

**File name:** Supplementary Data 1

**Description:** Orthologue clusters conserved across all four E. coli genomes

**File name:** Supplementary Data 2

**Description:** Orthologue clusters conserved across all four Klebsiella pneumoniae species complex genomes

**File name:** Supplementary Data 3

**Description:** Orthologue clusters conserved across all four S. aureus genomes

**File name:** Supplementary Data 4

**Description:** Orthologue clusters conserved across all four S. pyogenes genomes

**File name:** Supplementary Data 5

**Description:** Orthologue clusters conserved across all 20 genomes

**File name:** Supplementary Data 6

**Description:** Non-redundant list of gene ontology terms associated with 125 conserved orthologue clusters

**File name:** Supplementary Data 7

**Description:** Differential expression analysis of transcriptomics data. This data can also be viewed as an interactive webpage [here](#).

**File name:** Supplementary Data 8

**Description:** Gene-set enrichment analysis using GO terms and KEGG metabolic pathways. This data can also be viewed as an interactive webpage [here](#).

**File name:** Supplementary Data 9

**Description:** Fold-change values for all features detected in proteomics data across all strains.

**File name:** Supplementary Data 10

**Description:** Fold-change values for all features detected in metabolomics data across all strains.

**File name:** Supplementary Data 11

**Description:** Demographic, assembly and genome characteristic information, and accession numbers for omic datasets for isolates investigated in this study

**File name:** Supplementary Data 12

**Description:** Percentage of the proteins accurately quantified for isolates investigated in this study