

Supplemental Material: Mutations in *ampG* and lytic transglycosylase genes affect the net release of peptidoglycan monomers from *Vibrio fischeri*

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Supplemental Table S1. PG biosynthesis and recycling protein homologs in *V. fischeri*

Protein in <i>E. coli</i>	Function	ORF in <i>V. fischeri</i>
Biosynthesis		
MurA	UDP- <i>N</i> -acetylglucosamine enolpyruvyl transferase	VF0401
MurB	UDP- <i>N</i> -acetylenolpyruvylglucosamine reductase	VF2426
MurC	L-alanine ligase	VF2200
MurD	D-glutamic acid ligase	VF2203
MurE	<i>meso</i> -diaminopimelic acid ligase	VF2205
MurF	D-alanyl-D-alanine ligase	VF2206
MurG	glycosyltransferase	VF2201
MraY	undecaprenyl-phosphate phospho- <i>N</i> -acetylmuramoyl-pentapeptide transferase/translocase	VF2204
Bactoprenol/UppS	undecaprenyl phosphate (C ₅₅ -P)	VF2245
Periplasmic Incorporation and Cleavage		
PBP1A	transpeptidase/transglycosylase	VF2298
PBP1B	transpeptidase/transglycosylase	VF2162
PBP1C	unknown	ND ^a
PBP2	transpeptidase/elongase	VF0747
PBP3	transpeptidase	VF2207
PBP4	endopeptidase	VF0474
PBP5	carboxypeptidase	VF0745
PBP6	carboxypeptidase	VF0724
PBP7	endopeptidase	ND ^a
MepA	endopeptidase	ND ^a
MipA	scaffolding protein for murein synthesis	VF1632
AmiA	<i>N</i> -acetylmuramyl-L-alanine amidase	ND ^a
AmiB	<i>N</i> -acetylmuramyl-L-alanine amidase	VF2326
AmiC	<i>N</i> -acetylmuramyl-L-alanine amidase	ND ^a
AmiD	<i>N</i> -acetylmuramyl-L-alanine amidase	ND ^a
Slt70/SltY	Soluble lytic murein transglycosylase	VF0558 ^b VF1329 ^c
MltA	membrane-bound lytic murein transglycosylase	VF0587
MltB	membrane-bound lytic murein transglycosylase	VF1702 ^d
MltC	membrane-bound lytic murein transglycosylase	VF0419/420 VF1368
MltD	membrane-bound lytic murein transglycosylase	VF1939 ^c
EmtA	lytic murein endotransglycosylase	ND ^a
YfhD	periplasmic binding protein/transglycosylase	VF0651
AtlA	<i>N</i> -acetylglucosaminidase	ND ^a

Recycling		
AmpG	muropeptide permease	VF0720
Opp	oligopeptide permease	VF681-VF677
MppA	murein tripeptide permease	VF1597
LdcA	L,D-carboxypeptidase	ND ^a
AmpD	<i>N</i> -acetylmuramyl-L-alanine amidase cytoplasmic	VF2183
NagA	GlcNAc-6-P deacetylase	VF0807
NagK	<i>N</i> -acetylglucosamine kinase	VF1408
NagZ	beta- <i>N</i> -acetylglucosaminidase	VFA0493
AnmK	anhydromuramic acid kinase	VFA0492
MurQ	<i>N</i> -acetylmuramic acid-6-phosphate etherase	VF1114
GlmM	phosphoglucosamine mutase	VF0481
GlmU	<i>N</i> -acetylglucosamine-1-PO ₄ uridyltransferase	VF2562
Mpl	UDP- <i>N</i> -acetylmuramate: L-alanyl- γ -D-glutamyl-meso-diaminopimelate ligase	VF0265

^a ND indicates not detected; no significant homolog ($e > 1^{-10}$)

^b Now designated *ltgA*

^c Now designated *ltgY*

^d Now designated *ltgD*

^e Now designated *ltgE*