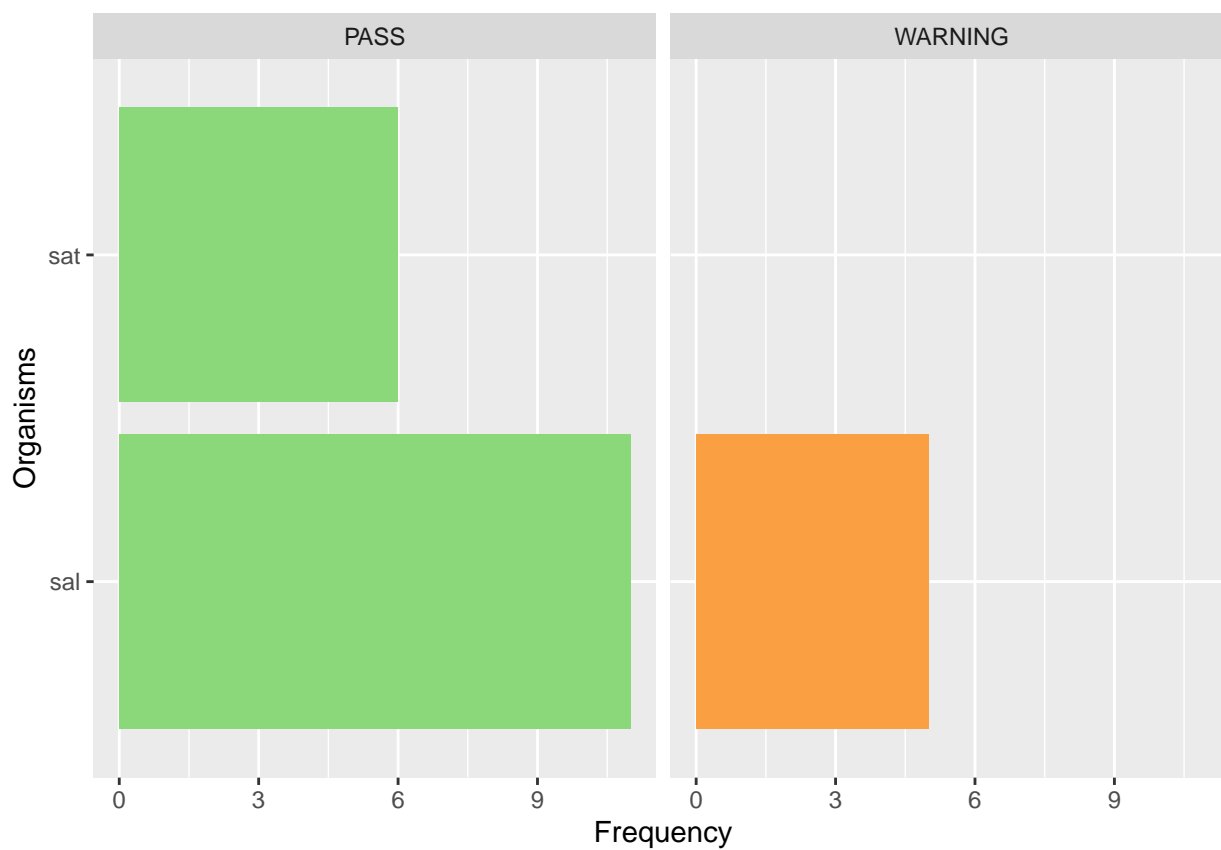| Sample ID	Remarks
	No QC failures found.

WGS_ID	Number
Salmonella enterica	16
Salmonella typhi	6

- 2 distinct species were identified among 22 isolates.

- 77.27 % (n=17) of the isolates passed the QC, while 22.73 % (n=5) were tagged with warning.

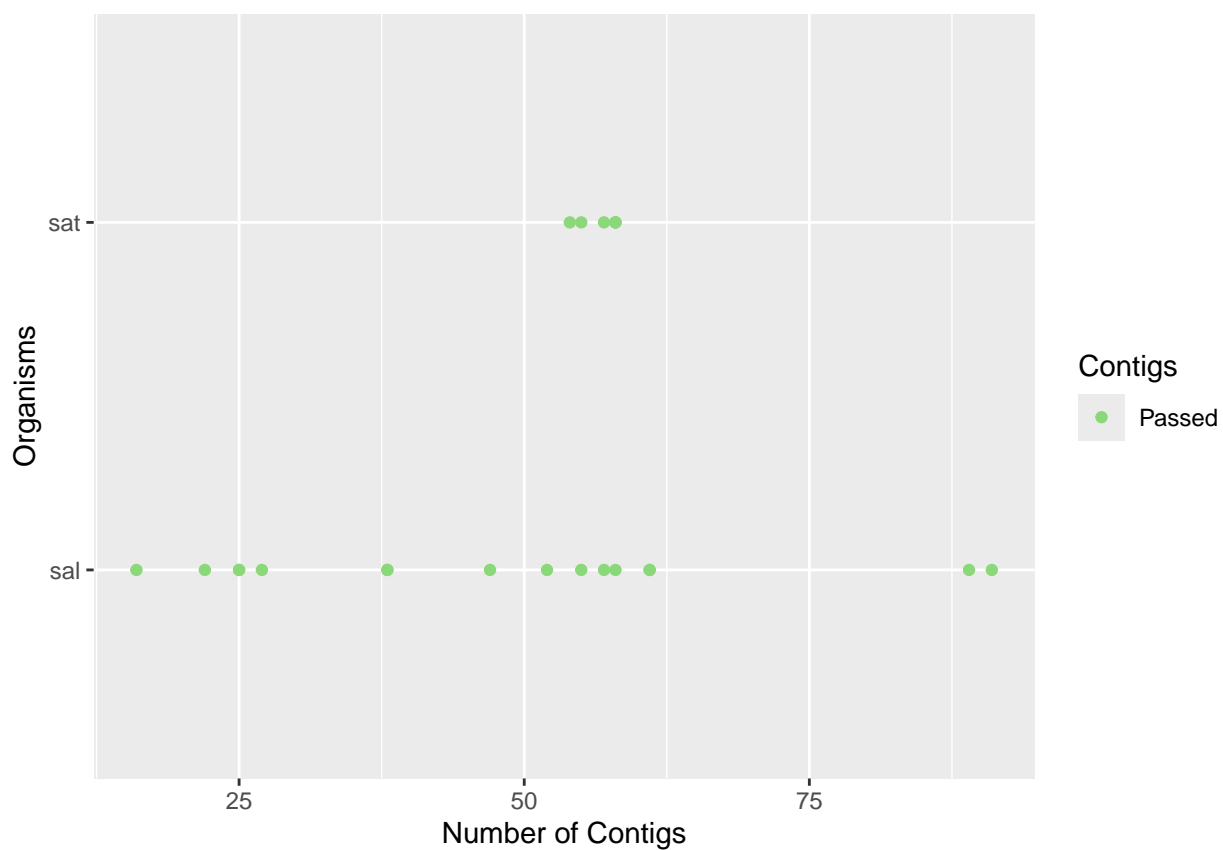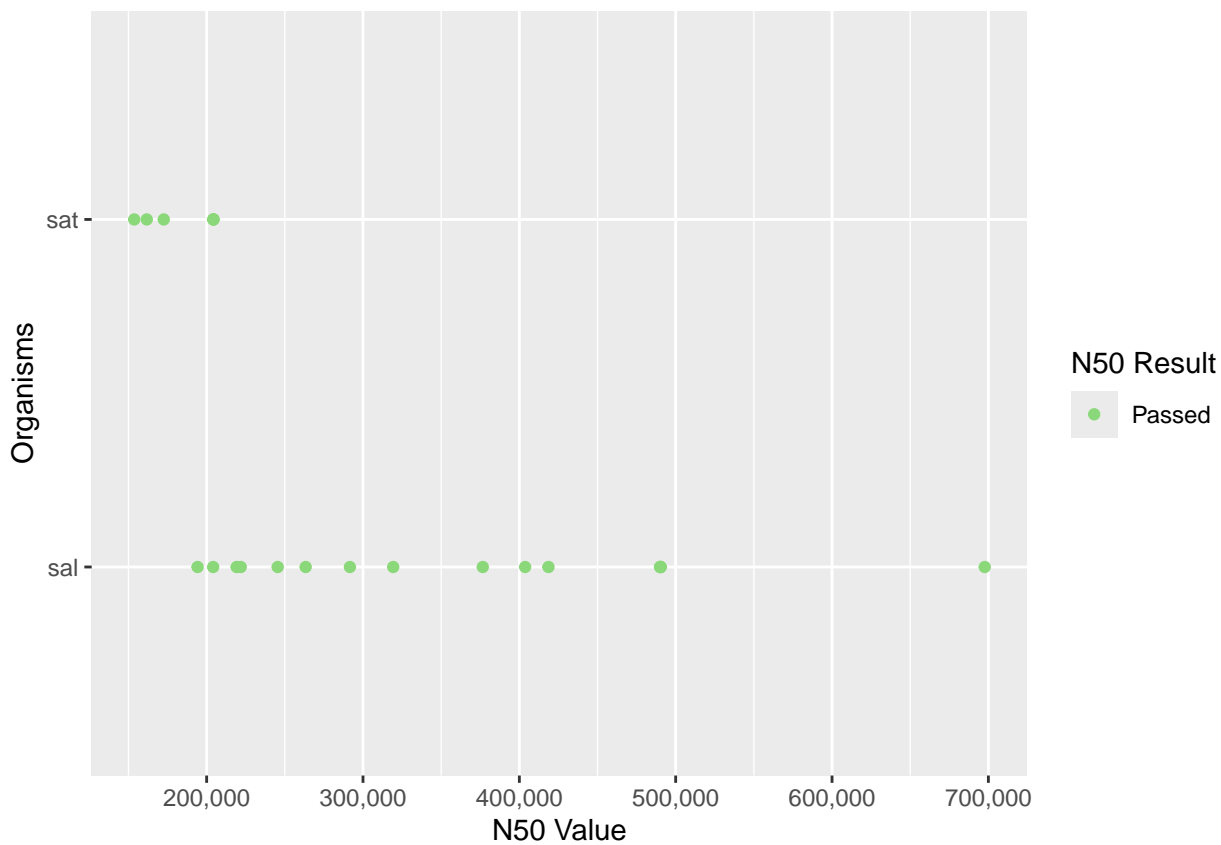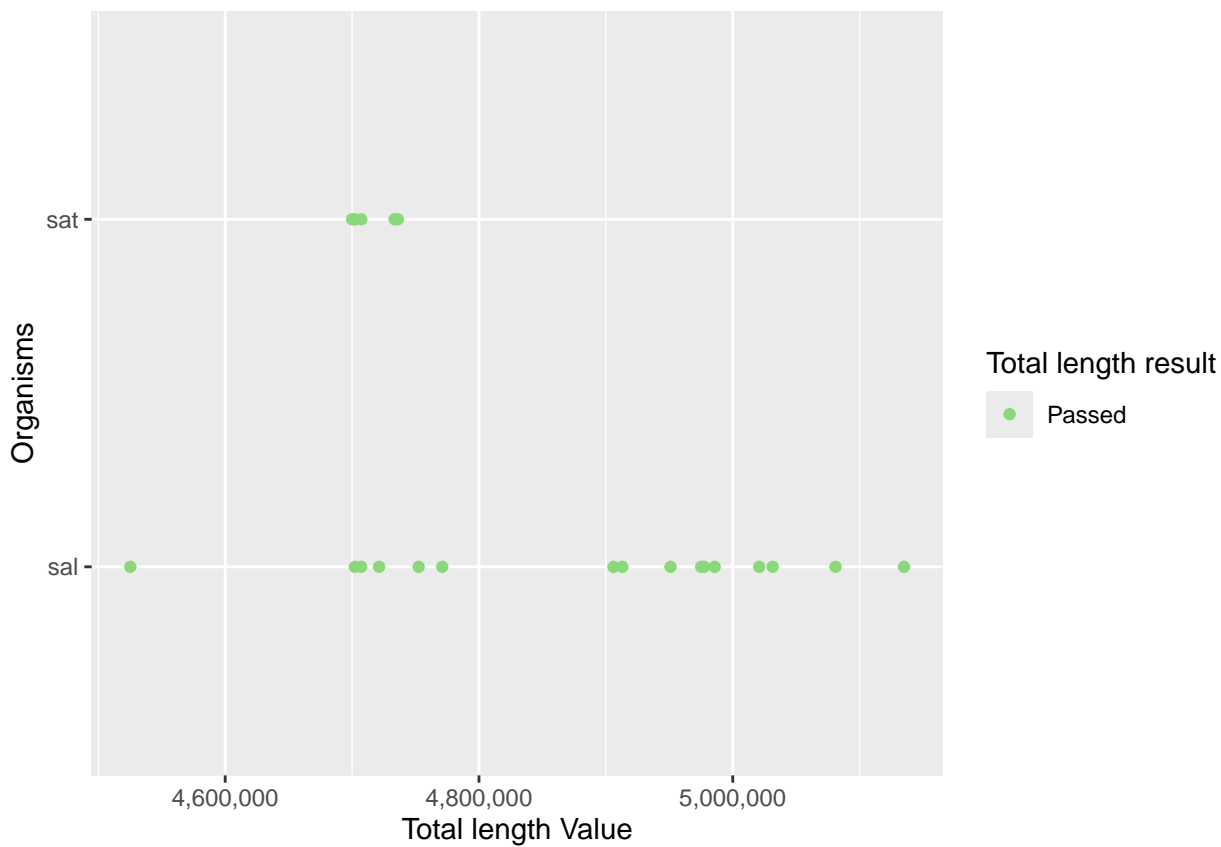- Concordance between ARSRL and WGS species report was 100.00 %.

GRAPHS

Frequency

Result Classification

Number of contigs

N50 Value

Total Length

RECOMMENDATION:

Sample ID	Action	Reason
No futher action required for this batch		

MLST RESULTS

sample_id	species	MLST	aroC.5.638	dnaN	hemD	hisD	purE	sucA	thrA
24ARS_BGH0073	Salmonella enterica	34	aroC(10)	19	12	9	5	9	2
24ARS_BGH0098	Salmonella enterica	32	aroC(17)	18	22	17	5	21	19
24ARS_BGH0099	Salmonella enterica	313	aroC(10)	7	12	9	112	9	2
24ARS_BGH0100	Salmonella enterica	32	aroC(17)	18	22	17	5	21	19
24ARS_BRH0012	Salmonella enterica	-	aroC(5,638)	2	3	7	6	6	11
24ARS_BRH0054	Salmonella enterica	19	aroC(10)	7	12	9	5	9	2
24ARS_BRT0041	Salmonella enterica	-	aroC(5,638)	2	3	7	6	6	11
24ARS_CRH0031	Salmonella enterica	437	aroC(13)	12	63	16	13	16	4
24ARS_CRH0049	Salmonella enterica	43	aroC(2)	14	24	14	2	19	8
24ARS_DMC0100	Salmonella enterica	365	aroC(130)	97	25	125	84	9	101
24ARS_DMC0101	Salmonella enterica	365	aroC(130)	97	25	125	84	9	101
24ARS_DMC0162	Salmonella enterica	1877	aroC(452)	26	30	144	131	145	134
24ARS_DMC0291	Salmonella enterica	34	aroC(10)	19	12	9	5	9	2
24ARS_GMH0033	Salmonella enterica	-	aroC(5,638)	2	3	7	6	6	11
24ARS_JLM0046	Salmonella enterica	-	aroC(17)	18	22	17	~5	21	19

Legend: (-) Not identified

sample_id	species	MLST	aroC.5.638	dnaN	hemD	hisD	purE	sucA	thrA
24ARS_BRH0068	Salmonella typhi	2	aroC(1)	1	2	1	1	1	5
24ARS_BRT0028	Salmonella typhi	1	aroC(1)	1	1	1	1	1	5
24ARS_CMC0007	Salmonella typhi	1	aroC(1)	1	1	1	1	1	5
24ARS_CVM0082	Salmonella typhi	1	aroC(1)	1	1	1	1	1	5
24ARS_DMC0218	Salmonella typhi	1	aroC(1)	1	1	1	1	1	5
24ARS_DMC0292	Salmonella typhi	2	aroC(1)	1	2	1	1	1	5

Legend: (-) Not identified

MLST RESULTS SUMMARY:

wgs_id	mlst_count
Salmonella enterica	- (n= 4), 1877 (n= 1), 19 (n= 1), 313 (n= 1), 32 (n= 2), 34 (n= 2), 365 (n= 2), 43 (n= 1), 437 (n= 1)
Salmonella typhi	1 (n= 4), 2 (n= 2)

Legend: (-) Not identified

AMR PREDICTION RESULTS

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 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_BGH0073	NA	blaTEM-1	NA	NA	mdsA, mdsB	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	merP, merT, merR	fieF	merC	NA	silP, silE	iroC, iroB, sinH, sodC1
24ARS_BGH0098	aac(3)-IVa	NA	blaCTX-M-65	floR	mdsA, mdsB	NA	aph(4)-Ia	NA	aadA1	sul1	tet(A)	dfrA14	NA	arsR	NA	NA	golT	NA	golS	merP, merT, merR	fieF	merC	qacEdelta1	NA	iroB, iroC, sinH, ybtP, ybtQ
24ARS_BGH0099	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	iroB, iroC, sodC1, sinH
24ARS_BGH0100	aac(3)-IVa	NA	blaCTX-M-65	floR	mdsA, mdsB	NA	aph(4)-Ia	NA	aadA1	sul1	tet(A)	dfrA14	NA	arsR	NA	NA	golT	NA	golS	merP, merT, merR	fieF	merC	qacEdelta1	NA	sinH, ybtP, ybtQ, iroB, iroC
24ARS_BRH0012	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sodC1, iroB, iroC, sinH
24ARS_BRH0013	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sodC1, sinH, iroB, iroC
24ARS_BRH0054	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	aph(6)-Id, aph(3")-Ib	sul2	tet(A)	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sinH, iroB, iroC, sodC1
24ARS_BRT0041	NA	blaTEM-1	NA	NA	mdsA, mdsB	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_CRH0031	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	aph(3")-Ib	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	cdtB, iroC, iroB, sinH
24ARS_CRH0049	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sinH, iroB, iroC
24ARS_DMC0100	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	iroB, iroC, sinH, sodC1
24ARS_DMC0101	NA	NA	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	golT	NA	golS	NA	fieF	NA	NA	NA	sinH, iroB, iroC, sodC1
24ARS_DMC0162	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	fieF	NA	NA	NA	ybtQ, ybtP, cdtB, iutA, iucA, mchF, iroB, iroC
24ARS_DMC0291	NA	blaTEM-1	NA	NA	mdsA, mdsB	NA	NA	NA	NA	NA	tet(B)	NA	arsC	arsR	arsB, arsA, arsD	pcoS, pcoR, pcoD, pcoC, pcoA	golT	silA, silB, silF, silC, silR, silS	golS	NA	fieF	NA	NA	silP, silE	iroC, iroB, sinH, sodC1
24ARS_GMH0033	NA	blaTEM-1	NA	NA	mdsA, mdsB	NA	NA	NA	aadA5	NA	NA	dfrA17	NA	NA	NA	NA	golT	NA	golS	merR, merT, merP	fieF	merC	qacEdelta1	NA	sodC1, sinH, iroB, iroC
24ARS_JLM0046	aac(3)-IVa	NA	blaCTX-M-65	floR	mdsA, mdsB	fosA3	aph(4)-Ia	aph(3')-Ia	aadA1	sul1	tet(A)	dfrA14	NA	arsR	NA	NA	golT	NA	golS	merP, merT, merR	fieF	merC	qacEdelta1	NA	sinH, ybtP, iroB, iroC

Salmonella typhi

sample_id	STRESS NA	VIRULENCE NA
24ARS_BRH0068	fieF	sinH, iroB, iroC, cdtB
24ARS_BRT0028	fieF	iroB, iroC, sinH, cdtB
24ARS_CMC0007	fieF	sinH, iroC, cdtB
24ARS_CVM0082	fieF	iroB, iroC, sinH, cdtB
24ARS_DMC0218	fieF	iroB, iroC, sinH, cdtB
24ARS_DMC0292	fieF	iroB, iroC, sinH, cdtB