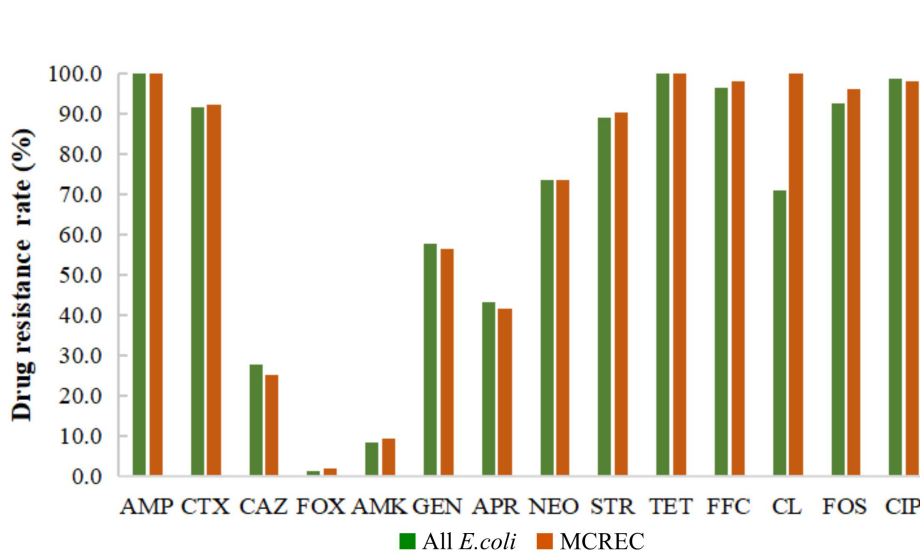
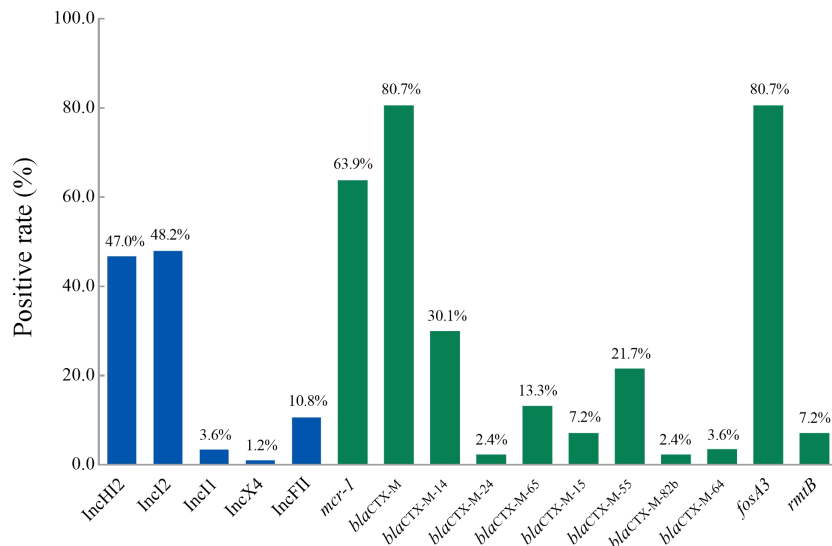


## Supplementary Materials

A



B



Supplementary Figure S1 Antibiotic resistance phenotypes and genotypes of recovered *E. coli*

A: Antibiotic resistance profile of all 83 *E. coli* and 53 *mcr-1*-positive *E. coli* (MCREC) (AMP, ampicillin; CTX, cefotaxime; CAZ, ceftazidime; FOX, ceftaxime; AMK, amikacin; GEN, gentamicin; APR, apramycin; NEO, neomycin; STR, streptomycin; TET, tetracycline; FFC, florfenicol; CL, colistin; FOS, fosfomycin; CIP, ciprofloxacin).

B: Detection of antibiotic resistance genes and plasmids in all 83 *E. coli* isolates.

**Supplementary Table S1 Primers used for PCR in this study**

Gene	Primer name	Sequence (5'-3')	Size (bp)	References
<i>mcr-1</i>	<i>mcr-1</i> -F	CGGTCAGTCCGTTTGTTC	309	Liu et al., 2016
	<i>mcr-1</i> -R	CTTGGTCGGTCTGTAGGG		
<i>bla</i> <sub>CTX-M-1G</sub>	<i>bla</i> <sub>CTX-M-1</sub> -F	CTTCCAGAATAAGGAATCCC	949	Pitout et al., 2004
	<i>bla</i> <sub>CTX-M-1</sub> -R	CGTCTAAGGCGATAAACAAA		
<i>bla</i> <sub>CTX-M-9G</sub>	<i>bla</i> <sub>CTX-M-9</sub> -F	TGACCGTATTGGGAGTTTG	902	Costa et al., 2006
	<i>bla</i> <sub>CTX-M-9</sub> -R	ATGATGACTCAGAGCATTTCG		
<i>fosA3</i>	FosA3-F	GCGTCAAGCCTGGCATT	282	Hou et al., 2012
	FosA3-R	GCCGTCAGGGTCGAGAAA		
<i>rmtB</i>	rmtB-F	ATATCAACGATGCCCTCAC	725	Li et al., 2015
	rmtB-R	AAGTTCTGTTCCGATGGTC		
<i>floR</i>	floR-F	CTGAGGGTGTGTCATCT AC	673	Chen et al., 2004
	floR-R	GCTCCGACAATGCTGACT AT		
IncHI2	IncHI2-F	TTTCTCCTGAGTCACCTGTAAACAC	644	Carattoli et al., 2005
	IncHI2-R	GGCTCACTACCGTTGTCATCCT		
IncI2	IncI2-F	CTGTCGGCATGTCTGTCTC	553	Lv et al., 2013
	IncI2-R	CTGGCTACCAGTTGCTCTAA		
IncI1	IncI1-F	CGAAAGCCGGACGGCAGAA	139	Carattoli et al., 2005
	IncI1-R	TCGTTCGTTCCGCCAAGTTCGT		
IncX4	IncX4-F	AGCAAACAGGGAAAGGAGAAGACT	569	Johnson et al., 2012
	IncX4-R	TACCCCAAATCGTAACCTG		
IncFII	FrepB-F	TGATCGTTTAAGGAATTTTG	270	Carattoli et al., 2005
	FrepB-R	GAAGATCAGTCACACCATCC		

**Supplementary Table S2 Primers used for determining genetic environment of *mcr-1***

Region	Primer name	Sequence (5'-3')	Size (bp)	References
<i>ISAp11-mcr-1</i>	ISAp-F	CGAAGCACCAAGACATCA	393	Yi et al., 2017
	MCR-R	TTTCTCGCTCGTTTATTGTA		
<i>mcr-1-ISAp11</i>	Mhp-F	TTGCCAGATTTGCTACTGT	696	Wu et al., 2018
	ISAp-R	TTTCTCGCTCGTTTATTGTA		
<i>IncI2-mcr-1</i>	IncI2-F	AGTGGATGTTACGGAGCAG	894	Wu et al., 2018
	mprA-R	CCACAAGAACAAACGGACT		
<i>mcr-1-IncI2</i>	clrAD-F	GTATCTGGTGCTGACTTTGA	723	Wu et al., 2018
	IncI2-R	ACTTAGCGATCTCGTTGTT		
<i>IncX4-mcr-1</i>	IncX4-F3	AGAGCTTGAGGGAATAGAA	879	Wu et al., 2018
	mcr-R3	CACAGGCTTTAGCACATAG		
<i>mcr-1-IncX4</i>	mcr-F5	AACGGTGTCTATCTACATGGTAT	1674	Wu et al., 2018
	IncX4-R5	CATTGAATTTGTTTCGTCCTC		
<i>IncHI2-mcr-1</i>	HI2-M-F	TGGGGTAATGAGCATGAAACA	1558	This study
	HI2-M-R	CACAAAGCCGAGATTGTCC		
<i>mcr-1-IncHI2</i>	M-HI2-F	GATGATCGCACCACGACGG	1215	This study
	M-HI2-R	CCGGAGGCAAAATTCCCGTT		

## REFERENCES

Carattoli A, Bertini A, Villa L, Falbo V, Hopkins KL, Threlfall EJ. 2005. Identification of plasmids by PCR-based replicon typing. *Journal of Microbiological Methods*, **63**(3): 219–228.

Chen S, Zhao SH, White DG, Schroeder CM, Lu R, Yang HC, McDermott PF, Ayers S, Meng JH. 2004. Characterization of multiple-antimicrobial-resistant *Salmonella* serovars isolated from retail meats. *Applied and Environmental Microbiology*, **70**(1): 1–7.

Costa D, Poeta P, Sáenz Y, Vinué L, Rojo-Bezares B, Jouini A, Zarazaga M, Rodrigues J, Torres C. 2006. Detection of *Escherichia coli* harbouring

extended-spectrum  $\beta$ -lactamases of the CTX-M, TEM and SHV classes in faecal samples of wild animals in Portugal. *Journal of Antimicrobial Chemotherapy*, **58**(6): 1311–1312.

Hou JX, Huang XH, Deng YT, He LY, Yang T, Zeng ZL, Chen ZL, Liu JH. 2012. Dissemination of the fosfomycin resistance gene *fosA3* with CTX-M  $\beta$ -lactamase genes and *rmtB* carried on IncFII plasmids among *Escherichia coli* isolates from pets in China. *Antimicrobial Agents and Chemotherapy*, **56**(4): 2135–2138.

Johnson TJ, Bielak EM, Fortini D, Hansen LH, Hasman H, Debroy C, Nolan LK, Carattoli A. 2012. Expansion of the IncX plasmid family for improved identification and typing of novel plasmids in drug-resistant *Enterobacteriaceae*. *Plasmid*, **68**(1): 43–50.

Li BB, Zhang Y, Wei JC, Shao DH, Liu K, Shi YY, Qiu YF, Ma ZY. 2015. Characterization of a novel small plasmid carrying the florfenicol resistance gene *floR* in *Haemophilus parasuis*. *Journal of Antimicrobial Chemotherapy*, **70**(11): 3159–3161.

Liu YY, Wang Y, Walsh TR, Yi LX, Zhang R, Spencer J, Doi Y, Tian GB, Dong BL, Huang XH, Yu LF, Gu DX, Ren HW, Chen XJ, Lv LC, He DD, Zhou HW, Liang ZS, Liu JH, Shen JZ. 2016. Emergence of plasmid-mediated colistin resistance mechanism MCR-1 in animals and human beings in China: a microbiological and molecular biological study. *The Lancet Infectious Diseases*, **16**(2): 161–168.

Lv LC, Partridge SR, He LY, Zeng ZL, He DD, Ye JH, Liu JH. 2013. Genetic characterization of IncI2 plasmids carrying *bla*<sub>CTX-M-55</sub> spreading in both pets and food animals in China. *Antimicrobial Agents and Chemotherapy*, **57**(6): 2824–2827.

Pitout JDD, Hossain A, Hanson ND. 2004. Phenotypic and molecular detection of CTX-M- $\beta$ -lactamases produced by *Escherichia coli* and *Klebsiella* spp. *Journal of Clinical Microbiology*, **42**(12): 5715–5721.

Wu RJ, Yi LX, Yu LF, Wang J, Liu YY, Chen XJ, Lv LC, Yang J, Liu JH. 2018. Fitness advantage of *mcr-1*-bearing IncI2 and IncX4 plasmids *in vitro*. *Frontiers in Microbiology*, **9**: 331.

Yi LX, Wang J, Gao YL, Liu YY, Doi Y, Wu RJ, Zeng ZL, Liang ZS, Liu JH. 2017. *mcr-1*-harboring *Salmonella enterica* serovar typhimurium sequence type 34 in pigs, China. *Emerging Infectious Diseases*, **23**(2): 291–295.