

SUPPLEMENTARY MATERIAL

Table S1. Main characteristics of the strains selected for this study

N° strain	Origin ¹	Resistance gene	Phylogroup	ST	CC ²	Antibiotic resistance profile ³									
						Penicillins	Cephalosporins	Monobactams	β-lactamase inhibitors	Carbapenems	Aminoglycosides	Quinolones	Tetracyclines	Others	MDR Extended MDR
1	Chicken (F)	SHV-12	A	ST6648	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	TET	CHL	+ +
2	Chicken (H)	CTX-M-1	F	ST117	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	-	TET	SXT	+ +
3	Chicken (H)	SHV-12, TEM-171	B1	ST101	CC101	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	TET	CHL	+ +
4	Chicken (H)	CTX-M-1	C	ST23	CC23	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMC, AMS, TZP	ETP, MER, IMP	-	LV, CIP, MXF, NOR	TET	SXT, FOT	+ +
5	Chicken (N)	SHV-12	F	ST2085	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	TET	CHL	+ +
6	Chicken (H)	SHV-12, TEML-278	Unknown	ST2599	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	TET	SXT, CHL	+ +
7	Chicken (H)	CTX-M-1	A	ST373	CC168	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	-	-	+ -
8	Chicken (H)	SHV-12, TEM-171	Unknown	ST2062	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	GM, TO	-	TET	CHL	+ +
9	Chicken (H)	SHV-12	F	ST354	CC354	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	TET	-	+ +
10	Turkey (M)	SHV-12	Clade I or II	ST23	CC23	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	MXF	TET	CHL	+ +
11	Turkey (M)	SHV-12	A	ST unknown	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	TET	CHL	+ +
12	Chicken (N)	SHV-12	A	ST665	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	MXF	TET	CHL	+ +
13	Chicken (S)	SHV-12, TEM-171	F	ST354	CC354	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	TET	SXT, CHL	+ +
14	Chicken (S)	SHV-12, CTX-M-1	A	ST93	CC168	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	TET	CHL	+ +
15	Chicken (F)	SHV-12, TEM-171	B1	ST937	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	-	-	+ -
16	Chicken (F)	SHV-12, TEM-171, CTX-M-1	A	ST10	CC10	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FOX, FEP	AZT	AMC	-	GM, TO	-	-	-	+ +
17	Chicken (F)	SHV-12	F	ST117	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	TET	-	+ -
18	Chicken (F)	CTX-M14	F	ST117	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	LV, CIP, MXF, NOR	TET	SXT	+ +
19	Chicken (N)	-	B1	ST1524	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	LV, CIP, MXF, NOR	TET	CHL	+ +
20	Chicken (F)	SHV-12, TEM-171, CTX-M-14	A	ST6094	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	-	-	+ -
21	Turkey (F)	TEML-278	B1	ST unknown	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FOX, FEP	AZT	AMS	-	-	CIP, MXF	TET, TIG	SXT	+ +
22	Water (R)	TEML-278, CTX-M-14	B1	ST1434	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FOX, FEP	AZT	AMS	-	GM, TO	LV, CIP, MXF, NOR	TET	SXT, FOT, CHL	+ +
23	Water (R)	TEML-278, CTX-M-14	B1	ST1434	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, FOX, FEP	AZT	AMC, AMS	-	GM, TO	LV, CIP, MXF, NOR	TET	SXT, FOT, CHL	+ +
24	Water (R)	TEML-278, CTX-M-14	A	ST746	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, FOX, FEP	AZT	AMC, AMS	-	GM, TO	LV, CIP, MXF, NOR	TET	SXT, FOT, CHL	+ +
25	Water (R)	CTX-M-15	C	ST410	CC23	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FOX, FEP	AZT	AMC, AMS	MER	-	LV, CIP, MXF, NOR	TET, TIG	SXT, CHL	+ +
26	Water (R)	TEML-278, CTX-M-14	B1	ST2599	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	LV, CIP, MXF, NOR	TET	-	+ +
27	Water (R)	CTX-M-1	A	ST1486	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	TET	CHL	+ +
28	Water (R)	CTX-M-1	A	ST1486	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	TET	CHL	+ +
29	Water (R)	TEML-278, SHV-12	B1	ST971	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	TET	-	+ -
30	Water (R)	-	Unknown	ST unknown	NA	-	-	-	-	-	-	-	-	COL	- -
31	Water (W)	CTX-M-1	A	ST6701	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	-	TET	-	+ +
32	Water (W)	TEML-278, CTX-M-14	B2	ST131	CC131	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	-	-	-	-	LV, CIP, MXF, NOR	-	-	+ -
33	Water (W)	CTX-M-14	D	ST2914	CC349	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FOX, FEP	AZT	AMS	-	-	-	-	SXT, FOT	+ +

N° strain	Origin ¹	Resistance gene	Phylogroup	ST	CC ²	Antibiotic resistance profile ³											
						Penicillins	Cephalosporins	Monobactams	β-lactamase inhibitors	Carbapenems	Aminoglycosides	Quinolones	Tetracyclines	Others	MDR Extended MDR		
34	Water (W)	CTX-M-15	B2	ST636	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	-	SXT	+	-	
35	Water (W)	SHV-12, CTX-M-1	A	ST10	CC10	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	-	CHL	+	+	
36	Water (W)	TEML-278, SHV-12, CTX-M-1	B1	ST162	CC469	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMC, AMS, TZP	-	-	LV, CIP, MXF, NOR	TET	SXT, CHL	+	+	
37	Water (W)	TEM-171, CTX-M-1	B1	ST1123	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	-	-	-	+	-	
38	Water (W)	TEML-278, CTX-M-14	D	ST38	CC38	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	-	AMS	-	GM, TO	-	TET	SXT	+	+	
39	Water (W)	TEML-278, CTX-M-14	D	ST38	CC38	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	-	AMS	-	GM, TO	-	TET	SXT	+	+	
40	Water (W)	TEML-278, CTX-M-1	D	ST unknown	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	GM, TO	LV, CIP, MXF, NOR	TET	SXT, FOT	+	+	
41	Water (W)	TEM-171, CTX-M-15	A	ST4599	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	TET	-	+	-	
42	Water (W)	TEML-278, CTX-M-15	A	ST227	CC10	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMC, AMS	-	-	-	-	FOT	+	+	
43	Water (W)	TEM-176, CTX-M-14, CTX-M-15	E	ST130	CC31	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	-	-	-	-	-	-	-	-	-	
44	Water (W)	OXA-1, CTX-M-15	B2	ST131	CC131	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMC, AMS	-	TO	LV, CIP, MXF, NOR	-	SXT	+	+	
45	Water (W)	TEML-278	A	ST52	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, FOX, FEP	AZT	AMC, AMS, TZP	ETP, MER, IMP	-	LV, CIP, MXF, NOR	-	SXT, FOT	+	+	
46	Water (C)	CTX-M-15	B1	ST297	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMC, AMS	-	-	LV, CIP, MXF, NOR	TET	SXT, CHL	+	+	
47	Water (C)	CTX-M-15	Unknown	ST unknown	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FOX, FEP	AZT	AMC, AMS, TZP	-	-	-	-	COL, FOT	+	+	
48	Water (C)	mcr-1	B2	ST155	CC155	-	-	-	-	-	-	LV, CIP, MXF, NOR	TET	COL, SXT	+	-	
49	Healthy carrier	TEM-116, CTX-M14	B1	ST971	NA	AMP	CZ, CXM, FEP	-	-	-	-	-	TET	COL	+	-	
50	Healthy carrier	TEM-116, CTX-M14	A	ST2404	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	GM, TO	-	TET	STX	+	+	
51	Healthy carrier	TEML-171, CTX-M1	D	ST38	CC38	AMP, MZ	CZ, CXM, CPD, CAZ, FOX	-	AMC, AMS	-	-	-	-	-	+	-	
52	Healthy carrier	TEML-171, CTX-M1	Unknown	ST unknown	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	-	-	STX	+	+	
53	Healthy carrier	TEM-171, CTX-M14, CTX-M15	B2	ST131	CC131	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	-	-	STX	+	+	
54	Healthy carrier	CTX-M14	A	ST unknown	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	-	TET	STX	+	+	
55	Healthy carrier	TEM-171	A	ST unknown	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	TET	STX	+	+	
56	Healthy carrier	TEM-171, CTX-M15	B2	ST131	CC131	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMC, AMS	-	-	LV, CIP, MXF, NOR	-	COL	+	+	
57	Healthy carrier	TEM-171, CTX-M15	B2	ST131	CC131	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	LV, CIP, MXF, NOR	-	FOT	+	+	
58	Healthy carrier	CTX-M14	B2	ST131	CC131	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	-	-	+	-	
59	Healthy carrier	CTX-M14	B2	ST131	CC131	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	-	-	+	-	
60	Healthy carrier	CTX-M15	C	ST unknown	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	AMS	-	-	LV, CIP, MXF, NOR	-	STX	+	+	
61	Healthy carrier	-	D	ST unknown	NA	AMP, PIP, MZ	CZ, CXM, CPD, CTX, CAZ, FEP	AZT	-	-	-	LV, CIP, MXF, NOR	-	STX	+	+	

¹ F, fillet; H, hamburger; N, nugget; M, meatballs; S, sausage; R, river; W, WWTP; C, collector.

² NA: not associated with any known clonal complex.

³AMP, ampicillin; PIP, piperacillin; MZ, mezlocillin; CZ, cefazolin; CXM, cefuroxime; CPD, cefpodoxime; CTX, cefotaxime; CAZ, ceftazidime; FOX, ceftiofur; FEP, cefepime; AZT, aztreonam; AMC, amoxicillin-clavulanic acid; AMS, ampicillin-sulbactam; TZP, piperacillin-tazobactam; ETP, ertapenem; MER, meropenem; IMP, imipenem; GM, gentamicin; TO, tobramycin; LV, levofloxacin; CIP, ciprofloxacin; MXF, moxifloxacin; NOR, norfloxacin; TET, tetracycline; TIG, tigecycline; SXT, trimethoprim-sulfamethoxazole; COL, colistin; FOT, fosfomycin; CHL, chloramphenicol.