

Supplementary Information
for
**Dissecting metabolic burden in
Pseudomonas putida reveals precursor
limitation in heterologous lycopene
production**

by

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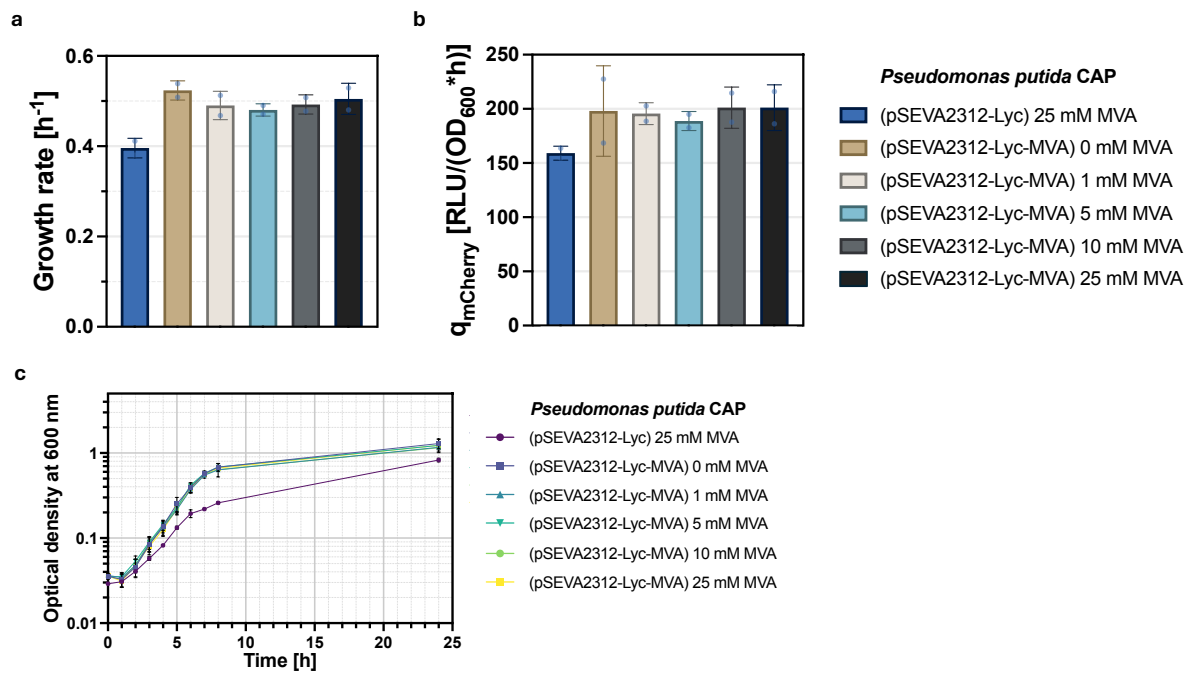


Figure S1 Growth rate (a), capacity estimated from mCherry fluorescence rate (b), and growth (c) of *P. putida* CAP (pSEVA2312-Lyc) and *P. putida* CAP (pSEVA2312-Lyc-MVA) supplemented with different concentrations of mevalonate.

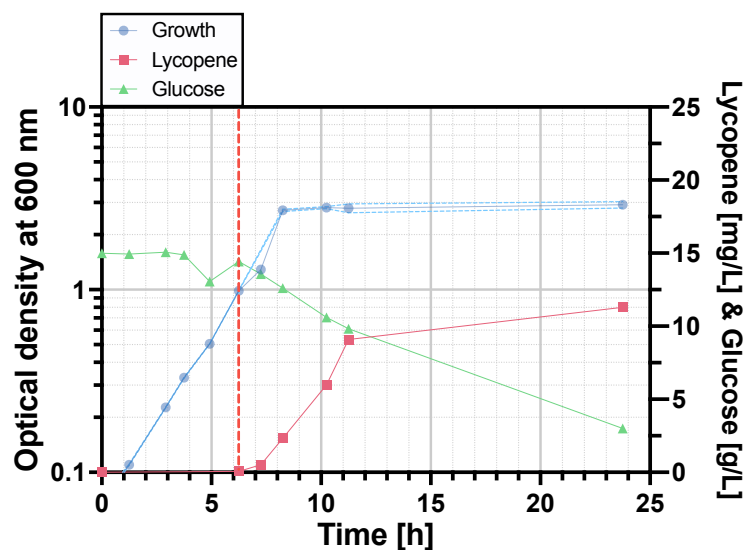


Figure S2 Growth (blue), lycopene concentration (red), and glucose concentration (green) during the repeated batch cultivation of *P. putida* CAP (pSEVA2312-Lyc-MVA) in a stirred-tank bioreactor containing M9 mineral medium supplemented with 15 g/L glucose. The pH was maintained at 7, and pO₂ above 40%. The red-dotted line marks the time point of induction with 1 mM CHPA.

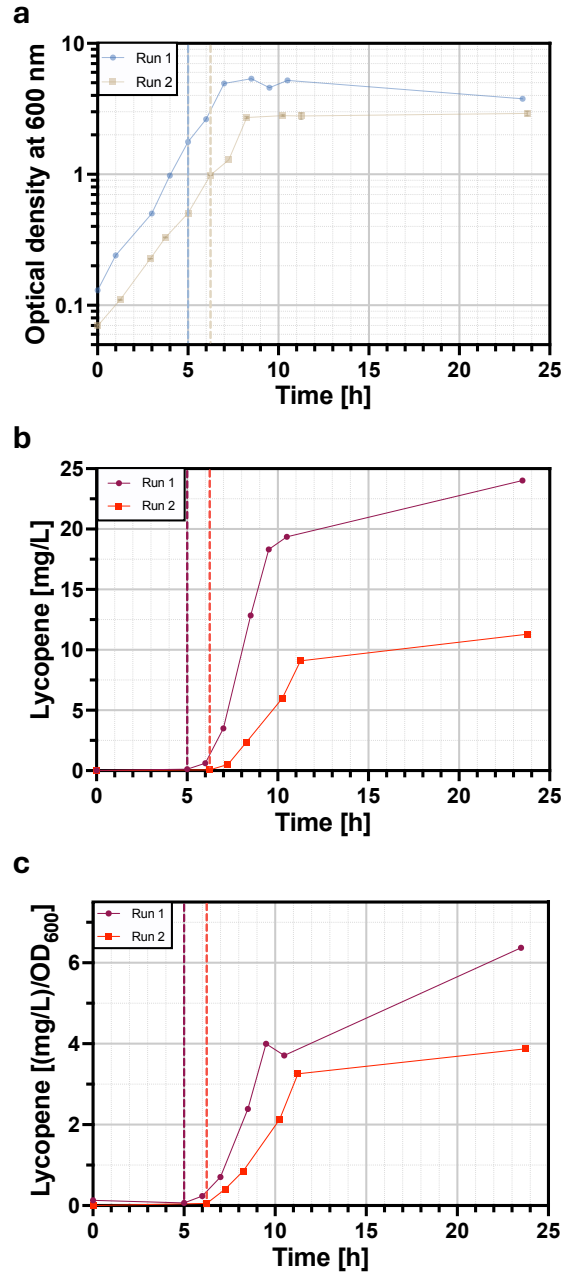


Figure S3 Growth (a) lycopene titer (b) and lycopene concentration normalized to the optical density (c) of *P. putida* CAP (pSEVA2312-Lyc-MVA) of two independent batch processes (Run 1 and Run 2). Batch processes were performed in M9 mineral medium supplemented with 15 g/L glucose. The pH was maintained at 7, and pO₂ above 40%. The dotted lines mark the time point of induction with 1 mM CHPA.

Table S1 Time intervals used for the determination of specific growth rates (μ) by linear regression, listed for each strain and experimental condition, and grouped according to the corresponding figures.

Strain		Time intervals for growth rate [h]
Figure 2		
<i>P. putida</i> CAP	(pSEVA2312-Lyc)	3-9
	(pSEVA2312-Lyc) not induced	3-9
	(pSEVA438-Lyc)	3-8
	(pSEVA438-Lyc) not induced	2-9
Figure 3		
<i>P. putida</i> CAP	(pSEVA2312-Lyc-MVA)	1-5
	(pSEVA2312-Lyc-MVA) not induced	1-6
	(pSEVA438-Lyc-MVA)	1-6
	(pSEVA438-Lyc-MVA) not induced	0-7
Figure 5		
<i>P. putida</i> CAP	(pSEVA2312-Lyc) 5 mM MVA	1-5
	(pSEVA2312-Lyc-MVA) 0 mM MVA	1-6
	(pSEVA2312-Lyc-MVA) 5 mM MVA	1-6
Figure S1		
<i>P. putida</i> CAP	(pSEVA2312-Lyc)	2-6
	(pSEVA2312-Lyc-MVA) 0 mM	1-6
	(pSEVA2312-Lyc-MVA) 1 mM	1-7
	(pSEVA2312-Lyc-MVA) 5 mM	1-7
	(pSEVA2312-Lyc-MVA) 10 mM	1-7
	(pSEVA2312-Lyc-MVA) 25 mM	1-7