

## Supplemental Information

**Table S1 Strains and plasmids used in this study.**

<b>Strain</b>	<b>Characteristic</b>	<b>Source</b>
<i>E. coli</i> DH5 $\alpha$	Cloning strain	Invitrogen
<i>E. coli</i> MG1655	wild type, used as chassis for protein express in physiological level.	Invitrogen
<i>E. coli</i> $\Delta nlpI$	<i>nlpI</i> deletion of <i>E. coli</i> MG1655	This study
<i>E. coli</i> $\Delta tolA$	<i>tolA</i> deletion of <i>E. coli</i> MG1655	This study
<i>E. coli</i> $\Delta nlpI\Delta tolA$	<i>nlpI</i> and <i>tolA</i> deletion of <i>E. coli</i> MG1655	This study
<i>E. coli</i> $\Delta nlpI\Delta tolA$ -R	phage-resistant strain	This study
<b>Plasmid</b>	<b>Characteristic</b>	<b>Source</b>
pTK-Red	Spc <sup>+</sup> , temperature-sensitive, used for gene knockout in <i>E. coli</i>	Invitrogen
pCP20	Amp <sup>+</sup> , temperature-sensitive, used for gene knockout in <i>E. coli</i>	Invitrogen

**Table S2 Primers used in this study.**

<b>Primers</b>	<b>Sequence (5'-3')</b>	<b>Usage</b>
<i>nlpI</i> -wanner50-fr	CGGGAACAGGACGTTCAATCAACCGTGGTC TTCGGGAGTGGGAAATGAAGTGTAGGCTGG AGCTGCTTCG	PCR product was used for <i>nlpI</i> gene knockout in MG1655 strain
<i>nlpI</i> -wanner50-R	CAAAAAAGATTACGGGCTGATGTGTACGTC AGCTATTGCTGGTCCGATTCATGGGAATTA GCCATGGTCC	
<i>nlpI</i> -verify-F	CGACTGAGCAGTCTCAACCTGC	Verification of <i>nlpI</i> gene knockout
<i>nlpI</i> -verify-R	GCGGCCAGTCTACATAACTCATC	
<i>tolA</i> -wanner50-fr	TGAAAGAGAGCGGGTAACAGGCGAACAGT TTTTGGAAACCGAGAGTGTCATGTAGGCTG GAGCTGCTTCG	PCR product was used for <i>tolA</i> gene knockout in MG1655 strain
<i>tolA</i> --wanner50- R	GATGTTGACCGTCCGAACAGTCAACATCGC GATTACGGTTTGAAGTCCAAATGGGAATTA GCCATGGTCC	
<i>tolA</i> -verify-F	CAACCCGAAAACGGTCTTTCTGAT	Verification of <i>tolA</i> gene knockout
<i>tolA</i> -verify-R	TGGCCCACGATAATTTAGCAGAATG	