

SUPPLEMENTARY MATERIAL

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Occurrence and genomic characterization of antimicrobial-resistant and potential pathogenic *Escherichia coli* from Italian artisanal food productions of animal origin

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Supplementary Table 1. Metadata (food product, batch and isolation site), species detection and assembly quality of 34 strains collected from artisanal productions. Preliminary identification carried out with biochemical and polymerase chain reaction methods as well as whole genome sequencing-based species identity are both reported.

Isolate ID	Product	Batch	Collection site	RapID™ ONE System and PCR identification	Post-WGS species confirmation	N° of contigs	Genome length (bp)	%GC	N50
3CW2	Cheese	3	Cheese warm room	<i>E. coli</i>	<i>E. coli</i>	203	5090791	51%	196565
3CP1522	Cheese	3	Storage day 15 at 2°C	<i>E. coli</i>	<i>E. coli</i>	264	5083027	51%	192450
6CP4	Cheese	6	Storage day 0	<i>E. coli</i>	<i>E. coli</i>	215	5079509	51%	204568
1SDB5	Salami	1	Drying week 1	<i>E. coli</i>	<i>E. coli</i>	121	4934948	51%	280324
1SBR3	Salami	1	Ripening week 3	<i>E. coli</i>	<i>E. coli</i>	118	4934708	51%	382548
1SBR181	Salami	1	Ripening week 18	<i>E. coli</i>	<i>E. coli</i>	108	4935647	51%	382548
1SBR281	Salami	1	Ripening week 28	<i>E. coli</i>	<i>E. coli</i>	157	4724681	51%	197395
2MB1	Salami	2	Raw meat mixture	<i>E. coli</i>	<i>E. coli</i>	133	4868647	51%	217139
2SBD5	Salami	2	Drying week 1	<i>E. coli</i>	<i>E. coli</i>	205	5099366	51%	148674
2SBR4	Salami	2	Ripening week 3	<i>E. coli</i>	<i>E. coli</i>	182	4861160	51%	200877
2SBR103	Salami	2	Ripening week 10	<i>E. coli</i>	<i>E. coli</i>	160	4677995	51%	193197
2SBR183	Salami	2	Ripening week 18	<i>E. coli</i>	<i>E. coli</i>	173	4678824	51%	101544
2SBR282	Salami	2	Ripening week 28	<i>E. coli</i>	<i>E. coli</i>	122	4758750	51%	213457
3MB1	Salami	3	Raw meat mixture	<i>E. coli</i>	<i>E. coli</i>	168	4812340	51%	196518
3SM1	Salami	3	Filler stuffer machine	<i>E. coli</i>	<i>E. coli</i>	83	4739971	50%	301607
3SBD4	Salami	3	Drying week 1	<i>E. coli</i>	<i>E. coli</i>	163	4813324	51%	198707
3SBR3	Salami	3	Ripening week 3	<i>E. coli</i>	<i>E. coli</i>	201	5241047	51%	267127
3SBR181	Salami	3	Ripening week 18	<i>E. coli</i>	<i>E. coli</i>	176	5172273	51%	171435
3SBR281	Salami	3	Ripening week 28	<i>E. coli</i>	<i>E. coli</i>	146	5019125	51%	289257
4MB1	Salami	4	Raw meat mixture	<i>E. coli</i>	<i>E. coli</i>	118	4757375	51%	265495
4SM3	Salami	4	Filler stuffer machine	<i>E. coli</i>	<i>E. coli</i>	394	5084346	51%	91064
4STM3	Salami	4	Table stuffing room	<i>E. coli</i>	<i>E. coli</i>	178	4861977	51%	182892
4SBD3	Salami	4	Drying week 1	<i>E. coli</i>	<i>E. coli</i>	113	4935593	51%	553490
4SBR1	Salami	4	Ripening week 3	<i>E. coli</i>	<i>E. hormaechei</i>	78	4934136	55%	410849
4SBR281	Salami	4	Ripening week 28	<i>E. coli</i>	<i>E. coli</i>	234	4857263	51%	105128
5MB1	Salami	5	Raw meat mixture	<i>E. coli</i>	<i>E. coli</i>	118	4707468	51%	176243

5STM5	Salami	5	Table stuffing room	<i>E. coli</i>	<i>E. coli</i>	176	4957818	50%	399768
5SBR5	Salami	5	Ripening week 3	<i>E. coli</i>	<i>E. coli</i>	105	5019732	51%	357810
5SBR101	Salami	5	Ripening week 10	<i>E. coli</i>	<i>E. coli</i>	128	4768947	51%	202915
5SBR281	Salami	5	Ripening week 28	<i>E. coli</i>	<i>E. coli</i>	141	4940995	51%	298600
6MB5	Salami	6	Raw meat mixture	<i>E. coli</i>	<i>E. coli</i>	243	5218561	50%	390223
6STM2	Salami	6	Table stuffing room	<i>E. coli</i>	<i>E. coli</i>	297	4973790	51%	95692
6SWM3	Salami	6	Drains ripening room	<i>E. coli</i>	<i>E. coli</i>	97	5020325	51%	326080
6SBR282	Salami	6	Ripening week 28	<i>E. coli</i>	<i>E. coli</i>	100	5020167	51%	347666

PCR, polymerase chain reaction; WGS, whole genome sequencing.

Supplementary Table 2. Identification of plasmid-encoded antimicrobial resistance and virulence genes combining ABRicate and MOB_suite results. Plasmid typing, such as replicon types, relaxase type, mobility and size, as well as reconstruction of putative plasmids, are also highlighted.

Feature	Strain	Mob_suite plasmid ID	Rep type(s)	Relaxase type(s)	Mobility	Size (bp)	Gene(s)	
AMR	3CW2	AA474	-	MOBP	conjugative	103344	sul1, aac(3)-Via, ant(3'')-Ia	
		AA176	IncQ1	MOBF	conjugative	139115	sul2, aph(3'')-Ib, aph(6)-Id, tet(A), blaTEM-1B	
	3CP1522	AA474	-	MOBP	conjugative	99557	aac(3)-Via, sul1	
		AA176	IncQ1	MOBF	conjugative	134310	sul2, aph(3'')-Ib, aph(6)-Id, tet(A), blaTEM-1B	
	6CP4	AA319	IncQ1	MOBF	conjugative	113445	mph(B), sul1, dfrA1, aph(6)-Id, aph(3'')-Ib, sul2	
		AA374	-	MOBH	mobilizable	125573	tet(A)	
		AB042	rep_cluster_2335	-	mobilizable	3071	qnrB19	
		AA374	-	MOBH	mobilizable	125573	blaTEM-1B	
	2SBR183	AA176	IncFIC, rep_cluster_2244	-	-	mobilizable	95890	blaTEM-1B, tet(A)
		AC120	IncQ1	-	-	non-mobilizable	12475	sul2, aph(3'')-Ib, aph(6)-Id
	2SBR282	AA176	-	MOBF	conjugative	148111	tet(B)	
	3SM1	AA304	IncFIA,IncFIB	MOBF	conjugative	78205	aph(3'')-Ib, aph(6)-Id	
	4MB1	AA176	-	MOBF	conjugative	150816	tet(B)	
	6STM2	AC082	-	-	-	non-mobilizable	20190	ant(3'')-Ia, sul1
		AA810	-	-	-	non-mobilizable	21509	tet(C)
Virulence	3CW2	AA176	IncFIA,IncFIC	MOBF	conjugative	139115	trat, iroN, iroE, iroD, iroC, iroB, iss2, ompt, iucA, iucB, iucC, iucD, iutA, mchf, cvaC, int, sitA	
		AA474	-	MOBP	conjugative	103344	cib	

	3CP1522	AA176	IncFIA,IncFIC	MOBF	conjugative	134310	trat, iroN, iroE, iroD, iroC, iroB, iss2, ompt, iutA, iucD, iucC, iucB, iucA, mchf, cvac, int
	6CP4	AA319	rep_cluster_2244, IncQ1, IncFIB	MOBF	conjugative	113445	trat, int, ompt, sitA
		AA374	-	MOBH	mobilizable	125573	aatA
	2MB1	AA378	IncY	-	non-mobilizable	94316	fedC, fedB
	2SBD5	AA304	IncFIA,IncFIB	MOBF	conjugative	98969	trat, hlyD, hlyB, hlyA, hlyC
		AA161	rep_cluster_2350	-	mobilizable	10267	cda, cka, cta
	2SBR4	AA378	IncY	-	non-mobilizable	95738	fedC, fedB
	2SBR183	AA176	IncFIB	-	mobilizable	95890	iutA, iucD, iucC, iucB, iucA, sitD, sitC, sitB, sitA, cma, iss2, iroB, iroC, iroD, iroE, iroN, cvac, ompt
	2SBR282	AA176	IncFIC,rep_cluster_2244, IncFIB	MOBF	conjugative	148111	trat, ompt, iroN, iroE, iroD, iroC, iroB, iss2, sitA, sitB, sitC, sitD, iucA, iucB, iucC, iucD, iutA, cma, cvac
	3SM1	AA304	IncFIA,IncFIB	MOBF	conjugative	78205	trat, ompt
	3SBR3	AA176	IncFIA,IncFIC, IncFIB	MOBF	conjugative	118105	iroN, iroE, iroD, iroC, iroB, iss2, trat, mchf, cvac, iutA, iucD, iucC, iucB, iucA, ompt, sitA, sitB, sitC, sitD
		AA282	-	MOBP	conjugative	76683	ireA, espP
		AA161	rep_cluster_2350	MOBP,MOBP	mobilizable	6822	cfa
	3SBR181	AA176	IncFIC,rep_cluster_2244, IncFIB	MOBF	conjugative	124836	trat, iutA, iucD, iucC, iucB, iucA, ompt, cma
		AE638	-	-	non-mobilizable	18720	iss2, iroB, iroC, iroD, iroE, iroN
	4MB1	AA176	IncFIC,rep_cluster_2244, IncFIB	MOBF	conjugative	150816	trat, iss2, iroB, iroC, iroD, iroE, iroN, ompt, sitA, sitB, sitC, sitD, iucA, iucB, iucC, iucD, iutA, cvac, ompt, cma
	4SM3	AA161	rep_cluster_2350	MOBP,MOBP	mobilizable	6988	cka

	4SM3	AA979	Col156	MOBQ	mobilizable	6078	cei
	4STM3	AA304	IncFIA,IncFIC	MOBF	conjugative	65057	trat, espV, espT
	4SBR281	AA179	IncFIC, rep_cluster_2244, IncFIB	MOBF	conjugative	138830	trat, cvac, mchf, iroN, iroE, iroD, iroC, iroB, iss2, iutA, iucD, iucC, iucB, iucA, sitD, sitC, sitB, sitA, cma, cba, ompt
		AA979	Col156	MOBQ	mobilizable	6079	cei
	5STM5	AA295	IncFIB, IncFIA,IncFIC	MOBF	conjugative	62576	trat, etpO, etpN, etpM, etpL, etpK, etpJ, etpI, etpH, etpG, etpF, etpE, etpD, etpC, stcE, katp
	5SBR5	AA176	IncFIA,IncFIB,In cFIC	MOBF	conjugative	129108	ompt, iss2, iroB, iroC, iroD, iroE, iroN, mchf, cvac, trat, sitA, sitB, sitC, sitD, iucA, iucB, iucC, iucD, iutA
	6STM2	AC082	-	-	non- mobilizable	20190	espV
		AA295	-	MOBF	conjugative	74672	etpO, etpN, etpM, etpL, etpK, etpJ, etpI, etpH, etpG, etpF, etpE, etpD, etpC, stcE, katp
		AC082	-	-	non- mobilizable	20190	int
		AA315	-	MOBF	conjugative	57068	trat, traJ
	6SWM3	AA176	IncFIA,IncFIB,In cFIC	MOBF	conjugative	129108	ompt, iss2, iroB, iroC, iroD, iroE, iroN, mchf, cvac, trat, sitA, sitB, sitC, sitD, iucA, iucB, iucC, iucD, iutA
	6SBR282	AA176	IncFIA,IncFIC, IncFIB	MOBF	conjugative	128644	trat, ompt, iss2, iroB, iroC, iroD, iroE, iroN, mchf, cvac, sitA, sitB, sitC, sitD, iucA, iucB, iucC, iucD, iutA

rep, replicon.