

**Table S1:** PCR primer sequences.

| Gene            | Primer sequence (5' to 3')  | Gene target             | Product size (bp) | Reference                 |
|-----------------|---|-------------------------|-------------------|---------------------------|
| <i>ehlyA-F</i>  | (F) GCATCATCAAGCGTACGTTCC<br>(R) AATGAGCCAAGCTGGTTAAGCT           | <i>hlyA</i>             | 534               | (Paton and Paton, 1998)   |
| <i>eaeA</i>     | (F) GACCCGGCACAAGCATAAGC<br>(R) CCACCTGCAGCAACAAGAGG              | <i>eaeA</i>             | 384               |                           |
| <i>stx1</i>     | (F) ATAAATCGCCATTTCGTTGACTAC<br>(R) AGAACGCCCACTGAGATCATC         | <i>stx1</i>             | 180               |                           |
| <i>stx2</i>     | (F) GGCCTGTCTGAACTGCTCC<br>(R) TCGCCAGTTATCTGACATTCTG             | <i>stx2</i>             | 255               |                           |
| <i>stx2a</i>    | (F) AGATATCGACCCCTCTTGAA<br>(R) GTCAACCTTCACTGTAAATG              | <i>Stx2a</i>            | 969               | (He et al., 2012)         |
| <i>uidA</i>     | (F) CTGGTATCAGCGCGAAGTCT<br>(R) AGCGGGTAGATATCACACTC              | <i>uidA</i>             | 600               | (Anbazhagan et al., 2010) |
| <i>rfbO157</i>  | (F) CGGACATCCATGTGATATGG<br>(R) TTGCCTATGTACAGCTAATCC             | <i>rfbO157</i>          | 259               | (Morin et al., 2004)      |
| Streptomycin    | (F) TATCCAGCTAAGCGCGAACT<br>(R) ATTTGCCGACTACCTTGCTC              | <i>aadA1</i>            | 447               | (Momtaz et al., 2012)     |
| Chloramphenicol | (F) AGTTGCTCAATGTACCTATAACC<br>(R) TTGTAATTCATTAAGCATTCTGCC       | <i>catA1</i>            | 547               | (Van et al., 2008)        |
| Tetracycline A  | (F) GGTTCACTCGAACGACGTCA<br>(R) CTGTCCGACAAGTTGCATGA              | <i>tetA</i>             | 577               | (Randall et al., 2004)    |
| Tetracycline B  | (F) CCTCAGCTTCTCAACGCGTG<br>(R) GCACCTTGCTGATGACTCTT              | <i>tetB</i>             | 634               |                           |
| Beta-lactams    | (F) ATGAGTATTCAACATTTCCGTGTC<br>(R) TTACCAATGCTTAATCAGTGAGG       | <i>blaTEM-1</i>         | 861               | (Haidinger et al., 2003)  |
| Biofilm-related | (F) ACTCTGACTTGACTATTACC<br>(R) AGATGCAGTCTGGTCAAC                | <i>csgA</i>             | 200               | (Knobl et al., 2012)      |
| Biofilm-related | (F) TTTCGATTGTCTGGCTGTATG<br>(R) CTTCAGATTCAGCGTCGTC              | <i>crl</i>              | 250               |                           |
| Biofilm-related | (F) TTATCGCCTGAGGTTATCGTTTGC<br>(R) TCTTCAGGCTCTATTATTCTTCTGGATAT | <i>csgD</i>             | 501               | (Ogasawara et al., 2010)  |
| Biofilm-related | (F) TATCGCCTGGATTACTGGCAAC<br>(R) TAGGACGCTGACGTGTCTTATC          | <i>rpoS</i>             | 1900              | (Olsen et al., 1993)      |
| Biofilm-related | (F) TGCAGAACGGATAAGCCGTGG<br>(R) GCAGTCACCTGCCCTCCGA              | <i>fimH</i>             | 506               | (Johnson and Stell, 2000) |
| Biofilm-related | (F) CCGGCGGGCAATGGGTACA<br>(R) CAGCTCTCACAACTTGCGAC               | <i>flu</i>              | 385               | (Restieri et al., 2007)   |
| Biofilm-related | (F) ATATCGGCTAAAGTGGAAACAGGTCC<br>(R) TGCTTCCTGGCATTAACTTCACC     | <i>ehaA<sup>a</sup></i> | 627               | (Friedrich et al., 2002)  |
| Biofilm-related | (F) AGTGCATGACTACTGATTGTGCTG<br>(R) CACATTAACAACCCGCTCTGG         | <i>ehaA<sup>b</sup></i> | 887               |                           |

**Table S2:** Reference values used to classify isolates as susceptible, intermediate resistant and resistant.

| <b>Antimicrobial agent</b>    | <b>Disk content</b> | <b>S</b> | <b>I</b> | <b>R</b> |
|-------------------------------|---------------------|----------|----------|----------|
| Ampicillin                    | 10 µg               | ≥ 17     | 14-16    | ≤ 13     |
| Amoxicillin-clavulanate       | 20/10 µg            | ≥ 18     | 14-17    | ≤ 13     |
| Ampicillin-sulbactam          | 10/10 µg            | ≥ 15     | 12-14    | ≤ 11     |
| Cefepime                      | 30 µg               | ≥ 25     | 19-24    | ≤ 18     |
| Cefotaxime                    | 30 µg               | ≥ 26     | 23-25    | ≤ 22     |
| Cefoxitin                     | 30 µg               | ≥ 18     | 15-17    | ≤ 14     |
| Ceftazidime                   | 30 µg               | ≥ 21     | 18-20    | ≤ 17     |
| Aztreonam                     | 30 µg               | ≥ 21     | 18-20    | ≤ 17     |
| Imipenem                      | 10 µg               | ≥ 23     | 20-22    | ≤ 19     |
| Meropenem                     | 10 µg               | ≥ 23     | 20-22    | ≤ 19     |
| Gentamicin                    | 10 µg               | ≥ 15     | 13-14    | ≤ 12     |
| Streptomycin                  | 10 µg               | ≥ 15     | 12-14    | ≤ 11     |
| Tetracycline                  | 30 µg               | ≥ 15     | 12-14    | ≤ 11     |
| Nalidixic acid                | 30 µg               | ≥ 19     | 14-18    | ≤ 16     |
| Norfloxacin                   | 10 µg               | ≥ 17     | 13-16    | ≤ 12     |
| Trimethoprim-sulfamethoxazole | 1.25/23.75µg        | ≥ 16     | 11-15    | ≤ 10     |
| Chloramphenicol               | 30 µg               | ≥ 18     | 13-17    | ≤ 12     |
| Colistin                      | 10 µg               | ≥ 17     | 13-17    | ≤ 12     |

S= Susceptible, I= Intermediate and R= Resistance.

**Table S3:** Non-O157 *E. coli* isolates sequenced in this study.

| <b>Isolate ID</b> | <b>Serogroup</b> | <b>Number of contigs</b> | <b>Total length (bp)</b> | <b>GC (%)</b> | <b>N50</b> |
|-------------------|------------------|--------------------------|--------------------------|---------------|------------|
| 3                 | O99:H9           | 116                      | 4686813                  | 50.79         | 222406     |
| 11                | O156:H25         | 299                      | 5181977                  | 50.43         | 94802      |
| 12                | O108:H2          | 103                      | 4881051                  | 50.72         | 186185     |
| 14                | O136:H30         | 128                      | 4564407                  | 50.92         | 105160     |
| 15                | O99:H9           | 103                      | 4686475                  | 50.78         | 260468     |
| 22                | wzx-Onovel24:H20 | 94                       | 4964550                  | 50.53         | 478048     |
| 25                | O140:H21         | 247                      | 5507075                  | 50.47         | 148987     |
| 30                | O102:H4          | 376                      | 5244869                  | 50.65         | 87095      |
| 32                | O129:H23         | 203                      | 5501418                  | 50.53         | 240397     |
| 37                | O17:H18          | 139                      | 5169910                  | 50.45         | 186852     |
| 38                | O76:H34          | 219                      | 4812816                  | 50.88         | 114298     |
| 42                | O26:H11          | 494                      | 5526211                  | 50.4          | 101076     |
| 50                | O129:H23         | 204                      | 5502410                  | 50.52         | 211833     |
| 56                | O154:H10         | 144                      | 4706567                  | 50.66         | 96083      |
| 60                | O116:H21         | 195                      | 5081941                  | 50.7          | 177288     |
| 64                | wzx-Onovel5:H19  | 137                      | 5056230                  | 50.74         | 161129     |
| 65                | wzx-Onovel5:H19  | 135                      | 5058237                  | 50.74         | 236278     |
| 67                | O87:H7           | 127                      | 4764651                  | 50.63         | 195836     |
| 68                | O129:H21         | 171                      | 5105006                  | 50.67         | 156897     |
| 69                | O26:H11          | 478                      | 5562801                  | 50.4          | 112464     |
| 72                | O26:H11          | 107                      | 4610054                  | 50.96         | 161578     |
| 76                | O163:H19         | 303                      | 5171039                  | 50.57         | 117460     |
| 77                | O40:H19          | 156                      | 4930994                  | 50.7          | 151142     |
| 80                | O22:H21          | 87                       | 4795733                  | 50.72         | 185546     |

**Table S4:** Annotation of virulence factors for non-O157 *E. coli* isolates.

| Isolate ID | Serogroup            | Virulence factor related genes |             |             |              |             |             |             |              |             |             |             |             |             |             |             |             |            |             |             |             |
|------------|----------------------|--------------------------------|-------------|-------------|--------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|
|            |                      | <i>ehaA</i>                    | <i>ehaB</i> | <i>epeA</i> | <i>agn43</i> | <i>espP</i> | <i>hlyA</i> | <i>subA</i> | <i>east1</i> | <i>cdtA</i> | <i>espA</i> | <i>chuA</i> | <i>fimH</i> | <i>aslA</i> | <i>ibeB</i> | <i>ompA</i> | <i>toxB</i> | <i>paa</i> | <i>ecpA</i> | <i>csgA</i> | <i>eaeA</i> |
| 3          | O99:H9               | -                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | -           | +           | +           | +           | -           | -           | -          | +           | +           | -           |
| 11         | O156:H25             | +                              | +           | -           | +            | +           | +           | -           | +            | -           | +           | -           | +           | -           | +           | -           | -           | +          | +           | +           | +           |
| 12         | O108:H2              | +                              | +           | -           | +            | -           | -           | -           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 14         | O136:H30             | -                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | -           | +           | -           |
| 15         | O99:H9               | -                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | -           | +           | +           | +           | -           | -           | -          | +           | +           | -           |
| 22         | wzx-<br>Onovel24:H20 | -                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | +           | +           | +           | +           | -           | -           | -          | +           | +           | -           |
| 25         | O140:H21             | +                              | -           | -           | -            | -           | -           | -           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 30         | O102:H4              | -                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | .           | +           | -           |
| 32         | O129:H23             | -                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | +           | +           | +           | +           | -           | -           | -          | +           | +           | -           |
| 37         | O17:H18              | -                              | +           | -           | +            | +           | +           | +           | -            | -           | -           | +           | +           | +           | +           | +           | -           | -          | +           | +           | -           |
| 38         | O76:H34              | -                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | -           | +           | +           | +           | -           | -           | -          | +           | +           | -           |
| 42         | O26:H11              | +                              | +           | -           | +            | +           | +           | -           | +            | -           | +           | -           | +           | -           | +           | -           | +           | +          | +           | +           | +           |
| 50         | O129:H23             | -                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | +           | +           | +           | +           | -           | -           | -          | +           | +           | -           |
| 56         | O154:H10             | -                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 60         | O116:H21             | +                              | +           | +           | -            | +           | +           | +           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 64         | wzx-<br>Onovel5:H19  | -                              | +           | +           | +            | +           | +           | +           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 65         | wzx-<br>Onovel5:H19  | -                              | +           | +           | +            | +           | +           | +           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 67         | O87:H7               | +                              | +           | -           | -            | -           | -           | -           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 68         | O129:H21             | +                              | +           | +           | -            | +           | +           | +           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 69         | O26:H11              | +                              | +           | -           | +            | +           | +           | -           | +            | -           | +           | -           | +           | -           | +           | +           | +           | +          | +           | +           | +           |
| 72         | O26:H11              | -                              | +           | -           | -            | -           | -           | -           | -            | -           | +           | -           | +           | +           | +           | -           | -           | -          | +           | +           | -           |
| 76         | O163:H19             | +                              | +           | +           | -            | -           | -           | -           | -            | +           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 77         | O40:H19              | +                              | +           | -           | -            | +           | +           | +           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |
| 80         | O22:H21              | +                              | +           | -           | -            | +           | -           | -           | -            | -           | -           | -           | +           | -           | +           | -           | -           | -          | +           | +           | -           |

+ = gene present, - = gene absent

Autotransporter protein genes= (*ehaA*, *ehaB*, *epeA* and *agn43*), serine protease gene= (*espP*), toxins (*hlyA*, *subA*, *east1* and *cdtA*), type III translocated gene (*espA*), iron uptake gene (*chuA*), invasins genes (*fimH*, *aslA*, *ibeB* and *ompA*) and adhesins genes= (*toxB*, *eaeA*, *ecpA*, *paa* and *csgA*).

**Table S5:** Annotation results of antimicrobial resistance for non-O157 *E. coli*.

| Isolate ID | Serogroup        | Antimicrobial related genes |                |              |              |              |             |             |               |               |               |              |               |             |             |            |             |
|------------|------------------|-----------------------------|----------------|--------------|--------------|--------------|-------------|-------------|---------------|---------------|---------------|--------------|---------------|-------------|-------------|------------|-------------|
|            |                  | <i>TEM-105</i>              | <i>TEM-150</i> | <i>AadA1</i> | <i>aadA2</i> | <i>aadA5</i> | <i>sul2</i> | <i>sul3</i> | <i>tet(A)</i> | <i>tet(C)</i> | <i>tet(D)</i> | <i>cmlA6</i> | <i>dfrA12</i> | <i>linG</i> | <i>floR</i> | <i>ugd</i> | <i>vgaC</i> |
| 3          | O99:H9           | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 11         | O156:H25         | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 12         | O108:H2          | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 14         | O136:H30         | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 15         | O99:H9           | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 22         | wzx-Onovel24:H20 | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 25         | O140:H21         | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 30         | O102:H4          | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | +           |
| 32         | O129:H23         | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 37         | O17:H18          | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 38         | O76:H34          | -                           | +              | -            | -            | -            | +           | -           | -             | +             | -             | -            | -             | -           | +           | +          | +           |
| 42         | O26:H11          | -                           | -              | -            | -            | -            | +           | -           | +             | -             | +             | -            | -             | -           | -           | +          | +           |
| 50         | O129:H23         | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 56         | O154:H10         | +                           | -              | +            | +            | -            | -           | +           | +             | -             | +             | +            | +             | +           | -           | +          | -           |
| 60         | O116:H21         | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | -          | -           |
| 64         | wzx-Onovel5:H19  | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | -          | -           |
| 65         | wzx-Onovel5:H19  | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | -          | -           |
| 67         | O87:H7           | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | -          | -           |
| 68         | O129:H21         | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | -          | -           |
| 69         | O26:H11          | -                           | -              | -            | -            | -            | +           | -           | +             | -             | +             | -            | -             | -           | -           | +          | +           |
| 72         | O26:H11          | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 76         | O163:H19         | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 77         | O40:H19          | -                           | -              | -            | -            | -            | -           | -           | -             | -             | -             | -            | -             | -           | -           | +          | -           |
| 80         | O22:H21          | -                           | -              | -            | -            | +            | +           | -           | -             | +             | -             | -            | -             | -           | -           | +          | -           |

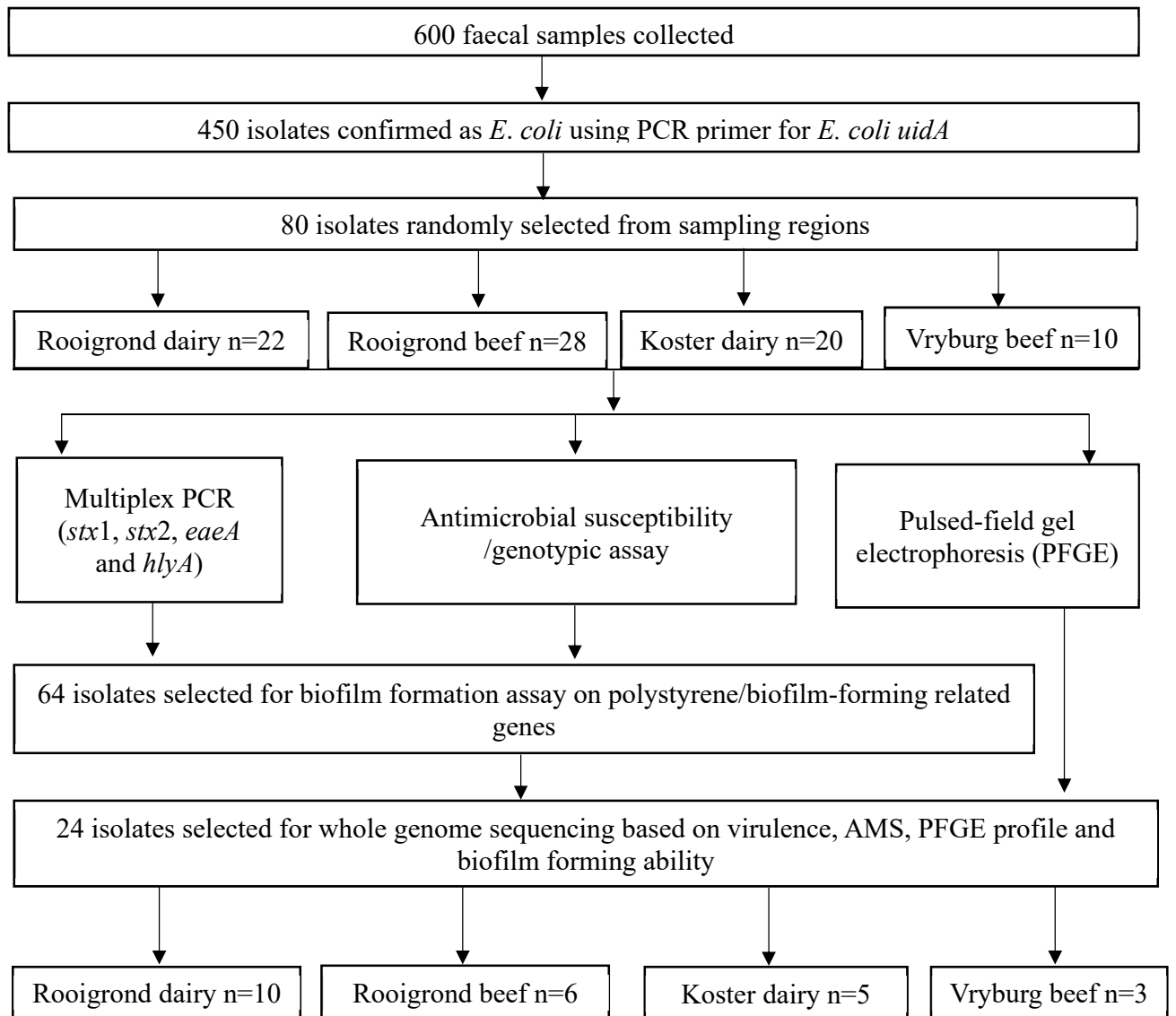
+ = gene present, - = gene absent

Beta-lactams (*TEM-105* and *TEM-150*), streptomycin (*aadA1*, *aadA2* *aadA5*), sulfonamide (*sul2* and *sul3*), tetracycline (*tetACD*), phenicol (*cmlA6* and *floR*), diaminopyrimidine (*dfrA12*), lincosamides (*linG*), polymyxin (*ugd*) and streptogramin (*vgaC*).

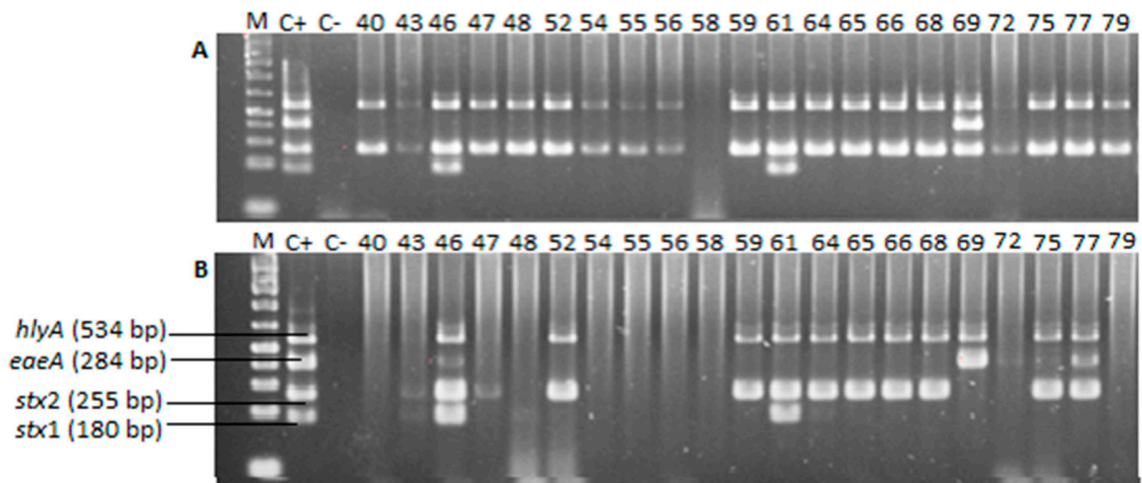
**Table S6:** Annotated results of plasmids search for non-O157 *E. coli*.

| Isolate ID | Serogroup        | Plasmids types |           |          |              |              |              |          |                    |                  |               |                          |          |               |               |        |        |
|------------|------------------|----------------|-----------|----------|--------------|--------------|--------------|----------|--------------------|------------------|---------------|--------------------------|----------|---------------|---------------|--------|--------|
|            |                  | ColI56_1       | ColRNAI_1 | ColpVC_1 | IncB/O/K/Z_2 | IncB/O/K/Z_3 | IncB/O/K/Z_4 | IncFIA_1 | IncFIB(AP001918)_1 | IncFIB(K)_1_Kpn3 | IncFIC(FII)_1 | IncFII(pHN7A8)_1_pH N7A8 | IncHI2_1 | IncI1_1_Alpha | IncI2_1_Delta | IncR_1 | IncY_1 |
| 3          | O99:H9           | -              | -         | +        | -            | -            | -            | -        | -                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 11         | O156:H25         | +              | -         | -        | -            | -            | -            | -        | +                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 12         | O108:H2          | -              | -         | -        | -            | -            | -            | -        | -                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 14         | O136:H30         | -              | +         | -        | -            | -            | -            | -        | -                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 15         | O99:H9           | -              | -         | +        | -            | -            | -            | -        | -                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 22         | wzx-Onovel24:H20 | -              | .         | -        | -            | -            | -            | +        | +                  | -                | +             | -                        | -        | -             | +             | -      | -      |
| 25         | O140:H21         | -              | -         | -        | -            | -            | -            | +        | +                  | -                | +             | -                        | -        | -             | -             | -      | -      |
| 30         | O102:H4          | -              | -         | -        | -            | -            | -            | -        | +                  | -                | +             | -                        | -        | +             | -             | -      | -      |
| 32         | O129:H23         | -              | +         | -        | -            | -            | -            | -        | +                  | -                | -             | -                        | -        | +             | -             | -      | -      |
| 37         | O17:H18          | -              | -         | -        | -            | -            | -            | -        | +                  | -                | +             | -                        | -        | -             | -             | -      | -      |
| 38         | O76:H34          | -              | +         | -        | -            | -            | -            | -        | -                  | +                | -             | -                        | +        | -             | -             | +      | -      |
| 42         | O26:H11          | -              | +         | -        | -            | +            | -            | -        | +                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 50         | O129:H23         | -              | +         | -        | -            | -            | -            | -        | +                  | -                | -             | -                        | -        | +             | -             | -      | -      |
| 56         | O154:H10         | -              | -         | -        | -            | -            | -            | -        | -                  | -                | -             | -                        | -        | -             | -             | -      | +      |
| 60         | O116:H21         | -              | +         | -        | +            | -            | -            | -        | +                  | -                | -             | -                        | +        | -             | -             | -      | -      |
| 64         | wzx-Onovel5:H19  | -              | +         | -        | +            | -            | -            | -        | +                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 65         | wzx-Onovel5:H19  | -              | +         | -        | +            | -            | -            | -        | +                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 67         | O87:H7           | -              | -         | -        | -            | -            | -            | +        | +                  | -                | +             | -                        | -        | -             | -             | -      | -      |
| 68         | O129:H21         | -              | +         | -        | +            | -            | -            | -        | +                  | -                | -             | +                        | -        | -             | -             | -      | -      |
| 69         | O26:H11          | -              | +         | -        | -            | +            | -            | -        | +                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 72         | O26:H11          | -              | +         | -        | -            | -            | -            | -        | -                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 76         | O163:H19         | -              | -         | -        | -            | -            | +            | -        | -                  | -                | -             | -                        | -        | -             | -             | -      | -      |
| 77         | O40:H19          | -              | +         | -        | -            | -            | -            | +        | +                  | -                | +             | -                        | -        | -             | -             | -      | -      |
| 80         | O22:H21          | -              | -         | -        | -            | -            | -            | -        | -                  | -                | -             | -                        | -        | -             | -             | -      | +      |

+ = gene present, - = gene absent.



**Figure S1:** A flow chart illustrating bacterial characterization.



**Figure S2:** Multiplex gel image of amplicons indicating no detection of *stx2* (gel B). M indicates molecular marker 1kb plus, C+ the positive control, C- the negative control and isolate number (40-79).