

Table S1. Primers used for detecting pHNAH4-1 and pHNAH46-1 markers

Primer	Nucleotide sequence (5'→3')	Target	Position in pHNAH46-1	Position in pHNAH4-1	Reference
<i>bla</i> _{CTX-M-1} -F	CTTCCAGAATAAGGAATCCC	<i>bla</i> _{CTX-M-1} group			1
<i>bla</i> _{CTX-M-1} -R	CGTCTAAGGCGATAAACAAA	<i>bla</i> _{CTX-M-1} group			1
ISEcp1-F	CTATCCGTACAAGGGAGTGT	ISEcp1			2
M1-R	CCATTGCCCGAGGTGAAG	<i>bla</i> _{CTX-M-1} group			2
RepA-F	CTGTCCGGCATGTCTGTCTC	<i>repA</i>	923-941		3
RepA-R	CTGGCTACCAGTTGCTCTAA	<i>repA</i>	1475-1456		3
finO-F	CCCGTGATTGTGGTCAAA	<i>finO</i>	3280-3297		3
finO-R	GGGTTATCCGCCAGGTAT	<i>finO</i>	3614-3597		3
nikB-F	ATCCAACCTACAGACGCCTTAC	<i>nikB</i>	20232-20253		3
nikB-R	CTGCGACCTGTGCTTGCT	<i>nikB</i>	21167-21150		3
rci-F	TGCCCGTTTCTGTTCTCG	<i>rci</i>	30212-30229		3
rci-R	TGCCCTGTTGTCATCATTATTC	<i>rci</i>	30886-30865		3
pilQ-F	CGTTGGCGTGTAAGGTCG	<i>pilQ</i>	36771-36788		3
pilQ-R	CCTGGCGAAAGCAAACAA	<i>pilQ</i>	37528-37511		3
ISEcp-F	TATTGTAGCATCGGTTTCC	<i>tnpA</i> of ISEcp1	10272-10290	24773-24755	3
HP2-R	TGTTGTCCCGTATCCTTAT	Incl2 backbone	11593-11575		3
CHP1-F	GCTAAATGCTTCGCAGGAG	Incl2 backbone	7095-7113	27950-27932	This study
Orf477-R	ATTCAGCACCACGAAACGA	<i>orf477</i> Δ	8054-8036	26991-27009	This study
AH4-F1	AAACCACGCCATCCTCTG	Incl1 backbone		5000-5017	This study
AH4-R1	GGCTGGGAGCACATCAAC	Tn1721(MRR1)		5482-5465	This study
AH4-F2	TTACCATCGGTTATCCCTT	Tn1721 (MRR1)		13779-13797	This study
AH4-R2	GTTTCCTCATCTTCGTGCT	Incl1 backbone		14626-14608	This study
AH4-F3	GTAAAGAGGCGGTATTCAA	Incl1 backbone		23322-23340	This study
AH4-R3	GCATTCTCAAGGAGCAGA	ISEcp1		24366-24349	This study
AH4I1-F1	TCATCACTGCCCTTACCG	Incl1 backbone		30342-30325	This study
AH4I2-R1	CCCATCATTACTACTAAACCC	Incl2 fragment		29163-29183	This study
AH4-F6	GGCGGTCACATCCTTC	Incl1 backbone		41912-41930	This study
AH4-R6	CAGCTAAACCCGGTAATCC	class II intron		42794-42776	This study
Rci1-F ^a	TATCAACGGTTGTTATTTCG	Incl1 <i>rci</i>		91716-91735	This study
pilV1-R ^a	GCACAGGAGGATTTGTCTT	Incl1 <i>pilU</i>		94749-94731	This study
Rci2-F	CAGGGCAAGTTCAAGACG	Incl2 <i>rci</i>	30880-30897		This study
pilV2-R	CAGCGTGAATAATAAAGGGAT	Incl2 <i>pilV</i>	32529-32509		This study

^aSelected PCR products were cloned in pMD19T and sequenced.

1. Liu JH, Wei SY, Ma JY, Zeng ZL, Lu DH, Yang GX, Chen ZL. 2007. Detection and characterisation of CTX-M and CMY-2 β-lactamases among *Escherichia coli* isolates from farm animals in Guangdong Province of China. *Int. J. Antimicrob. Agents* **29**:576-581.
2. Sun Y, Zeng Z, Chen S, Ma J, He L, Liu Y, Deng Y, Lei T, Zhao J, Liu JH. 2010. High prevalence of *bla*_{CTX-M} extended-spectrum β-lactamase genes in *Escherichia coli* isolates from pets and emergence of CTX-M-64 in China. *Clin Microbiol Infect* **16**:1475-1481.
3. Lv L, Partridge SR, He L, Zeng Z, He D, Ye J, Liu JH. 2013. Genetic characterization of Incl2 plasmids carrying *bla*_{CTX-M-55} spreading in both pets and food animals in China. *Antimicrob Agents Chemother.* **57**:2824-2827.

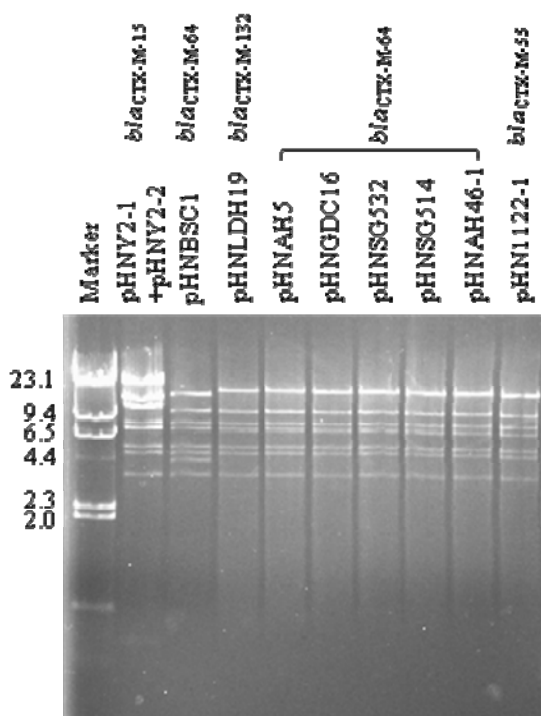


FIG S1. ApaLI restriction digestion profiles of IncI2 plasmids listed in Table 1. Transconjugants with pHNY2-1 also carry pHNY2-2 (IncN), as indicated. pHNBS C1 pHNAH5, pHNGDC16, pHN S G532, and pHN S G514 were from BSC1, AHC5, GDC16, SG0532-2, and SG0514-2 (Table 1), respectively. Marker, λ HindIII marker (TaKaRa Biotechnology, Dalian, China), with sizes shown in kb.

Table S2. Sequence differences between backbones of IncI2 plasmids carrying different *bla*_{CTX-M} genes (not including shufflons).

Plasmid	pHNY2-1^a	pHN1122-1^a	p1081-CTXM	pSTH21	pHNAH46-1^a	pCTXM64_C0967	pHNLDH19^a	pCTXM132_P0421
GenBank accession no.	KF601686.2	JN797501.1	KJ460501.1	LN623683.2	KJ020576.1	KP091735.1	KM207012.2	KP198615.1
<i>bla</i> _{CTX-M} gene	<i>bla</i> _{CTX-M-15}	<i>bla</i> _{CTX-M-55}	<i>bla</i> _{CTX-M-55}	<i>bla</i> _{CTX-M-55}	<i>bla</i> _{CTX-M-64}	<i>bla</i> _{CTX-M-64}	<i>bla</i> _{CTX-M-132}	<i>bla</i> _{CTX-M-132}
Method	454	454	Illumina	?	454	IonTorrent	454	IonTorrent
Position ^b	Gene/feature ^c							
4970-4975	<i>yafB-dnaJ</i>	6xT	5xT	6xT	6xT	6xT	6xT	6xT
5023	<i>yafB-dnaJ</i>	T	T	T	A	T	T	T
6323	<i>dnaJ</i>	G	-	G	G	G	G	G
6863	hp	G	G	G	G	A	G	G
7941	<i>yajA-bla</i> _{CTX-M-64}	C	C	C	T	C	C	C
9461-4	<i>ISEcpI</i>	1xAACA	2xAACA	1xAACA	1xAACA	1xAACA	1xAACA	1xAACA
11399-11400	<i>dnaJ</i> -hp	AG	AG	AG	AG	CT	CT	AG
13847-13853	<i>ycfA</i>	7xA	7xA	7xA	7xA	7xA	7xA	6xA
15466	hp	G	G	G	G	A	G	G
15636	hp	C	C	C	C	T	C	C
15987	hp	C	C	C	C	C	C	A
17474	<i>traL</i>	G	G	A	G	G	G	G
18234	<i>hp-nikA</i>	A	C	C	C	C	C	C
19771	<i>nikC</i>	A	A	A	G	A	A	A
21100-21135	<i>nikB</i>	2x18 bp	2x18 bp	2x18 bp	3x18 bp	2x18 bp	2x18 bp	2x18 bp
22857	<i>nikB</i> -hp	A	A	A	A	G	A	A
23774-23778	hp	2xTGATA	1xTGATA	1xTGATA	1xTGATA	1xTGATA	1xTGATA	1xTGATA
31146-31149	<i>rci</i> -shufflon	4xC	4xC	4xC	4xC	4xC	4xC	3xC
37605	<i>pilQ</i>	A	A	A	A	A	G	G
41180	<i>pilN</i>	G	G	G	A	G	G	G
43826-43833	<i>traK</i>	8xT	8xT	8xT	8xT	8xT	8xT	7xT
46177	<i>traH</i>	C	T	C	C	C	C	C
55521	<i>ygiA</i>	G	G	G	G	G	T	G
58291-58292	hp	2xT	2xT	2xT	2xT	2xT	2xT	possibly 3xT^d
60400-60472	<i>yhdA</i>	73 bp	73 bp	73 bp	missing	73 bp	73 bp	73 bp

^aDifferences in the plasmids that were sequenced in this study (names in bold) have been checked and confirmed.

^bPosition in pHNAH46-1, selected as an example with no insertions or deletions relative to other plasmids.

^cTwo gene/feature names separated by a dash indicates that the change is in an intergenic region; hp, hypothetical protein.

^din 727 bp region duplicated in pCTXM132_P0421 only.