

## **Description of Additional Supplementary Files:**

**Supplementary data 1:** Genes predicted on the phage-plasmid. Position on the phage-plasmid (Figure S4), translated protein sequences, transcripts per million (TPM) of RNA before or after the productive switch (Figure S6) are detailed. Genes homologous to the plasmid-related genes in the phage-plasmid in Denmark are marked with red (Figure 4). Genes homologous to the phage structural genes in the phage in the Arabian Sea are marked with yellow (Figure 4).