



# Annex F – WGS data reported complementary to MIC values

## Annex to:

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## F.1 WGS data reported complementary to MIC values in 2021 and 2022

In 2021 and 2022, some reporting countries **reported both MIC and WGS data** for isolates showing a presumptive ESBL/AmpC/CP phenotype after susceptibility testing using panel 1. The tables presented in this Annex gives an overview of the ESBL-/AmpC-/CP-encoding genes reported for these isolates, as it was indicated by the reporting countries that the MIC values should be used for the analysis in the report.

In 2021, both MIC- and WGS data were reported for indicator commensal *Escherichia coli* collected in the routine monitoring (NL), for presumptive ESBL-/AmpC-/CP-producing *E. coli* collected in the specific monitoring for ESBL-/AmpC-/C-producing *E. coli* (Belgium, Iceland, Netherlands, Norway and Sweden), and for presumptive CP-producing *E. coli* collected in the specific monitoring for CP-producing *E. coli* (Spain). None of the countries reported both MIC- and WGS data for *Salmonella* spp. collected in the routine monitoring.

In 2022, MIC- and WGS data were reported for indicator commensal *E. coli* collected in the routine monitoring (Ireland and Norway), and for presumptive ESBL-/AmpC-/CP-producing *E. coli* collected in the specific monitoring of ESBL-/AmpC-/CP-producing *E. coli* (Austria and Ireland). None of the countries reported both MIC- and WGS data for presumptive CP-producers collected in the specific monitoring for CP-producing *E. coli* or for *Salmonella* spp. collected in the routine monitoring.

## F.2 WGS data from *Escherichia coli* isolates collected within the routine monitoring and subjected to supplementary testing in 2021

**Table 1:** WGS data in indicator *Escherichia coli* isolates from food-producing animals and meat thereof per country, 2021.

Country	Matrix	Sampling stage	ESBL family	ESBL gene	AmpC family	AmpC gene /mutation	CP family	CP gene	Tot units tested	No. isolates having the gene
Netherlands	Cattle meat	BCP	CTX-M	CTX-M-15	-	-	-	-	161	1
	Cattle	Slaughterhouse	CTX-M	CTX-M-1	-	-	-	-	306	1
Sweden	Fattening pigs	Slaughterhouse	-	-	AmpC mutation or insertion	C-42T	-	-	173	1

\*Cattle are cattle under one year of age, ESBL: extended-spectrum beta-lactamase, AmpC: AmpC beta-lactamase, CP: carbapenemase

### F.3 WGS data from *Escherichia coli* isolates collected within the specific monitoring of ESBL-/AmpC-/CP-producers and subjected to supplementary testing in 2021

**Table 2:** WGS data in presumptive ESBL/AmpC/CP-producing *Escherichia coli* isolates from food producing animals and meat thereof per country, 2021.

Country	Matrix	Sampling stage	ESBL family	ESBL gene	AmpC family	AmpC gene / mutation	CP family	CP gene	Tot units tested	No. isolates having the gene		
Belgium	Pig meat	Retail	CTX-M	CTX-M-55	-	-	-	-	300	1		
			TEM	TEM-52	-	-	-	-	300	1		
	Cattle meat	Retail	CTX-M	CTX-M-1	-	-	-	-	300	1		
				CTX-M-32	-	-	-	-	300	1		
				CTX-M-65	-	-	-	-	300	1		
	Cattle	Slaughterhouse	CTX-M	CTX-M-1	-	-	-	-	301	4		
				CTX-M-15	-	-	-	-	301	2		
				CTX-M-32	-	-	-	-	301	4		
	Fattening pigs	Slaughterhouse	-	-	AmpC mutation or insertion	AmpC mutation or insertion	-	-	300	1		
					CTX-M	CTX-M-1	-	-	-	-	300	1
						CTX-M-14	-	-	-	-	300	2
						CTX-M-32	-	-	-	-	300	1
						CTX-M-55	-	-	-	-	300	1
SHV					SHV-12	-	-	-	-	300	1	
TEM	TEM-52	-	-	-	-	300	1					
Iceland	Fattening pigs	Slaughterhouse	-	-	CMY	CMY-2	-	-	152	1		
			-	-		CMY-22	-	-	152	1		
			-	-		CMY-61	-	-	152	1		
Netherlands	Pig meat	Retail	CTX-M	CTX-M-1	-	-	-	-	320	3		

Country	Matrix	Sampling stage	ESBL family	ESBL gene	AmpC family	AmpC gene / mutation	CP family	CP gene	Tot units tested	No. isolates having the gene
Netherlands	Cattle meat	Retail	CTX-M	CTX-M-55	-	-	-	-	320	1
				CTX-M-1	-	-	-	-	583	3
				CTX-M-14	-	-	-	-	583	1
				CTX-M-15	-	-	-	-	583	5
				CTX-M-32	-	-	-	-	583	1
				CTX-M-55	-	-	-	-	583	1
			SHV	SHV-12	-	-	-	-	583	1
	Cattle	Slaughterhouse	-	-	AmpC mutation or insertion	C-42T	-	-	306	3
			CTX-M	CTX-M-1	-	-	-	-	306	29
				CTX-M-3	-	-	-	-	306	1
				CTX-M-8	-	-	-	-	306	1
				CTX-M-14	-	-	-	-	306	5
				CTX-M-15	-	-	-	-	306	45
				CTX-M-32	-	-	-	-	306	8
				CTX-M-55	-	-	-	-	306	3
			CTX-M-65	-	-	-	-	306	2	
			TEM	TEM-52	-	-	-	-	306	6
	Fattening pigs	Slaughterhouse	-	-	AMPC phenotype/geno type	C-42T	-	-	300	19
			-	-	CMY	CMY-2	-	-	300	2
			CTX-M	CTX-M-1	-	-	-	-	300	17
CTX-M-9				-	-	-	-	300	1	
CTX-M-15				-	-	-	-	300	5	
CTX-M-55			-	-	-	-	300	1		
TEM	TEM-52	-	-	-	-	300	2			
Norway	Pig meat	Retail	-	-	CMY	CMY-2	-	-	311	1
Norway	Cattle	Slaughterhouse	-	-	AmpC mutation or insertion	C-42T	-	-	295	3

Country	Matrix	Sampling stage	ESBL family	ESBL gene	AmpC family	AmpC gene /mutation	CP family	CP gene	Tot units tested	No. isolates having the gene
	Fattening pigs	Slaughterhouse	-	-	AmpC mutation or insertion	C-42T	-	-	321	44
			CTX-M	CTX-M-15	-	-	-	-	321	2
				CTX-M-55	-	-	-	-	321	1
Sweden	Cattle meat	Retail	CTX-M	CTX-M-3	-	-	-	-	303	1
	Cattle	Slaughterhouse	CTX-M	CTX-M-15	-	-	-	-	20	2
	Fattening pigs	Slaughterhouse	-	-	AmpC mutation or insertion	C-42T	-	-	300	22
			CTX-M	CTX-M-1	-	-	-	-	300	1
				CTX-M-15	-	-	-	-	300	2

\*Cattle are cattle under one year of age, ESBL: extended-spectrum beta-lactamase, AmpC: AmpC beta-lactamase, CP: carbapenemase

## F.4 WGS data from *Escherichia coli* isolates collected within the specific monitoring of CP-producers and subjected to supplementary testing in 2021

**Table 3:** WGS data in presumptive CP-producing *Escherichia coli* isolates from food producing animals and meat thereof per country, 2021.

Country	Matrix	Sampling stage	ESBL family	ESBL gene	AmpC family	AmpC gene /mutation	CP family	CP gene	Tot units tested	No. isolates having the gene
Spain	Fattening pigs	Slaughterhouse	-	-	-	-	OXA	OXA-48	423	2

ESBL: extended-spectrum beta-lactamase, AmpC: AmpC beta-lactamase, CP: carbapenemase

## F.5 WGS data from *Escherichia coli* isolates collected within the routine monitoring and subjected to supplementary testing in 2022

**Table 4:** WGS data in indicator *Escherichia coli* isolates from food-producing animals and meat thereof per country, 2022.

Country	Matrix	Sampling stage	ESBL family	ESBL gene	AmpC family	AmpC gene /mutation	CP family	CP gene	Tot units tested	No. isolates having the gene
Ireland	Broiler meat	BCP	CTX-M	CTX-M-55	CMY	CMY-2	-	-	7	1
Norway	Fattening turkey	Slaughterhouse	-	-	AmpC mutation or insertion	C-42T	-	-	110	1

ESBL: extended-spectrum beta-lactamase, AmpC: AmpC beta-lactamase, CP: carbapenemase, BCP: border control post



## F.6 WGS data from *Escherichia coli* isolates collected within the specific monitoring of ESBL-/AmpC-/CP-producers and subjected to supplementary testing in 2022

**Table 5:** WGS data in presumptive ESBL/AmpC/CP-producing *Escherichia coli* isolates from food producing animals and meat thereof per country, 2022.

Country	Matrix	Sampling stage	ESBL family	ESBL gene	AmpC family	AmpC gene /mutation	CP family	CP gene	Tot units tested	No. isolates having the gene	
Austria	Turkey meat	Retail	CTX-M	CTX-M-1	-	-	-	-	181	1	
				CTX-M-15	-	-	-	-	181	2	
				CTX-M-27	-	-	-	-	181	2	
				CTX-M-32	-	-	-	-	181	1	
	Broiler meat	Retail	CTX-M	TEM	TEM-126	-	-	-	-	181	1
				SHV	CTX-M-55	-	-	-	-	338	1
			SHV	SHV-12	-	-	-	-	338	2	
				SHV-2a	-	-	-	-	338	1	
Broilers	Slaughterhouse	TEM	TEM-52B	-	-	-	-	301	3		
		-	-	-	-	VIM	VIM-1	301	2		
Ireland	Broiler meat	BCP	CTX-M	CTX-M-8	-	-	-	-	7	2	
	Broilers	Slaughterhouse	CTX-M	CTX-M-1	-	-	-	-	300	1	

ESBL: extended-spectrum beta-lactamase, AmpC: AmpC beta-lactamase, CP: carbapenemase, BCP: border control post