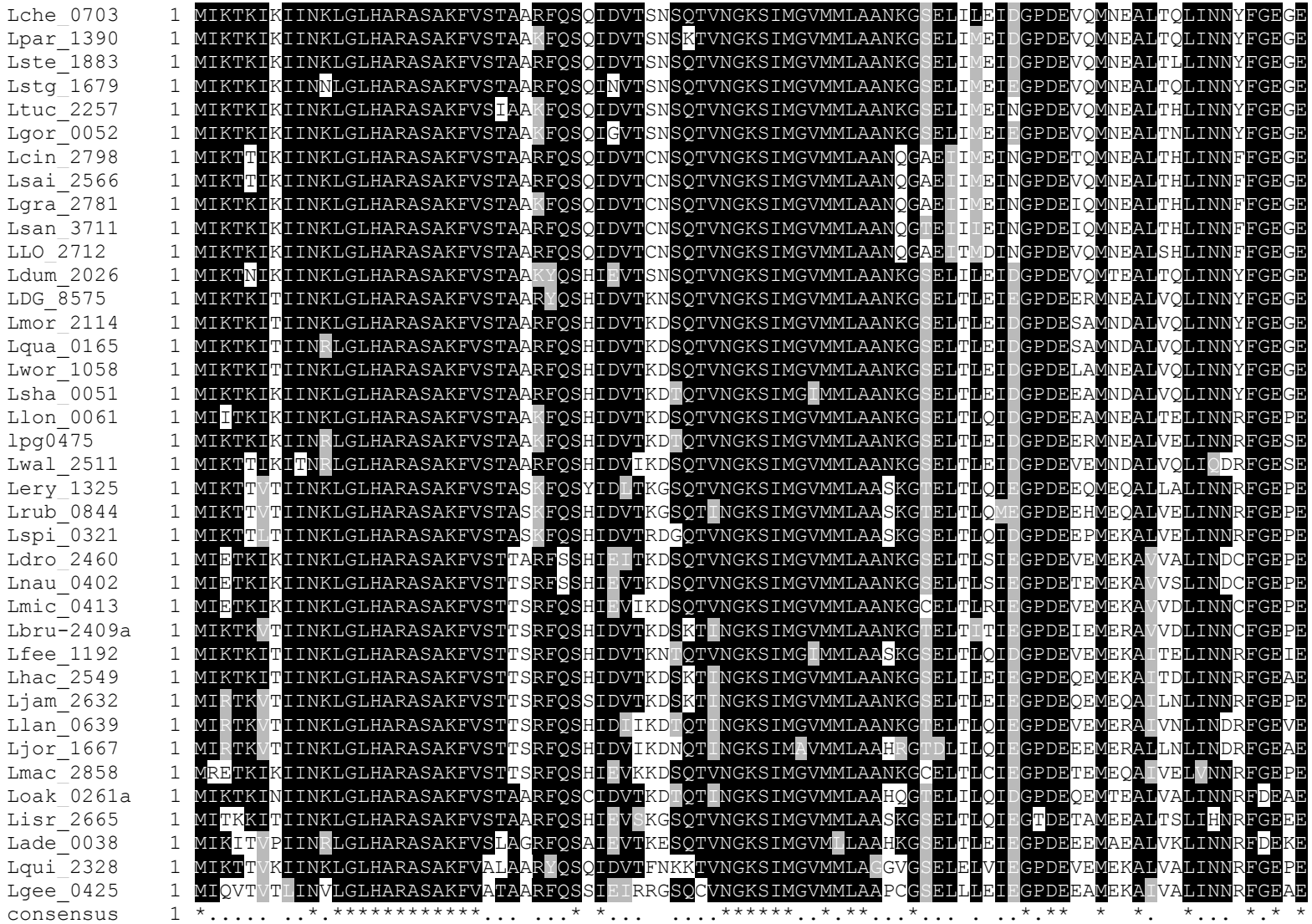


**Fig. S1.** Sequence alignment of the NPr protein from different *Legionella* species.
The sequence of the NPr proteins from 41 *Legionella* species were aligned using MAFFT version 7 (http://mafft.cbrc.jp/alignment/server/). Lpg, *L. pneumophila*; LDG, *L. drancourtii*; LLO, *L. longbeachae*; the abbreviations for the rest of the species are the first three letters of the species names which appear in Fig. 2.

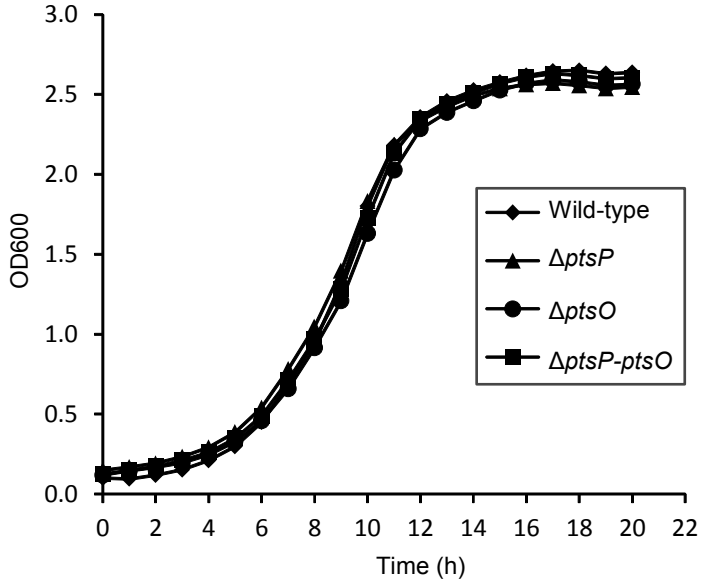


**Fig. S2.** In vitro growth profiles of the Δ*ptsP*, Δ*ptsO* and Δ*ptsP-ptsO* mutants.
Growth rates of wild-type, Δ*ptsP*, Δ*ptsO* and Δ*ptsP-ptsO* mutant strains of *L. pneumophila* in AYE broth cultures. The optical density (OD) at 600 nm was measured every hour from triplicate samples.

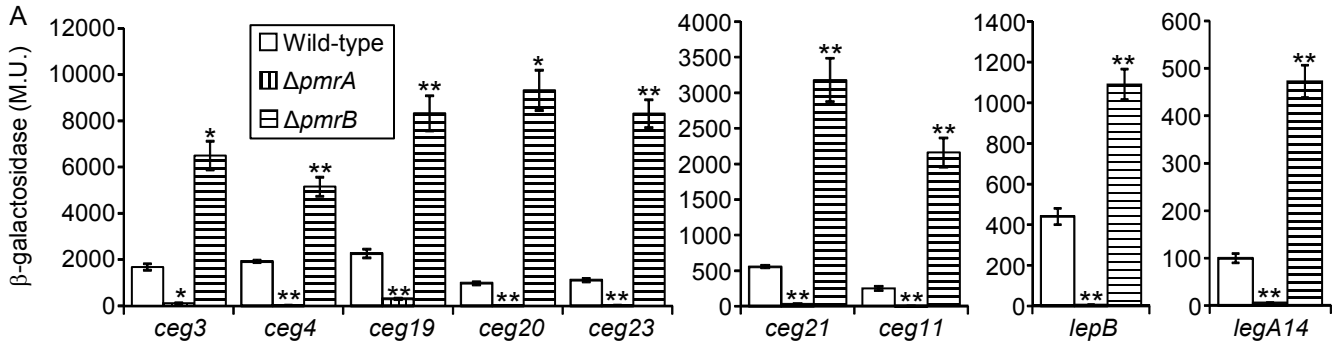


**Fig. S3.** The effect of the *L. pneumophila* PmrAB TCS on its target effector-encoding genes.
The expression of translational *lacZ* fusions of effector-encoding genes activated by PmrA was examined in the wild-type strain (JR32) (white bars), in the *pmrA* deletion mutant (HK-PQ1) (vertical line bars), and in the *pmrB* deletion mutant (EA-pmrB) (horizontal line bars) at the stationary phase. The levels of expression of the *lacZ* fusions were found to be significantly different (*, $P<10^{-4}$; **, $P<10^{-5}$, Student's *t* test), when comparing the expression in the wild-type strain and the *pmrA* or *pmrB* deletion mutants. The genes were grouped according to their levels of expression.

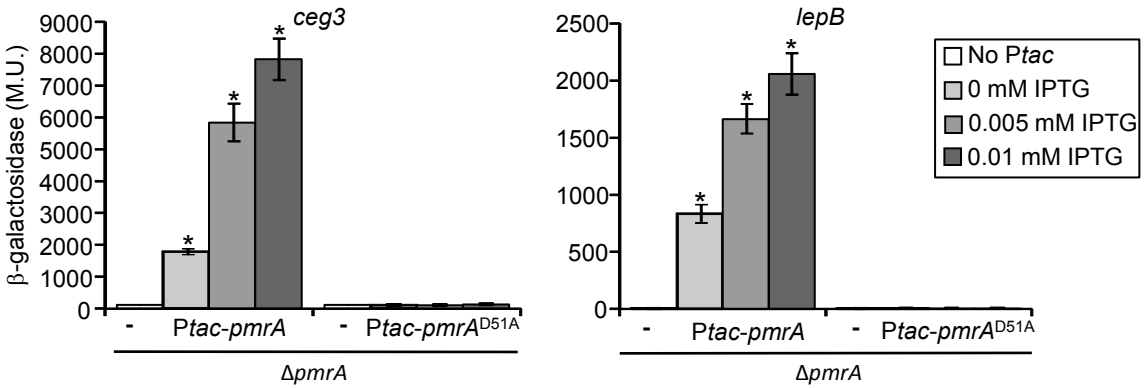


**Fig. S4.** PmrA must be phosphorylated in order to activate gene expression.
The levels of expression of two PmrA regulated effector-encoding genes (*ceg3* and *lepB*) were examined in the *L. pneumophila pmrA* deletion mutant (HK-PQ1). The bacteria contained a plasmid with the *pmrA* gene or the mutated pmrA$^{D51A}$ gene cloned under the control of the IPTG inducible P*tac* promoter. The plasmids containing the corresponding *lacZ* fusions of the examined genes without the *pmrA* gene were used as a control (white bars). The levels of expression of the *lacZ* fusions were found to be significantly different (*, P<10-5, Student's *t* test), when comparing the expression of the *lacZ* fusions containing the wild-type *pmrA* gene expressed from the P*tac* promoter and the expression of the fusions without the *pmrA* gene.