## Supplementary Data

**Table S1.** Primers used for PCR and DNA sequencing in this study

| Primer name | Primer sequence (5′-3′) | Target (bp) | Reference |
|---|---|---|---|
| *bla*$_{\text{CTX-M-1G}}$-F | F:CTTCCAGAATAAGGAATCCC | 949 | [1] |
| *bla*$_{\text{CTX-M-1G}}$-R | R:CGTCTAAGGCGATAAACAAA | | |
| *bla*$_{\text{CTX-M-9G}}$-F | F:TGACCGTATTGGGAGTTTG | 902 | [1] |
| *bla*$_{\text{CTX-M-9G}}$-R | R:ACCAGTTACAGCCCTTCG | | |
| *fosA3*-F | F:GCGTCAAGCCTGGCATTT | 282 | [2] |
| *fosA3*-R | R:GCCGTCAGGGTCGAGAAA | | |
| *floR*-F | F:CTGAGGGTGTCGTCATCTAC | 673 | [3] |
| *floR*-R | R:GCTCCGACAATGCTGACTAT | | |
| *rmtB*-F | F:ACATCAACGATGCCCTCAC | 724 | [4] |
| *rmtB*-R | R:AAGTTCTGTTCCGATGGTC | | |
| *mcr-1*-F | F:CGGTCAGTCCGTTTGTTC | 309 | [5] |
| *mcr-1*-R | R:CTTGGTCGGTCTGTA GGG | | |
| *mcr-2*-F | F:GCGATGGCGGTCTATCCTGTAT | 378 | [6] |
| *mcr-2*-R | R:TGCGATGACATGGGGTGTCAGC | | |
| *mcr-3*-F | F:TATGGGTTACTATTGCTGG | 814 | [6] |

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| *mcr-3*-R | R:CTACCCTGATGCTCATCG | | |
| *mcr-4*-F | F:GTCATAGTGGTATAAAAGTACAG | 669 | [6] |
| *mcr-4*-R | R:CCACCGTCTATCAGAGCCAAC | | |
| *mcr-5*-F | F:GCGGTTGTCTGCATTTATCAC | 1042 | [6] |
| *mcr-5*-R | R:CTTTGAAAACCTGTCTTCGGCA | | |
| *mcr-6*-F | F:GTCCGGTCAATCCCTATCTGT | 556 | [6] |
| *mcr-6*-R | R:ATCACGGGATTGACATAGCTAC | | |
| *mcr-7*-F | F:TGCTCAAGCCCTTCTTTTCGT | 892 | [6] |
| *mcr-7*-R | R:TTCATCTGCGCCACCTCGT | | |
| *mcr-8*-F | F:AACCGCCAGAGCACAGAATT | 667 | [6] |
| *mcr-8*-R | R:TTCCCCCAGCGATTCTCCAT | | |

**Table S2.** Characterization of NDM-producing isolates

| Isolate | Sample type | Market | Date of Isolation | MLST | NDM gene type | Plasmid replicon type | Size (kb) | Genetic context of *bla*$_{NDM}$ | MIC of imipenem (mg/L) | Other resistance pattern | Other resistance genes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Escherichia coli* | | | | | | | | | | | |
| HD7C2 | chicken | FM3 | 2017/9/23 | ST746 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| HP6P012 | pork | FM10 | 2016/7/10 | ST48 | NDM-5 | IncX3 | ~50 | Type I | 2 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| HP6P026 | pork | FM5 | 2016/7/10 | ST5171 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, SXT | |
| HP6P039 | pork | FM20 | 2016/7/10 | ST6786 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| HP6P040 | pork | FM20 | 2016/7/10 | ST7111 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT | *floR* |
| HP6P055 | pork | FM2 | 2016/7/10 | ST7111 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT | *floR* |
| HZ11 | pork | SM2 | 2017/10/2 | ST877 | NDM-5 | IncX3 | 46.16 | Type I | 1 | AMP, CAZ, CTX, FOX, NEO, SXT, DOX, | *bla*$_{CTX-M-55}$ |
| HZ18 | chicken | SM6 | 2017/10/2 | ST93 | NDM-5 | IncX3 | 46.16 | Type I | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, CL, FOS, SXT, CIP | *mcr-1*, *floR*, *bla*$_{CTX-M-65}$, *fosA3* |
| HZ21 | pork | SM2 | 2017/10/2 | ST865 | NDM-5 | IncX3 | ~50 | Type I | 1 | AMP, CAZ, CTX, FOX, NEO, FFC, SXT | |
| HZ6B007 | beef | FM23 | 2016/11/11 | ST48 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| HZ6P003 | pork | FM23 | 2016/7/20 | ST8623 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, FFC, NEO, DOX | *bla*$_{CTX-M-24}$, *floR* |
| HZ6P010 | pork | FM24 | 2016/7/20 | ST5229 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, SXT, CIP | |
| HZ6P018 | pork | FM11 | 2016/7/20 | ST48 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, NEO, FFC, | *floR* |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | DOX, SXT | |
| HZ6P033 | pork | FM23 | 2016/11/11 | ST3489 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, NEO, CL, DOX, SXT, CIP | *mcr-1* |
| HZ7P36 | pork | FM1 | 2017/9/24 | ST7111 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| LW2 | chicken | SM4 | 2017/10/3 | ST10 | NDM-5 | IncX3 | ~50 | Type I | 2 | AMP, CAZ, CTX, FOX, NEO, FOS, DOX, SXT, CIP | *bla*$_{\text{CTX-M-14}}$, *fosA3* |
| LW3 | chicken | SM4 | 2017/10/3 | ST10 | NDM-5 | IncX3 | ~50 | Type I | 2 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, FOS, SXT, CIP | *bla*$_{\text{CTX-M-65}}$, *floR*, *fosA3* |
| LW6C01 | chicken | FM8 | 2016/7/20 | ST6793 | NDM-5 | IncX3 | ~50 | Type I | 16 | AMP, CAZ, CTX, FOX, FOS, FFC, DOX,SXT, CIP | *bla*$_{\text{CTX-M-65}}$, *floR*, *fosA3* |
| LW6P17 | pork | FM15 | 2016/7/20 | ST218 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| LW7C26 | chicken | FM16 | 2017/9/24 | ST1011 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX,CL, FOS, SXT, CIP | *bla*$_{\text{CTX-M-14,}}$ *mcr-1*, *floR*, *fosA3* |
| PY7C29 | chicken | FM17 | 2017/9/24 | ST46 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, SXT, CIP | |
| PY7P49 | pork | FM17 | 2017/9/24 | ST10 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| PY7P57 | pork | FM4 | 2017/9/24 | ST8622 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT, CIP | *floR* |
| TH6P02 | pork | FM15 | 2016/7/20 | ST218 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, NEO, SXT, DOX | |
| TH6P14 | pork | FM21 | 2016/7/20 | ST218 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| TH6P16 | pork | FM27 | 2016/7/20 | ST7111 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| TH7P19 | pork | SM5 | 2017/9/23 | ST8703 | NDM-5 | IncX3 | ~50 | Type I | 2 | AMP, CAZ, CTX, FOX, DOX | |
| TH7P22 | pork | FM27 | 2017/9/23 | ST48 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| TH7P24 | pork | SM7 | 2017/9/23 | ST165 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT, CIP | *bla*$_{\text{CTX-M-14}}$, *floR* |
| YX6C03 | chicken | FM18 | 2016/7/8 | ST539 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, CL, SXT, CIP | *mcr-1* |
| YX6C04 | chicken | FM19 | 2016/7/8 | ST48 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, DOX, SXT, FFC, SXT | *floR* |
| YX6C15 | chicken | FM13 | 2016/7/8 | ST746 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, NEO, FOS, SXT, CIP | *bla*$_{\text{CTX-M-14}}$, *fosA3* |
| YX6C18 | chicken | FM26 | 2016/7/8 | ST2732 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, FFC, DOX, SXT, CIP | *floR* |
| YX6C025 | chicken | FM12 | 2016/11/19 | ST6395 | NDM-5 | IncX3 | ~50 | Type I | 16 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT, CIP | *bla*$_{\text{CTX-M-55}}$, *floR* |
| YX6C30 | chicken | FM9 | 2016/11/19 | ST3057 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, FFC, SXT, CIP | *floR* |
| YX6P05 | pork | FM18 | 2016/7/8 | ST3057 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| YX6P35 | pork | FM6 | 2016/7/8 | ST1486 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, SXT | |
| YX6P38 | pork | FM13 | 2016/7/8 | ST154 | NDM-5 | IncX3 | 46.16 | Type I | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, CL, SXT | *mcr-1*, *floR* |
| YX6P40 | pork | FM25 | 2016/10/15 | ST3057 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| YX6P44 | pork | FM14 | 2016/10/15 | ST48 | NDM-5 | IncX3 | 46.16 | Type I | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| YX6P58 | pork | FM22 | 2016/10/15 | ST48 | NDM-5 | IncX3 | 46.16 | Type I | 8 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| YX6P67 | pork | FM22 | 2016/10/15 | ST48 | NDM-5 | IncX3 | 46.16 | Type I | 16 | AMP, CAZ, CTX, FOX, CL | *mcr-1*, *bla*$_{\text{CTX-M-65}}$ |
| YX6P69 | pork | FM12 | 2016/11/19 | ST48 | NDM-5 | IncX3 | ~50 | Type I | 16 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, CL, SXT, CIP | *mcr-1*, *floR* |
| YX6P92 | pork | FM7 | 2016/11/19 | ST48 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, DOX, CL, | *mcr-1*, *bla*$_{\text{CTX-M-65}}$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | SXT, CIP | |
| GBY8R01P | pork | FM30 | 2018/10/02 | ST5229 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| GBY8R16P1 | pork | FM31 | 2018/10/02 | New ST | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, AMI, GEN, DOX, FFC, SXT | *floR*, *rmtB* |
| GHZ8R03P1 | pork | FM33 | 2018/10/20 | ST617 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT, CIP | *floR* |
| GHZ8R05P | pork | FM33 | 2018/10/20 | ST641 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT | *floR* |
| GHZ8R06P | pork | FM33 | 2018/10/20 | ST641 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC | *floR* |
| GHZ8R18-P | pork | FM34 | 2018/10/20 | ST767 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| GHZ8R35-P | pork | SM9 | 2018/10/20 | ST10 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, DOX, FFC | *floR* |
| GHZ8R52-P | pork | SM10 | 2018/10/20 | ST195 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, FFC | *floR* |
| GTH8R06-R | pork | FM15 | 2018/9/21 | ST10 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, FOS, SXT, CIP | *floR*, *fosA3* |
| GTH8R12-P | chicken | FM27 | 2018/9/21 | ST167 | NDM-5 | IncX3 | ~50 | Type I | 32 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT, CIP | *floR*, $bla_{\text{CTX-M-55}}$ |
| GTH8R18R1 | chicken | SM14 | 2018/9/21 | ST48 | NDM-5 | IncX3 | ~50 | Type I | 2 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT, CIP | *floR*, $bla_{\text{CTX-M-65}}$ |
| GTH8R18R3 | chicken | SM14 | 2018/9/21 | ST48 | NDM-1 | IncX3 | ~50 | Type I | 16 | AMP, CAZ, CTX, FOX, NEO, FFC, SXT | *floR*, $bla_{\text{CTX-M-65}}$ |
| GTH8R21-R | chicken | FM15 | 2018/9/21 | ST117 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR*, $bla_{\text{CTX-M-14}}$ |
| GTH8R24-P | chicken | FM36 | 2018/9/21 | ST93 | NDM-7 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, FFC, FOS, SXT, CIP | *floR*, *fosA3* |
| GTH8R25B2 | chicken | SM15 | 2018/9/21 | ST10 | NDM-5 | IncX3 | ~50 | Type I | 16 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, CL, FOS, SXT, CIP | $bla_{\text{CTX-M-14,}}$ *mcr-1*, *fosA3*, *floR*, |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| GTH8R35P1 | pork | FM15 | 2018/9/21 | ST744 | NDM-5 | IncX3 | ~50 | Type I | 16 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| GTH8R36-B | pork | FM15 | 2018/9/21 | ST101 | NDM-5 | IncX3 | ~50 | Type I | 1 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| GYX8R10-P | pork | FM19 | 2018/10/13 | ST617 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT, CIP | *floR* |
| GYX8R26-P | chicken | FM38 | 2018/10/13 | ST101 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT, CIP | *floR* |
| GYX8R30-P | chicken | SM17 | 2018/10/13 | New ST | NDM-5 | IncX3 | ~50 | Type I | 16 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, CL, FOS | *bla*$_{\text{CTX-M-65,}}$ *mcr-1*, *floR*, *fosA3* |
| GYX8R37-Y | chicken | FM39 | 2018/10/13 | ST2456 | NDM-5 | IncX3 | ~50 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, FFC, DOX, SXT | *floR* |
| GHZ8R04P1 | pork | FM33 | 2018/10/20 | ST5229 | NDM-5 | IncX3 | ~50 | Type II | 2 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT, CIP | *floR* |
| GHZ8R09-P | chicken | FM33 | 2018/10/20 | ST48 | NDM-5 | IncX3 | ~50 | Type II | 8 | AMP, CAZ, CTX, FOX, FFC, SXT | *floR* |
| GTH8R19-P | chicken | FM15 | 2018/9/21 | ST1252 | NDM-5 | IncX3 | ~50 | Type II | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT | *floR* |
| GYX8R04-P | chicken | FM6 | 2018/10/13 | ST6725 | NDM-5 | IncX3 | ~50 | Type II | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT, CIP | *floR* |
| GYX8R13-B | chicken | FM19 | 2018/10/13 | ST1204 | NDM-5 | IncX3 | ~50 | Type II | 8 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| CS23P | chicken | SM12 | 2018/10/26 | ST7593 | NDM-5 | IncX3 | ~50 | Type IV | 2 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT, CIP | *floR* |
| CS25P | pork | SM13 | 2018/10/26 | ST7593 | NDM-5 | IncX3 | ~50 | Type IV | 2 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT, CIP | *floR* |
| GYX8R02P2 | pork | FM6 | 2018/10/13 | ST10 | NDM-5 | IncX3 | ~50 | Type VI | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| GYX8R05-P | chicken | FM6 | 2018/10/13 | ST4015 | NDM-5 | IncX3 | ~50 | Type VII | 4 | AMP, CAZ, CTX, FOX, GEN, FFC, DOX, SXT | *floR* |
| GBY8R32P | pork | FM32 | 2018/10/02 | ST942 | NDM-5 | IncX3 | ~50 | ND | 16 | AMP, CAZ, CTX, FOX, DOX, FFC, | *floR* |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | SXT | |
| HP6P038 | pork | FM20 | 2016/7/10 | ST117 | NDM-5 | F2:A-:B- | ~80 | Type I | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT | *floR* |
| YX45 | chicken | SM3 | 2017/10/3 | ST1114 | NDM-1 | ND | ~128 | ND | 2 | AMP, CAZ, CTX, FOX, AMI, GEN, NEO, DOX, FFC, FOS, SXT, CIP | *bla*$_{\text{CTX-M-65}}$, *floR*, *fosA3*, *rmtB* |
| GBY8R18R1 | chicken | FM31 | 2018/10/02 | ST2165 | NDM-5 | ND | ~270 | ND | 8 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| GHZ8R13-B | pork | SM8 | 2018/10/20 | ST10 | NDM-5 | ND | ~60 | ND | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| GHZ8R49-P | chicken | FM35 | 2018/10/20 | ST683 | NDM-5 | ND | ~240 | ND | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| GHZ8R51P2 | chicken | FM35 | 2018/10/20 | ST7154 | NDM-5 | ND | ~260 | ND | 16 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| GHZ8R63P2 | pork | SM11 | 2018/10/20 | ST641 | NDM-5 | ND | ~150 | ND | 1 | AMP, CAZ, CTX, FOX, DOX, SXT, CIP | |
| GHZ8R64-P | pork | SM11 | 2018/10/20 | ST10 | NDM-5 | ND | ~90 | ND | 2 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, CIP | *floR* |
| CS30P | chicken | SM13 | 2018/10/26 | ST115 | NDM-5 | ND | ~110 | ND | 2 | AMP, CAZ, CTX, FOX, FFC, CL, SXT, CIP | *mcr-1*, *floR* |
| GTH8R05-P | pork | SM14 | 2018/9/21 | ST2732 | NDM-5 | ND | ~110 | ND | 2 | AMP, CAZ, CTX, FOX, AMI, GEN, NEO, DOX, FFC, FOS, SXT, CIP | *floR*, *bla*$_{\text{CTX-M-55}}$, *fosA3* |
| GTH8R14-P | chicken | FM27 | 2018/9/21 | ST165 | NDM-5 | ND | ~260 | ND | 2 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT, CIP | *floR* |
| GTH8R18Y1 | chicken | SM14 | 2018/9/21 | ST410 | NDM-5 | ND | ~105 | ND | 16 | AMP, CAZ, CTX, FOX, NEO, FOS, SXT, CIP | *fosA3* |
| GTH8R39-P | pork | FM37 | 2018/9/21 | ST10 | NDM-5 | ND | ~70, ~50 | ND | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| GYX8R09-P | pork | FM19 | 2018/10/13 | ST10 | NDM-5 | ND | ~90 | ND | 16 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| GYX8R12-P | chicken | FM19 | 2018/10/13 | ST4937 | NDM-5 | ND | ~100 | ND | 2 | AMP, CAZ, CTX, FOX, DOX, FFC, | *floR* |

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| | | | | | | | | | | SXT, CIP | |
| GYX8R20-P | pork | SM16 | 2018/10/13 | ST746 | NDM-5 | ND | ~90 | ND | 4 | AMP, CAZ, CTX, FOX, AMI, GEN, NEO, DOX, FFC, SXT | *floR*, *rmtB* |
| GYX8R39-P | chicken | FM39 | 2018/10/13 | ST1844 | NDM-5 | ND | ~280 | ND | 8 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR* |
| GHZ8R08P1 | chicken | FM33 | 2018/10/20 | ST8758 | NDM-5 | Chromosome | NA | ND | 4 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, SXT | *floR*, $bla_{\text{CTX-M-65}}$ |
| GTH8R01-R | pork | FM27 | 2018/9/21 | ST10 | NDM-5 | ND | ND | ND | 16 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| *Klebsiella pneumoniae* | | | | | | | | | | | |
| HZ6B005 | beef | FM23 | 2016/11/11 | ST1 | NDM-5 | IncX3 | 46.16 | Type I | 8 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX | *floR* |
| YX6B006 | beef | FM26 | 2016/7/8 | ST35 | NDM-5 | IncX3 | ~50 | Type I | 16 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT | *floR* |
| YX6P029 | pork | FM28 | 2016/7/8 | ST327 | NDM-5 | IncX3 | ~50 | Type I | 8 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, CL, SXT | *mcr-1*, *floR* |
| HZ6P005 | pork | FM23 | 2016/7/20 | ST1 | NDM-5 | IncX3 | ~50 | Type I | 2 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, CL, FOS, SXT, CIP | *mcr-1*, *floR* |
| GYX8R15-B | pork | FM40 | 2018/10/13 | ST25 | NDM-5 | IncX3 | ~50 | Type I | 16 | AMP, CAZ, CTX, FOX, GEN, FFC, DOX, CL, SXT, CIP | *mcr-1*, *floR* |
| GYX8R26-B | chicken | FM38 | 2018/10/13 | ST11 | NDM-5 | IncX3 | ~50 | Type II | 16 | AMP, CAZ, CTX, FOX, DOX, FFC, FOS, SXT, CIP, TGC | *floR* |
| GHZ8R6-B | pork | FM33 | 2018/10/20 | ST45 | NDM-1 | IncX3 | ~60 | Type III | 1 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT | *floR* |
| GHZ8R16B1 | pork | FM34 | 2018/10/20 | ST3484 | NDM-1 | IncX3 | ~50 | Type III | 1 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, SXT, CIP | *floR* |
| GHZ8R28B | pork | SM18 | 2018/10/20 | ST1040 | NDM-1 | IncX3 | ~50 | Type III | 4 | AMP, CAZ, CTX, FOX, NEO, SXT, DOX | *floR* |
| HZ6P004 | pork | FM23 | 2016/7/20 | ST1 | NDM-5 | IncX3 | 47.8 | Type V | 4 | AMP, CAZ, CTX, FOX, GEN, NEO, DOX, FFC, CL, SXT, CIP | *mcr-1*, *floR*, |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Enterobacter aerogenes* | | | | | | | | | | | |
| HZ6P014 | pork | FM29 | 2016/7/20 | ND | NDM-1 | IncX3 | ~50 | Type III | 32 | AMP, CAZ, CTX, FOX, DOX, FFC, SXT | *floR* |
| CS26P | pork | SM13 | 2018/10/26 | ND | NDM-1 | IncX3 | ~50 | Type III | 4 | AMP, CAZ, CTX, FOX, DOX, FFC, CL, SXT | *floR* |
| *Proteus mirabilis* | | | | | | | | | | | |
| GTH8R04Y1 | Pork | SM14 | 2018/9/21 | ND | NDM-1 | chromosome | NA | ND | 16 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, CL, CIP | *floR* |
| CS27Y | chicken | SM13 | 2018/10/26 | ND | NDM-1 | ND | ~140 | ND | 16 | AMP, CAZ, CTX, FOX, DOX, FFC, CL, | *mcr-1*, *floR* |
| CS28P | chicken | SM13 | 2018/10/26 | ND | NDM-1 | ND | ~130, ~190 | ND | 16 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, CL | *floR* |
| GTH8R18Y2 | chicken | SM14 | 2018/9/21 | ND | NDM-1 | ND | ND | ND | 16 | AMP, CAZ, CTX, FOX, NEO, FFC, DOX, CL, FOS, CIP | *floR*, *fosA3* |

Abbreviations: FM, farmers market; SM, supermarket; AMP, ampicillin; CAZ, ceftazidine; CTX, cefotaxime; FOX, cefoxitin; AMI, amikacin; GEN, gentamycin; NEO, neomycin; DOX, doxycycline; FFC, florfenicol; CL, Colistin; IMP, imipenem; FOS, fosfomycin; SXT, sulfamethoxazole/trimethoprim; CIP, ciprofloxacin; TGC, tigecycline; ND, not determined; NA: not applicable.

**Table S3.** Primers used for determining genetic environment of *bla*$_{NDM}$

| Primer name | Primer sequence (5′-3′) | Target (bp) | Reference |
|---|---|---|---|
| umuD-F | F: ATGCGATTGCGACTACAC | 1460 | This study |
| tat-R | R: TGGTACTTCACGGTCAGG | | |
| bleo-F | F: TGGGTCGAGGTCAGGATAGG | 1070 | [7] |
| ISAba125-R | R: GCTTTTGAAACTGTCGCACCT | | |
| NDM-F | F: GGTTGATCTCCTGCTTGAT | Variable | This study |
| IS5-R | R: GCGATTGATGGTCTTGAAC | | |
| IS5-F | F: TGAGTCAGCCGAGAAGAA | Variable | This study |
| IS3000-R | R: CCAAGGAGATACCAAGAGAAT | | |
| Tn2-F | F: AGTGCTGGTCCGTTCATT | Variable | This study |
| HP-R | R: GCTGGTTATCTGTGCTCTG | | |
| NDM-F | F:GCGTAGTGCTCAGTGTCG | Variable | This study |
| HP-R | R:CGTCCTTATGTTGTTGGGT | | |

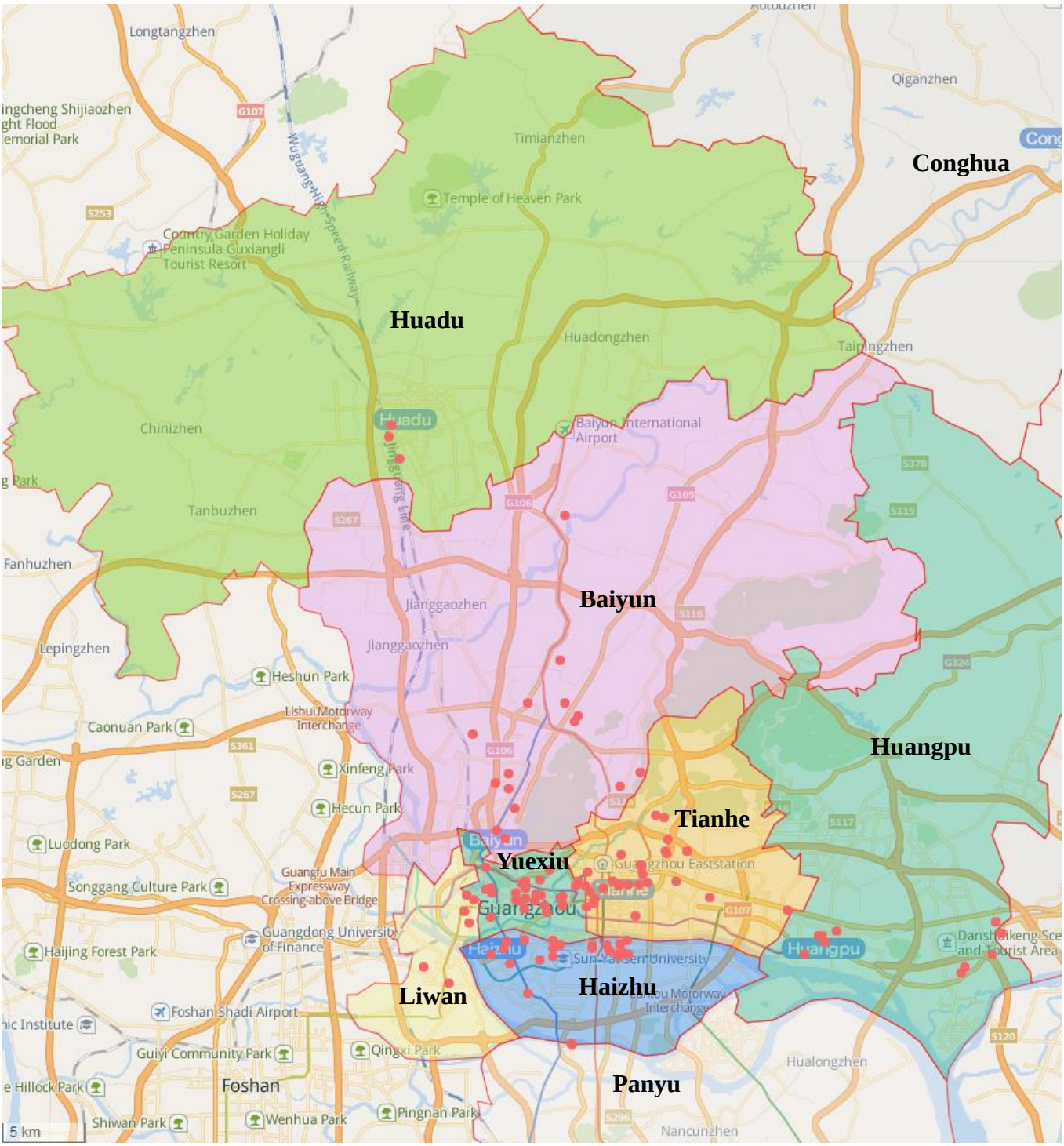



**Figure S1.** Distribution of sampling sites.

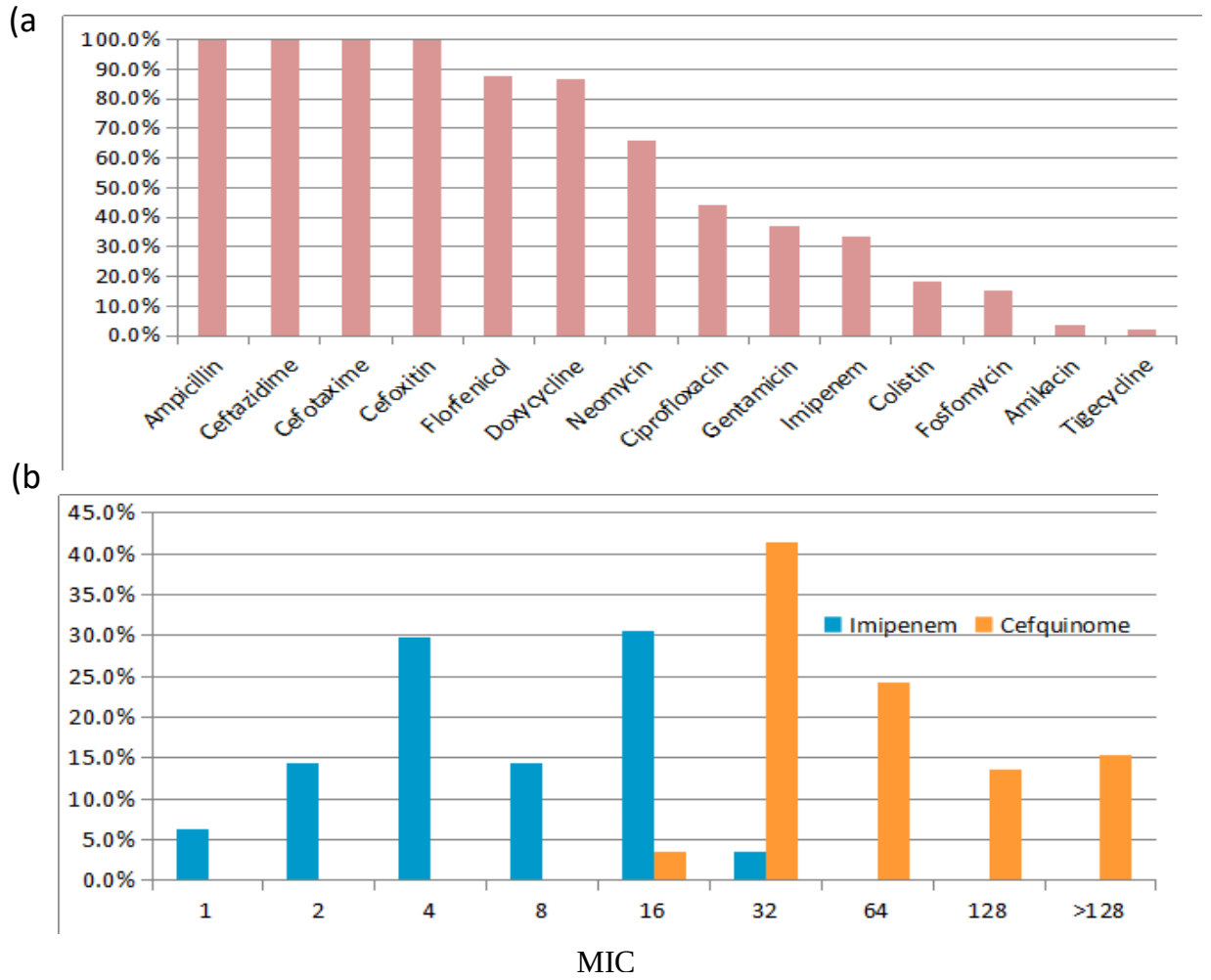
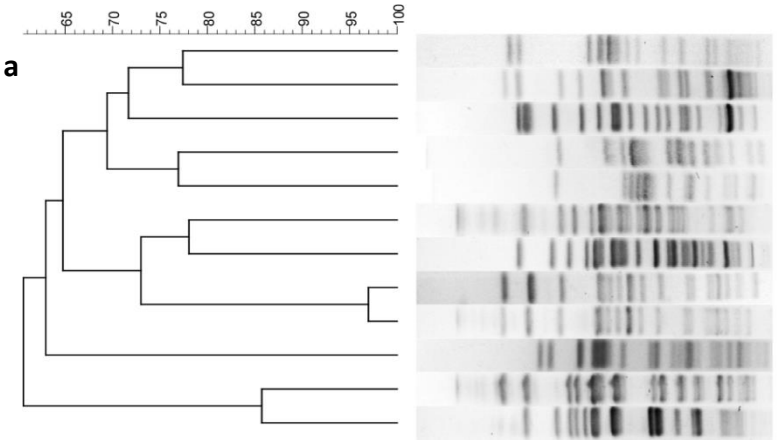



**Figure S2.** Antimicrobial susceptibility of NDM-producing *Enterobacteriaceae* isolated from retail meat samples. (a) Antimicrobial resistance of NDM-producing *Enterobacteriaceae* isolates. (b) Imipenem and cefquinome MIC distribution among NDM-producing *Enterobacteriaceae* isolates.

PFGE Method:

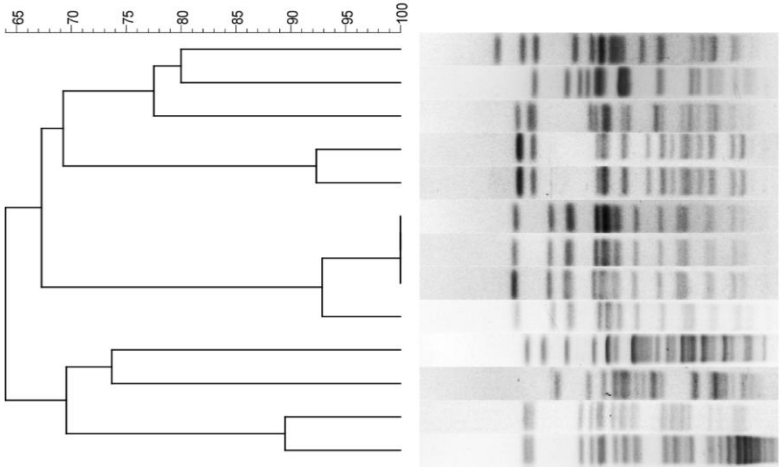
Pulsed-field gel electrophoresis (PFGE) typing was performed by an XbaI macrorestriction analysis according to the PulseNet (http://www.pulsenetinternational.org/protocols/) using Bio-Rad CHEF Mapper® System (Bio-Rad Laboratories, Hercules, CA, USA). PFGE patterns were analyzed using BioNumerics v.7.1 (Applied Maths, Sint-Martens-Latem, Belgium) and interpreted accordingly (8).

a

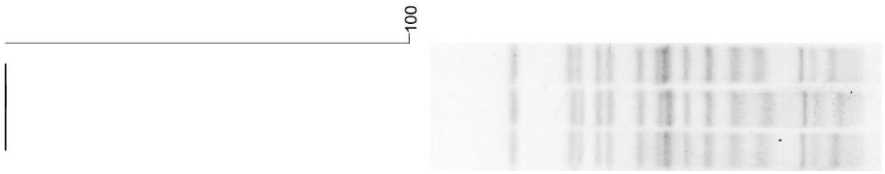



| Isolat | Marke | Sample | MLS | Gene | Date of Isolatio |
|---|---|---|---|---|---|
| GHZ8R13B | SM8 | pork | ST10 | NDM-5 | 2018-10-20 |
| GTH8R25B2 | SM15 | Chicken | ST10 | NDM-5 | 2018-09-21 |
| GHZ8R35P | SM9 | pork | ST10 | NDM-5 | 2018-10-20 |
| LW3 | SM4 | Chicken | ST10 | NDM-5 | 2017-10-03 |
| PY7P49 | FM17 | pork | ST10 | NDM-5 | 2017-09-24 |
| GTH8R06P | FM15 | pork | ST10 | NDM-5 | 2018-09-21 |
| GYX8R02P2 | FM6 | pork | ST10 | NDM-5 | 2018-10-13 |
| GTH8R01R | FM27 | pork | ST10 | NDM-5 | 2018-09-21 |
| GTH8R39P | FM37 | pork | ST10 | NDM-5 | 2018-09-21 |
| LW2 | SM4 | Chicken | ST10 | NDM-5 | 2017-10-03 |
| GHZ8R64P | SM11 | pork | ST10 | NDM-5 | 2018-10-20 |
| GYX8R09P | FM19 | pork | ST10 | NDM-5 | 2018-10-13 |

b




| Isolat | Marke | Sample | MLS | Gene | Date of Isolatio |
|---|---|---|---|---|---|
| HP6P12 | FM10 | pork | ST48 | NDM-5 | 2016-07-10 |
| TH7P22 | FM27 | pork | ST48 | NDM-5 | 2017-09-23 |
| HZ6P18 | FM11 | pork | ST48 | NDM-5 | 2016-07-20 |
| YX6P67 | FM22 | pork | ST48 | NDM-5 | 2016-10-15 |
| YX6P92 | FM7 | pork | ST48 | NDM-5 | 2016-11-19 |
| HZ6B07 | FM23 | beef | ST48 | NDM-5 | 2016-11-11 |
| YX6C04 | FM19 | Chicken | ST48 | NDM-5 | 2016-07-08 |
| YX6P58 | FM22 | pork | ST48 | NDM-5 | 2016-10-15 |
| YX6P44 | FM14 | pork | ST48 | NDM-5 | 2016-10-15 |
| GHZ8R09P | FM33 | Chicken | ST48 | NDM-5 | 2018-10-20 |
| YX6P69 | FM12 | pork | ST48 | NDM-5 | 2016-11-19 |
| GTH8R18R1 | SM14 | Chicken | ST48 | NDM-5 | 2018-09-21 |
| GTH8R18R3 | SM14 | Chicken | ST48 | NDM-1 | 2018-09-21 |




| Isolat | Marke | Sampl e | MLS | Gen e | Date of Isolatio |
|---|---|---|---|---|---|
| HZ6B05 | FM23 | beef | ST1 | NDM-5 | 2016-11-11 |
| HZ6P04 | FM23 | pork | ST1 | NDM-5 | 2016-07-20 |
| HZ6P05 | FM23 | pork | ST1 | NDM-5 | 2016-07-20 |

**Figure S3.** PFGE analysis of NDM-producing *Enterobacteriaceae* isolates. (a) *E. coli* ST10 strains. (b) *E. coli* ST48 strains. (c) *K. pneumoniae* ST1 strains.

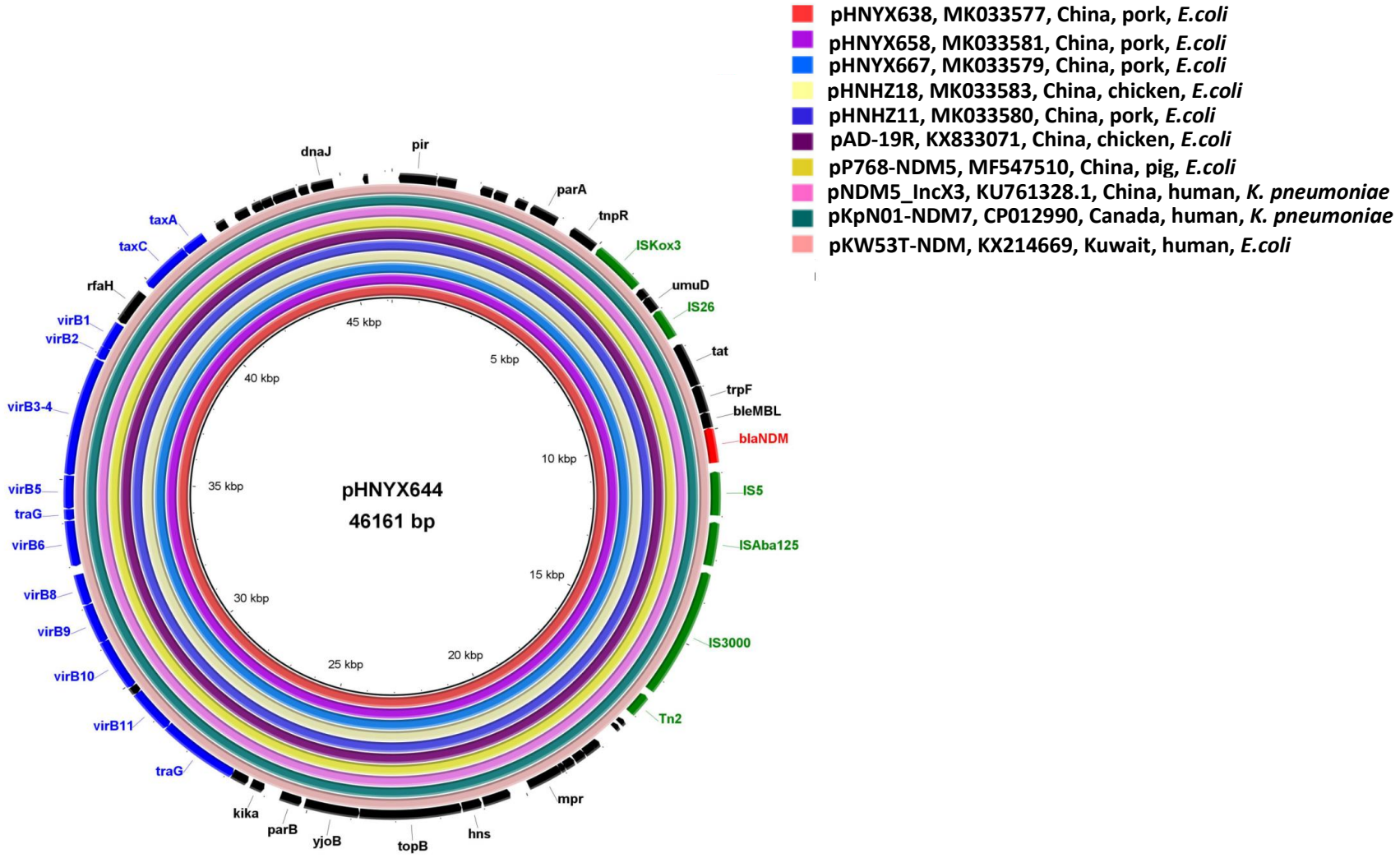



**Figure S4.** The sequence comparison of IncX3 plasmids carrying *bla*$_{NDM}$ of different sources.

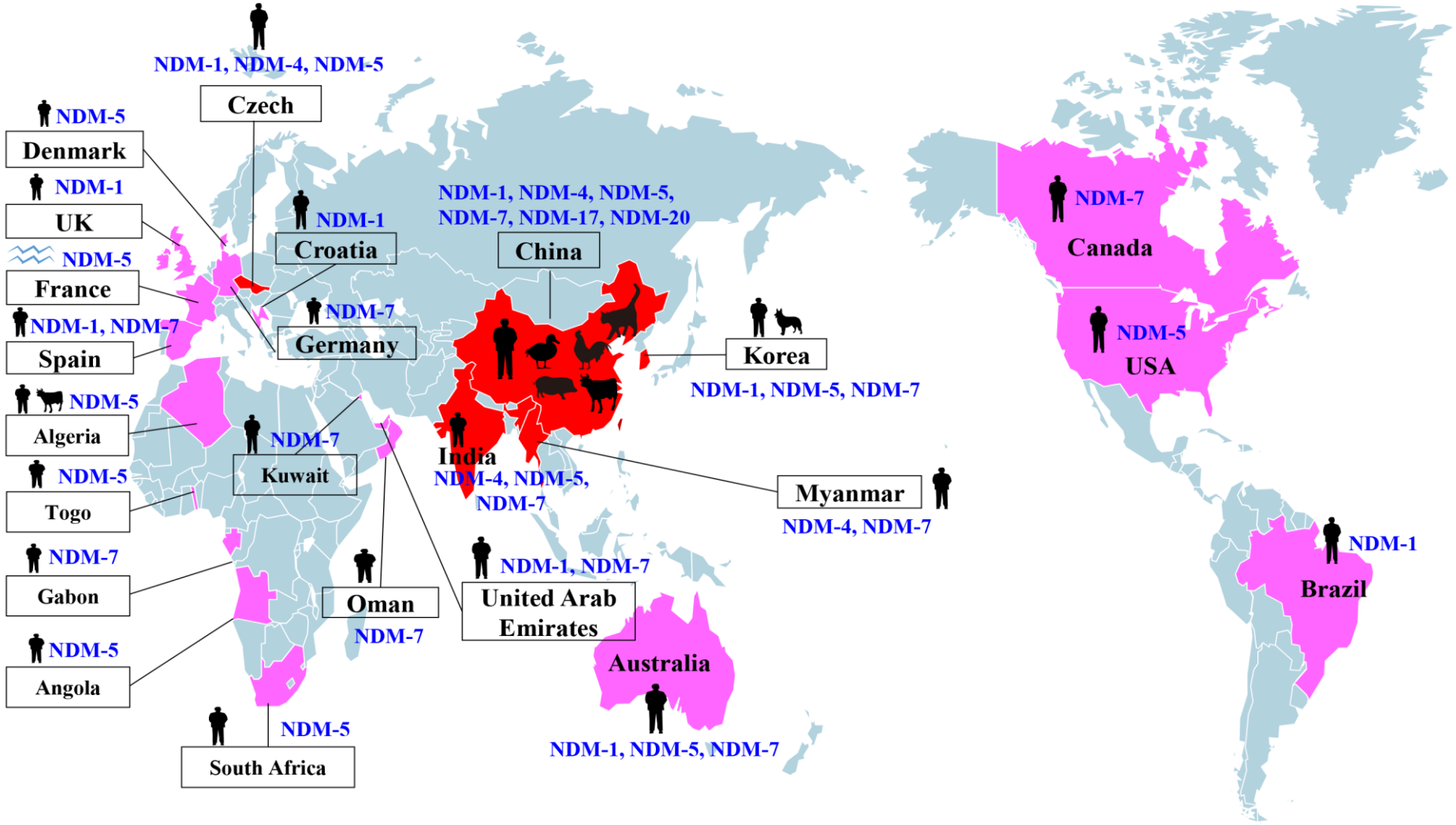



**Figure S5**. Global distribution of *bla*$_{NDM}$-carrying IncX3 plasmid in *Enterobacteriaceae*.

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