

Supporting Information

Efficient one-step Preparation of γ -Aminobutyric Acid from Glucose without Exogenous Cofactor by the Designed *Corynebacterium glutamicum*

Rongzhen Zhang^{1,2}, Taowei Yang¹, Zhiming Rao^{1,2*}, Hongmei Sun¹, Meijuan
Xu¹, Xian Zhang¹, Zhenghong Xu³, Shangtian Yang⁴

¹ The Key Laboratory of Industrial Biotechnology, Ministry of Education,
School of Biotechnology, Jiangnan University, Wuxi, 214122, P. R. China

² National Laboratory for Food Science, Jiangnan University, Wuxi 214122, P.
R. China

³ School of Medicine and Pharmaceuticals, Jiangnan University, Wuxi,
214122, P. R. China

⁴ Department of Chemical Engineering, Ohio State University, 140 West 19th
Avenue, Columbus, OH 43210, USA

*Author for correspondence;

Zhiming Rao

Tel: +86-510-85916881;

E-mail: raozhm@jiangnan.edu.cn

Present address: School of Biotechnology, Jiangnan University, 1800 Lihu
Avenue, Wuxi, Jiangsu, 214122, P. R. China

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Table 1 Strains, plasmids and primers used in this study

Strains, plasmids and primers	Characteristics	Sources
Strains		
<i>E. coli</i> JM109	<i>endA1 glnV44 thi-1 relA1 gyrA96 recA1 mcrB⁺ Δ(lac-proAB) e14[F' traD36 proAB⁺ lacI^q lacZΔM15]</i>	Invitrogen
<i>L. plantarum</i> GB 01-21	Obtained through multi-mutagenesis, with high GAD activity	Lab stock
<i>C. glutamicum</i> G01	A high producer of L-glutamate from glucose	Lab stock
<i>C. glutamicum</i> AG	<i>C. glutamicum</i> with a recombinant fragment of <i>argB::tacgad</i>	This work
<i>C. glutamicum</i> APGG	<i>C. glutamicum</i> with a recombinant fragment of <i>argB::tacgad</i> and <i>proB::tacgad</i>	This work
<i>C. glutamicum</i> APLGGP	<i>C. glutamicum</i> with a recombinant fragment of <i>argB::tacgad</i> , <i>proB::tacgad</i> and <i>hom::tacplk</i>	This work
Plasmids		
pDXW-10	m- <i>tac</i> promoter, Km ^R	Lab stock
pDXW- <i>gad</i>	pDXW-10 containing the <i>gad</i> gene	This work
pDXW- <i>plk</i>	pDXW-10 containing the <i>plk</i> gene	This work
pK18 <i>mobsacB</i>	Integration vector, <i>oriV</i> , <i>oriT</i> , <i>mob</i> , <i>sacB</i> , Km ^R	Lab stock
pK18- <i>argB::tacgad</i>	pK18 <i>mobsacB</i> with a recombinant fragment of <i>argB::tacgad</i>	This work

pK18- <i>proB::tacgad</i>	pK18 <i>mobsacB</i> with a recombinant fragment of <i>proB::tacgad</i>	This work
pK18- <i>dapA::tacplk</i>	pK18 <i>mobsacB</i> with a recombinant fragment of <i>dapA::tacplk</i>	This work
Primers	5'→3'	
<i>gadP1</i>	ACCGGCTAGCATGGACCAGAAGCTGTTAAC (<i>Nhe</i> I)	
<i>gadP2</i>	GAAGATCTTCAGGTGTGTTTAAAGCTGTT (<i>Bgl</i> II)	
<i>tacgadP</i>	GAAGATCTGGA GCT TAT CGA CTG CAC GGTGCA (<i>Bgl</i> II)	
<i>argBP1</i>	ACCGTCTAGAATGAATGACTTGATCAAAG (<i>Xba</i> I)	
<i>argBP2</i>	GAAGATCTGTGGGTACGCCATCGATGTTGACC (<i>Bgl</i> II)	
<i>argBP3</i>	ATCGATGGCGTACCCACAGATCTTGATATTGGTTTGGTCGG (<i>Bgl</i> II)	
<i>argBP4</i>	CCCAAGCTTTTACAGTTCCCATCCTTG (<i>Hind</i> III)	
<i>proBP1</i>	GCTCTAGAATGCGTGAGCGCATCTCCAACGC (<i>Xba</i> I)	
<i>proBP2</i>	GAAGATCTGCAGCACCAAAGCATCAGCCGACACC (<i>Bgl</i> II)	
<i>proBP3</i>	CTGATGCTTTGGTGCTGCAGATCTTCAGTGACGTGGATGG (<i>Bgl</i> II)	
<i>proBP4</i>	CCCAAGCTTTTACGCGCGGCTGGCGTAG (<i>Hind</i> III)	
<i>dapAP1</i>	GCTCTAGA ATGAGCACAGGTTTAAACAGC (<i>Xba</i> I)	
<i>dapAP2</i>	CGCGTCGAC TTATAGAACTCCAGCTTTTTTTC (<i>Sal</i> I)	
<i>plkP1</i>	AACTGCAGTTGTCAACAATGTTAGTGGCGG (<i>Pst</i> I)	
<i>plkP2</i>	CCCAAGCTTTCAATTGAGGGCTAAAATTGCC (<i>Hind</i> III)	
<i>tacplkP</i>	CCCAAGCTTGGAGCTTATCGACTGCACGGTGC (<i>Hind</i> III)	
