

Supplemental Figure 1. (A), Lipid A profiles from wild-type *Salmonella* (χ 3761) and mutants expressing native *F. tularensis lpxE* (χ 9437, χ 9701, 9703, and χ 9731), determined by ESI-MS analysis. Strains were grown in LB medium at 37°C. (B), ESI-MS analysis of lipid A purified from strains expressing codon-optimized *F. tularensis lpxE* (χ 11092, χ 9440, and χ 9732). Strains were grown in LB medium at 37°C. Color-coding and abbreviations are described in Fig. 1. For 1-dephospho-lipid A, peaks consistent with non-covalent acetate adducts are also detected.

Supplemental Figure 2. (A) LPS profiles of *S. Typhimurium* strains χ 9434, χ 9732, χ 9485, χ 9705 and χ 3761(wild-type). Bacteria were grown in LB medium at 37°C overnight and subcultured in fresh LB media to an OD₆₀₀ of 1.0. Cell pellets were collected, treated with proteinase K and run on an SDS-PAGE gel, followed by silver staining as described in the Materials and Methods section. (B) Regulation of PspA and LacI synthesis by arabinose. Western blots showing the synthesis of PspA in *S. Typhimurium* strains χ 9844, χ 9845, χ 9846, χ 9881 and χ 9241 containing pYA4088 and χ 9241 containing pYA3493 (empty vector). Bacteria were grown in LB medium with or without 0.1% arabinose overnight at 37°C. Equal numbers of cells from each culture were pelleted, suspended in loading buffer, and boiled. After centrifugation, equal volumes were subjected to SDS-PAGE in triplicate gels. Each gel was transferred to nitrocellulose and individually probed with a polyclonal antibody specific for PspA, LacI, or GroEL. GroEL was used as a standardization marker. Relevant portions of each blot are shown.

1
2

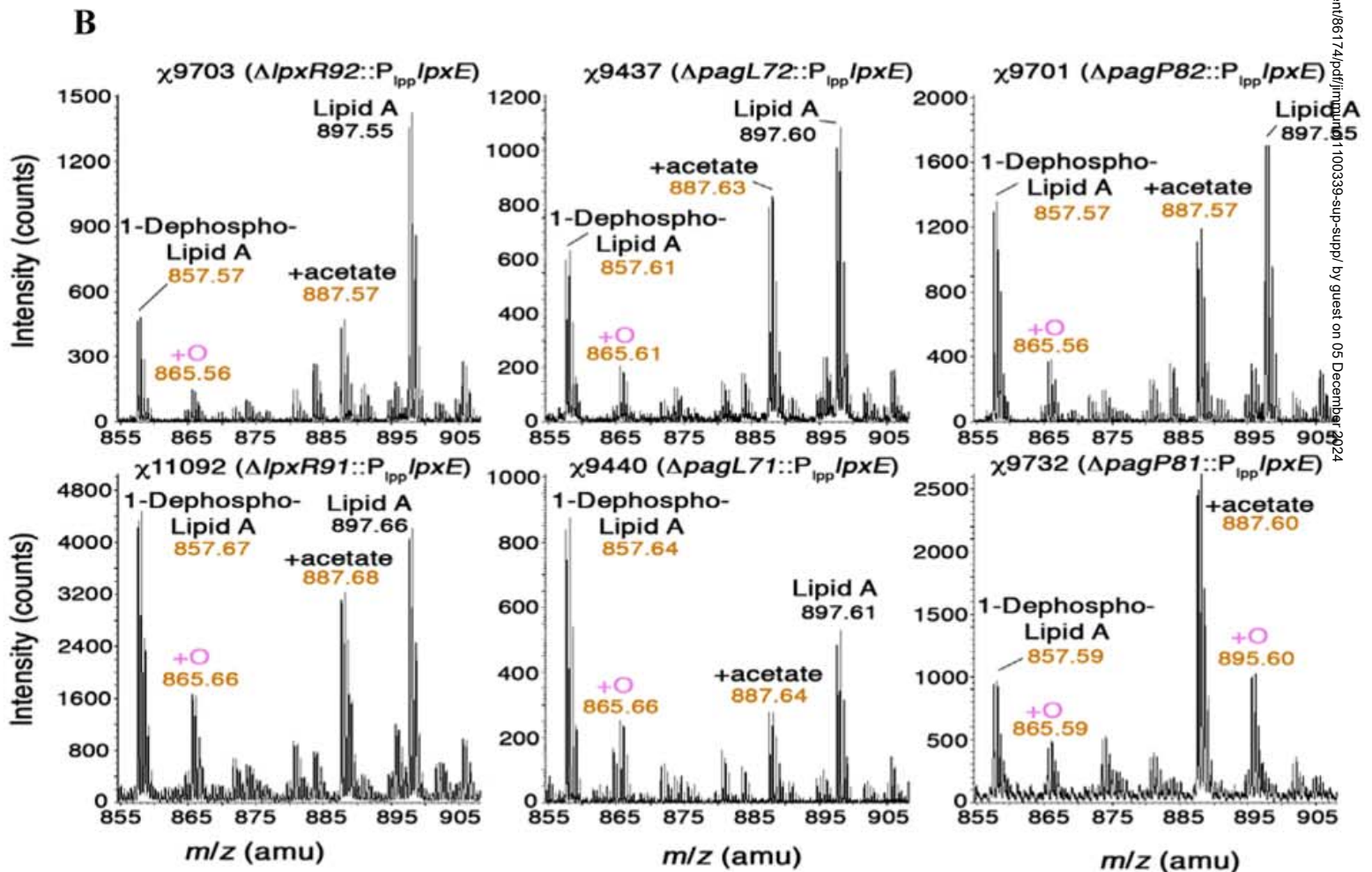
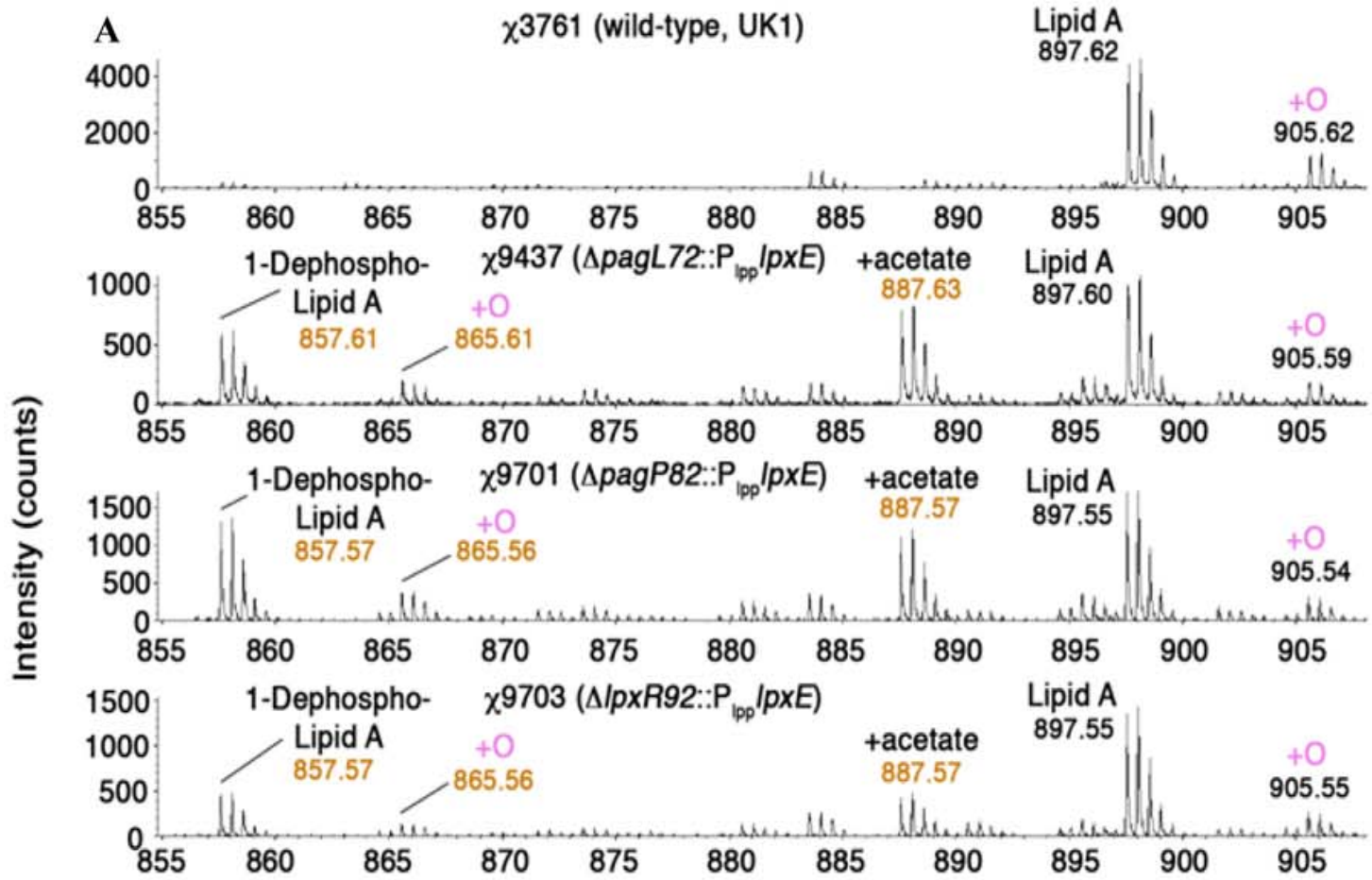
Supplemental table 1. Primers used in this work

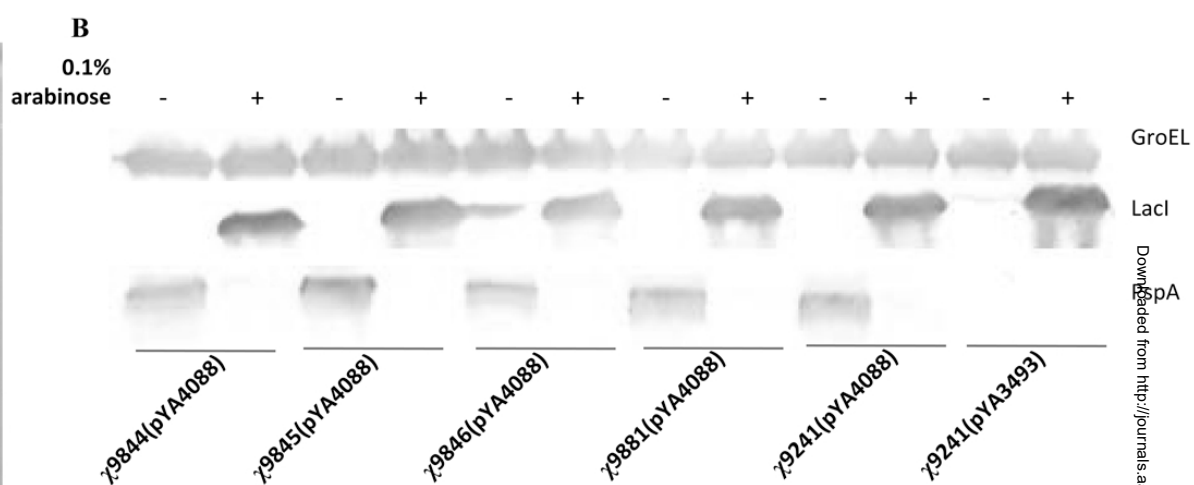
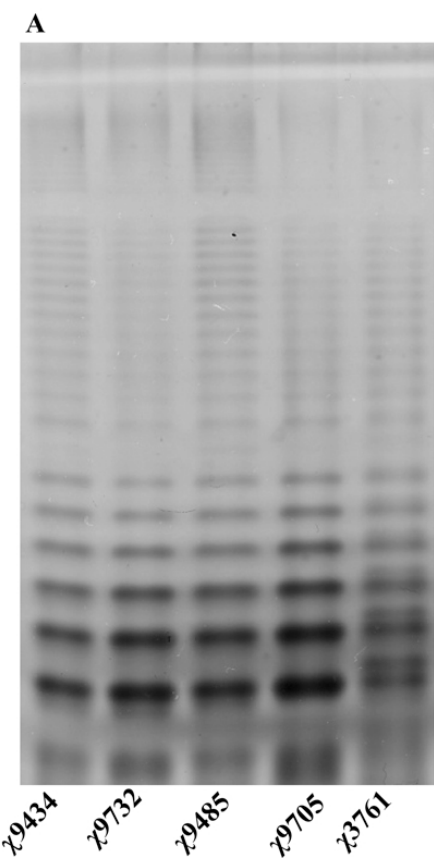
name	Primer Sequence (5'-3')
PagL-Del-1	G GGTACCAATGAAATACATCTGAGCAGAAC
PagL-Sbfl2	TTCAACCCTGCAGGCCATTTCAATGTCAATAGTTATTTTAAAC
PagL-Sbfl3	ATTGAAATGGCCTGCAGGGTTGAATAACAATTAGCGAGTTGC
PagL-Del-4	A CCCGGG CTGTGCAGTGGTCACAGTAAAGTC
PagP-1F	GTCTCC CCCGGG GGTTTCGCTGGCAGGTAATAC
PagP-1R	ATTCACAACCTGCAGGAACAACATTAACCTGAATAAAATC
PagP-2F	GTTAATGTTGTTCTGCAGGTTGTGAATAAAAAGTCTTAAAAAAC
PagP-2R	GGTGCGGTACC TAGGTTCGTTTGCCATGACGG
LpxR-1F	GTCTCC CCCGGG ACGGACTCTATATAAATGAAGC
LpxR-1R	GGGTAAAAA CCTGCAGG AATATTACATCTTATAGCC
LpxR-2F	TTCCTGCAGG TTTTACCCCTGAATATGAAAG
LpxR-2R	GGTGCGGTACC CGCTTAATAATACTACGGGC
Plpp-FSbfl	GAATCGCCTGCAGG GATAACCAGAAGCAATAAAAAATC
Plpp-R	TTTCAGCATTATTAATACCCTCTAGATT
LpxE-F1	GAATCG CCTGCAGGCTAAATAATCTCACGATTACGC
LpxE-RSbfl	5-GAATCGCCTGCAGG GTTACTAAATAATCTCTCTATTTCTCATCC
OptlpxE-F	AGGGTATTAATAATGCTGAAACAGACACTGCAAACA

OptIpxE-RsbfI GAATCGCCTGCAGGCTAAATAATCTCACGATTACGCA

3

4





Strain based on the wild-type	genotype	Strain name based on χ9241
χ9434	$\Delta pagP8$	χ9844
χ9732	$\Delta pagP81::P_{lpp} lpxE$	χ9845
χ9485	$\Delta pagL7 \Delta pagP8 \Delta lpxR9$	χ9846
χ9705	$\Delta pagL7 \Delta pagP81::P_{lpp} lpxE \Delta lpxR9$	χ9881
χ3761	Wild-type (or parent strain)	χ9241