

Figure S1. Growth curves of WT, $\Delta dgeo_{1986-87}$, complement $\Delta dgeo_{1986-87}$, and $\Delta dgeo_{1985R}$. Growth curve could be divided into two groups, which are WT/ $\Delta dgeo_{1985R}$ and $\Delta dgeo_{1986-87}$. $\Delta dgeo_{1986-87}$ was delayed and lower maximal absorbance since middle exponential growth phase. The complement strain was delayed by chloramphenicol growth inhibition and maximal growth was approached till lower maximal absorbance.

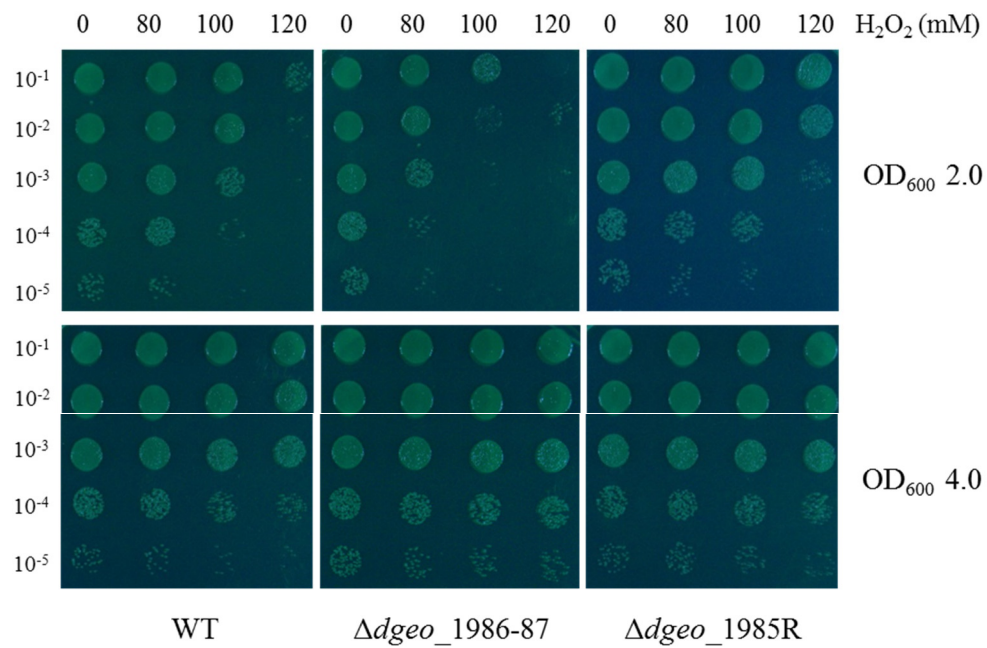


Figure S2. Comparison of viability between [E] phase ($OD_{600} 2.0$) and [L] phase ($OD_{600} 4.0$) among wild-type, $\Delta dgeo_1986-87$, and $\Delta dgeo_1985R$ by the different final concentration of hydrogen peroxide.

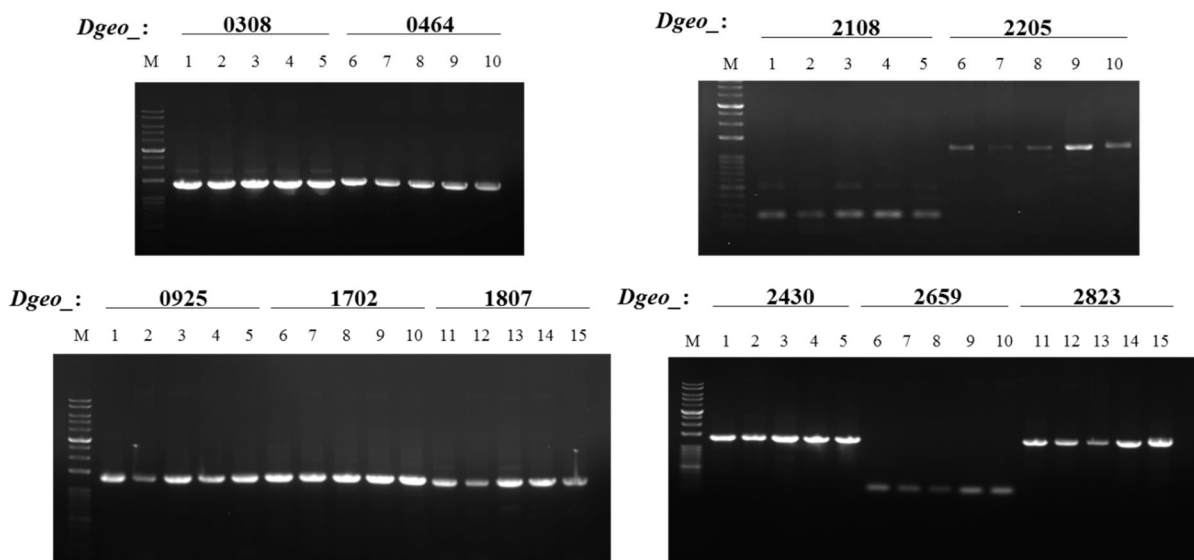


Figure S3. PCR detection of ten *ISDge5* copies was amplified by the target gene primer sets from $\Delta dgeo_1986-87_w1$.

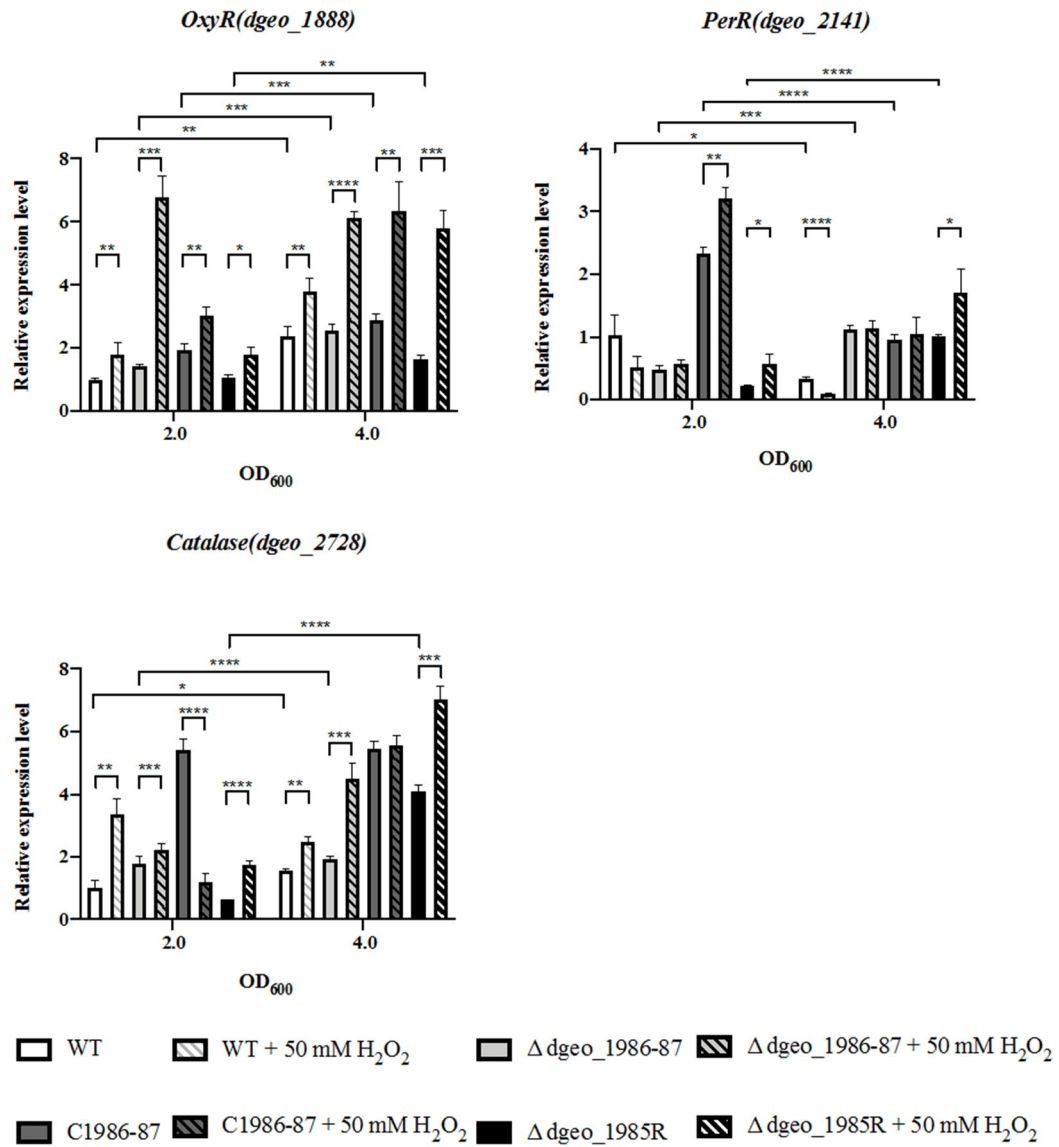


Figure S4. qRT-PCR assay for expression levels of OxyR, catalase (KatE), and a putative redox-sensing regulator PerR at two different growth phases with present or absent hydrogen peroxide of 50 mM in this study. The statistical analysis was done by probability *t*-test for differences between the samples in Prism™ program (ver. 8.0) and it was considered significant at $p < 0.05$ (*), $p < 0.01$ (**), $p < 0.001$ (***), and $p < 0.0001$ (****).

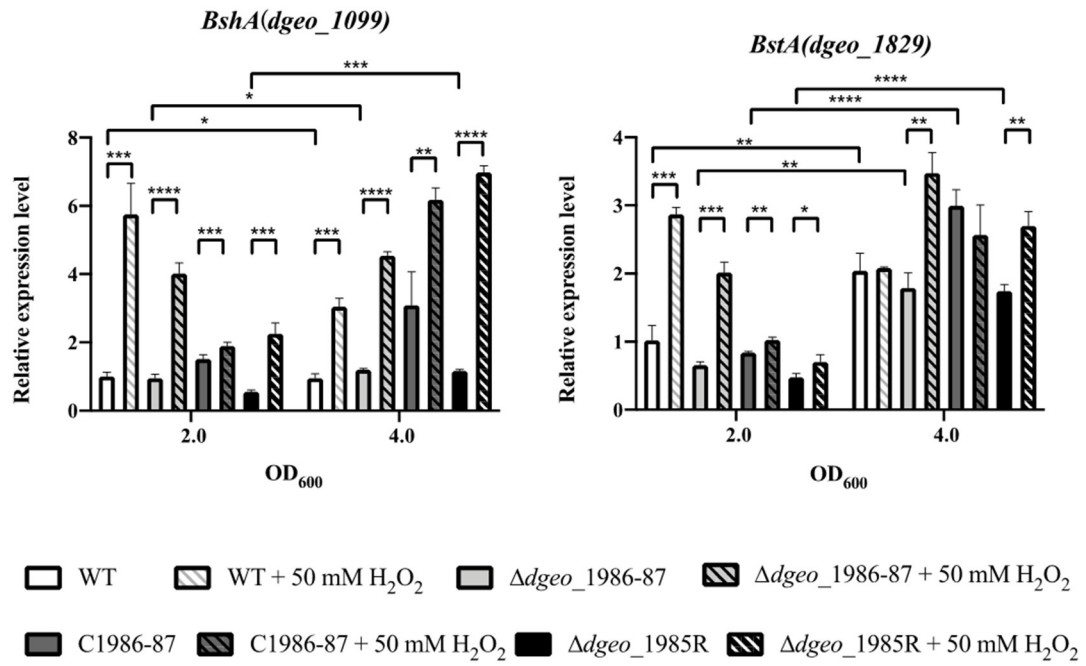


Figure S5. qRT-PCR assay for expression levels of selected two BSH synthesis involved genes, BshA (*dgeo_1099*) and BstA (*dgeo_1829*) at two different growth phases with present or absent hydrogen peroxide of 50 mM in this study.

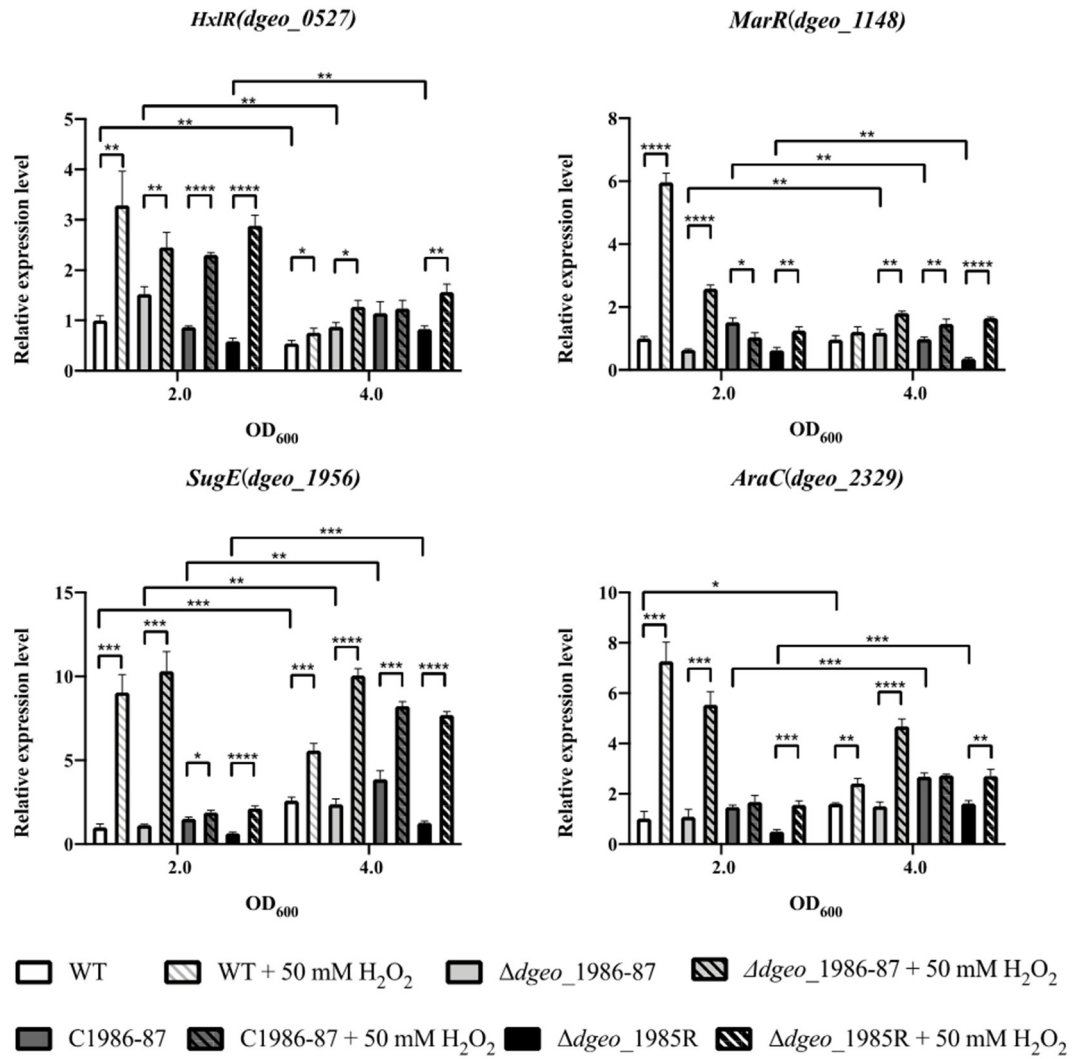


Figure S6. qRT-PCR assay for expression levels of selected four regulating genes at two different growth phases with present or absent hydrogen peroxide of 50 mM in this study. Based on the transcriptomic study, expression levels of HxlR (*dgeo_0527*), MarR (*dgeo_1148*), SugE (*dgeo_1956*), and AraC (*dgeo_2329*) were tested.

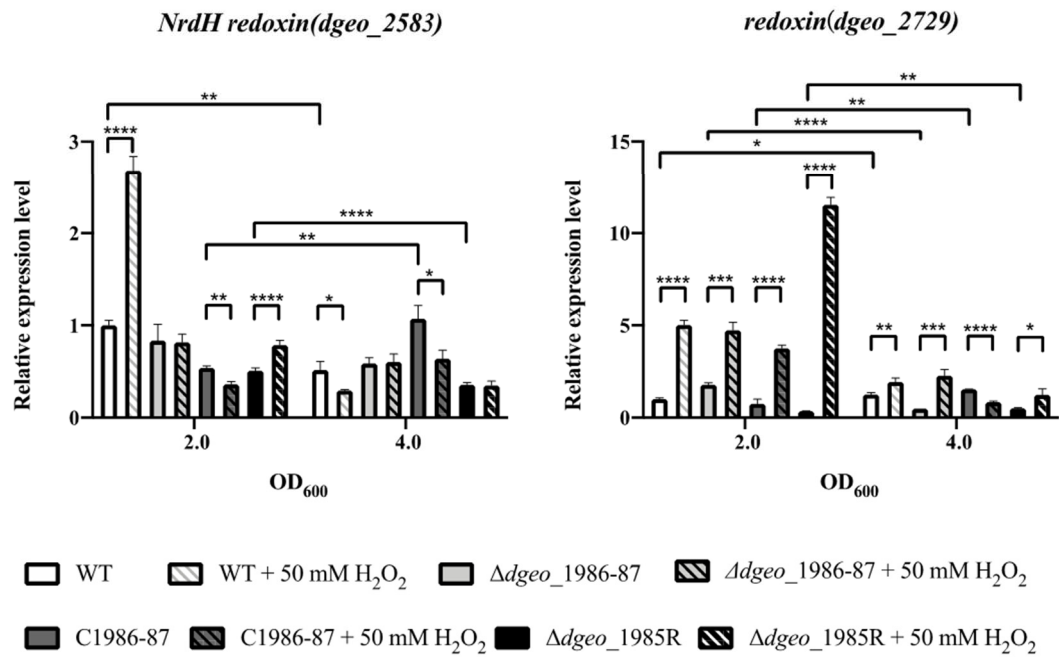


Figure S7. qRT-PCR assay for expression levels of two redoxin genes such as NrdH redoxin and a catalase neighbor redoxin at two different growth phases with present or absent hydrogen peroxide of 50 mM.