

## Supplementary Materials

## Menaquinone-7 production from maize meal hydrolysate by *Bacillus* isolates with diphenylamine and analogue resistance

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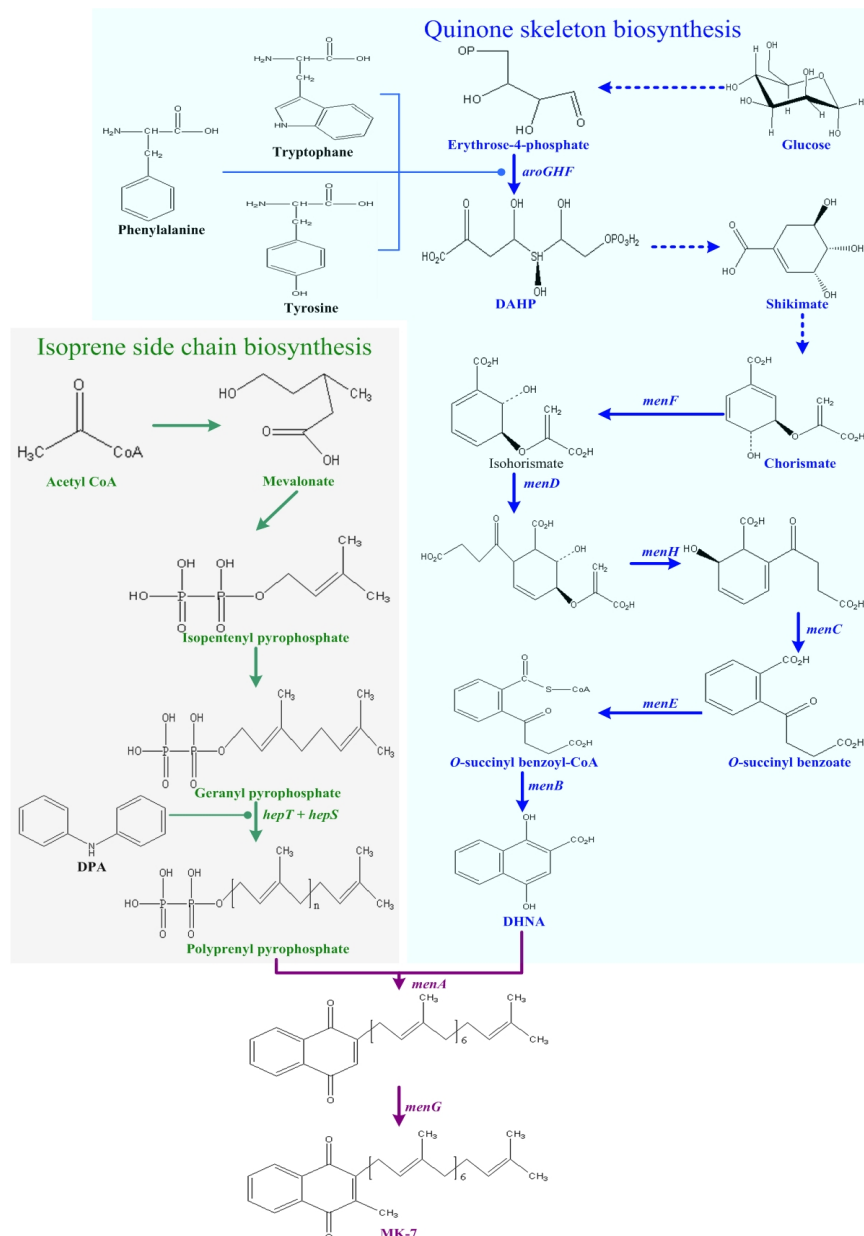
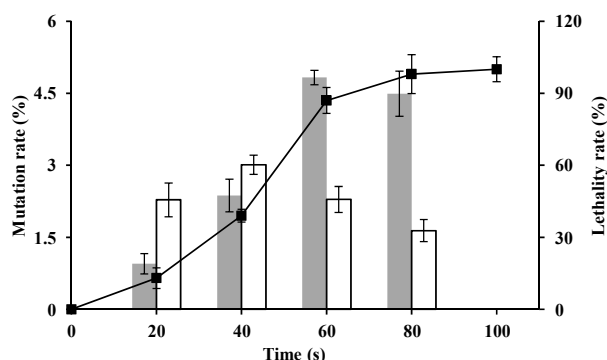


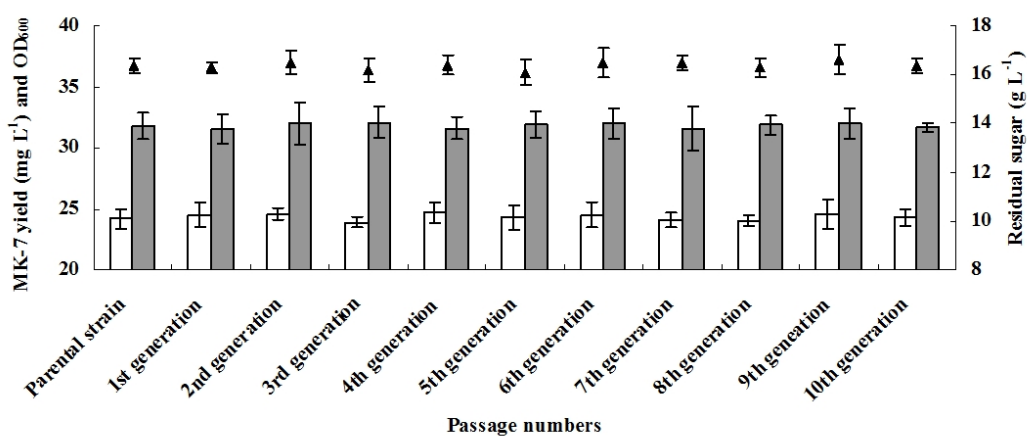
Fig. S1 Biosynthetic pathway of MK-7 and regulation mechanism by inhibition of aromatic amino acids and diphenylamine (Armougom *et al.*, 2009)

● represents inhibition; DAHP: deoxy-D-arabinohepturosonate-7-phosphate; DHNA: 1,4-dihydroxyl-2-naphthoate; MK-7: menaquinone-7



**Fig. S2 Mutation rate and lethality rate of *B. amyloliquefaciens* Y-2 by ARTP**

Gray-colored-column represents the positive mutation rate; White-colored-column represents the negative mutation rate; Folding-line represents the lethality rate. Positive mutation rate=(colonies with increased MK-7 production/total colonies grew in TYG-plates) $\times$ 100%; Negative mutation rate=(colonies with decreased MK-7 production/total colonies grew in TYG-plates) $\times$ 100%; Lethality rate=(colonies grew in TYG-plates before mutagenesis–colonies grew in TYG-plates after mutagenesis)/total colonies grew in TYG-plates before mutagenesis $\times$ 100%. Each value represents mean with standard error of three replicative experiments. The standard errors are shown as bars.



**Fig. S3 Cell growth, MK-7 production, and sugar utilization of the mutant *B. amyloliquefaciens* H.β.D.R.-5 after several generations**

White-colored-column represents OD<sub>600</sub>; Gray-colored-column represents the concentration of MK-7; Filled-triangle represents the residual sugar concentration. Each value represents mean with standard error of three replicative experiments. The standard errors are shown as bars.

## Reference

Armougom, F., Bittar, F., Stremmer, N., *et al.*, 2009. Microbial diversity in the sputum of a cystic fibrosis patient studied with 16S rDNA pyrosequencing. *Eur. J. Clin. Microbiol. Infect. Dis.*, **28**(9):1151-1154.  
<http://dx.doi.org/10.1007/s10096-009-0749-x>