Supplement 1. Primers used in this study.

| Group | Target gene | Primer  | Sequences (5’-3’) | TM (°C) | GC (%) | Amplicon (bp) | Reference |
|-------|-------------|---------|--------------------|---------|--------|---------------|-----------|
| 1     | adhE        | AAdh_F  | CAAGTCGATACTATTGTC  | 48.0    | 38     | 2,158        | In this study |
|       |             | AAdh_R  | TTTATGAGCAAGTGAGTG  | 49.9    | 38     |               |           |
|       |             | BeAT_F  | TACCTTTTCTTATATCGC  | 49.8    | 36     | 884          | In this study |
|       |             | BeAT_R  | TCTACTTTCTTTCGAA    | 49.9    | 36     |               |           |
|       |             | ArAT_F  | GTCATTATACTGGAATGG  | 47.7    | 38     |               |           |
|       |             | ArAT_R  | CAAGGTCTGACATCTTTT  | 49.0    | 38     | 750          | In this study |
|       |             | Est_F   | GGGATGAATCGAAAAAGTT | 48.8    | 38     | 617          | In this study |
|       |             | Est_R   | CCTAATTTTTTCAACTCGG | 48.0    | 36     |               |           |
| 2     | adh         | Adh_F   | TGGTTAAAGGAACTTCG   | 48.7    | 38     | 880          | In this study |
|       |             | Adh_R   | AATTGTTTTTACCC      | 48.3    | 36     |               |           |
|       | citP        | P4(S)   | GGAAGTTGTGCTGGTATTTG | 60.2   | 52     | 616          | Klijn et al. 1995 |
|       |             | P5(A)   | CCAAACCTGCTGTAATAGCAG | 59.7  | 52     |               |           |
| 3     | kdcA        | 3fw     | GTATACAGTGGACATTACC | 51.1    | 40     | 1,630        | Smit et al. 2005 |
|       |             | 1633Rev | GCTCAGAAATAATTTACC  | 51.7    | 40     |               |           |

*TM: Melting temperature, GC: guanine-cytosine content
Supplement 2. Agarose gel electrophoretic analysis of multiplex PCR with the group 1 (adhE, bcaT, araT, estA) (A), group 2 (adh, citP) (B), and group 3 (kdcA) (C). M: 100bp ladder, 1: IL1403, 2: CHN-11-1, 3: CHN-11-3, 4: CHN-11-48, 5: LDTM6802, 6: LDTM6803.