

Additional file 4

Effects of *ppiD* and *nlpE* overexpression on the *surA* *skp* growth and stress response phenotypes

Growth of *surA* Δ *skp* cells carrying the indicated plasmids and levels of induction of the σ^E -dependent and the CpxA/R-regulated envelope stress response pathways in the cells relative to the *surA* single mutant. The minimal and maximal values observed in at least two independent experiments are shown.

Plasmid	Growth	σ^E activity (-fold versus <i>surA</i>)	Cpx activity (-fold versus <i>surA</i>)
pASK75	-	4.3 - 4.8	7.0 - 7.6
pPpiD	+++	1.4 - 1.5	2.8 - 3.1
pPpiD Δ Parv	++	1.5 - 1.6	4.2 - 4.6
pPpiD(Δ TM)	-	4.7 - 5.7	8.4 - 9.7
pNlpE	(+) ¹	1.4 - 1.5	12.7 - 18.5

¹weak growth during early exponential phase in liquid LB culture, no growth on solid LB