

**Table S4      Genes characteristic of mobile elements**

| Locus Tag       |                  |         | Product                                      | Orthology (% ID) |
|-----------------|------------------|---------|----------------------------------------------|------------------|
| 409-05 (a)      | 317 (b)          | 594 (c) |                                              | a-b / b-c / c-a  |
| n/a             | HMPREF0421_20010 | 1192    | Phage integrase/site specific recombinase    | - / 100 / -      |
| n/a             | HMPREF0421_20030 | 433     | IS3509a-family transposase                   | - / 100 / -      |
| HMPREF0424_0509 | n/a              | n/a     | IS150-family transposase                     | - / - / -        |
| HMPREF0424_0698 | HMPREF0421_20610 | n/a     | HK97-family phage prohead protease           | 76 / - / -       |
| HMPREF0424_0850 | HMPREF0421_20580 | 643     | GepA family prophage protein                 | 41 / 100 / 41    |
| HMPREF0424_0875 | n/a              | n/a     | Phage capsid protein                         | - / - / -        |
| HMPREF0424_0956 | n/a              | n/a     | Phage integrase/site specific recombinase    | - / - / -        |
| HMPREF0424_0994 | n/a              | n/a     | TP901-family phage tail tape measure protein | - / - / -        |
| n/a             | HMPREF0421_20612 | 1028    | Prophage ps3 protein                         | - / 100 / -      |
| n/a             | HMPREF0421_20580 | 643     | Phage-associated protein                     | - / 100 / -      |