

[Supplementary material]

Journal: Applied Microbiology and Biotechnology

Development of a potential stationary-phase specific gene expression system by engineering of SigB-dependent *cg3141* promoter in *Corynebacterium glutamicum*

Min Jeong Kim¹, Sung Sun Yim¹, Jae Woong Choi¹, Ki Jun Jeong^{1,2,*}

¹Department of Chemical and Biomolecular Engineering, BK21 Plus program, KAIST, 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea

²Institute for the BioCentury, KAIST, 291 Daehak-ro, Yuseong-gu, Daejeon 305-701, Republic of Korea

Telephone: +82-42-350-3934; fax: +82-42-350-3910; e-mail: kjeong@kaist.ac.kr

Table S1. List of primers used in this study

Primer name	Primer sequence (5' to 3' direction)
<i>P_{cg0096}</i> -F	attaatggtaccactgcgcgttctatttccc
<i>P_{cg0096}</i> - sfGFP-R	cagtgaaaagttcttctcctttgctcatgcgcgtgcttcttagatgac
<i>P_{cg1417}</i> -F	attaatggtacccccgatctgtgttacgcc
<i>P_{cg1417}</i> - sfGFP-R	cagtgaaaagttcttctcctttgctcatgagatgaatatagtcatagaatcgcgttttg
<i>P_{cg3141}</i> (500)-F	attaatggtaccgtggctgtgtaggtttgttcg
<i>P_{cg3141}</i> (300)-F	attaatggtaccgactcggatgttttatcgcctg
<i>P_{cg3141}</i> -sfGFP-R	cagtgaaaagttcttctcctttgctcatggggtttcgcctttccatgc
<i>P_{cg3141}</i> (NdeI) sfGFP-R	cagtgaaaagttcttctcctttgctcatatggttttcgcctttccatgcttcgatg
sfGFP-F	attaatcatatgagcaaaggagaagaactttcactg
sfGFP-R	attaatgcggccgcttattattgtcatcgtcatctttataatctttgtagagctcatccatgccat
SigB-F	attaatccatggcggcgcccatcgtg
SigB-R	attaatccatggctattactgtcgtcatcgtctttgtagtcctgggcgtactcacgaaga
SigB-del-up-F	attaataagcttgagccatcgattgcccc
SigB-del-up-R	aactggcctcctaaattcgcg
SigB-del-down-F	cgcgaaattaggaggccagttaagcgtgaactaacaatcgaagcg
SigB-del-down-R	attaattctagaagcacgcagaggaacaatgc
Library-F	atggtacccccgtttaaacattttccaattagtgatnnnnnnnnnnntaagg nnnnnnnnnnnnnnnnntgggatnnnnnnnnnattagattaaatccgtagaaattagccc
Library-R	attaatcatatggttttcgcctttccatgcttcatgggctaatttctacggatttaactaat
Linker-R	atcactaattggaaaaatgtttaaacggg
GST-F	attaatcatatgtcccctatactaggttattgga
GST-R	attaatgcggccgcttattaatccgattttggaggatggctc

		-35		-10	
Template	NNNNNNNNNN	TTAAGG	NNNNNNNNNNNNNNNNNN	TGGGAT	NNNNNNNN
Pcg3141	TGCCATCATA	TTAAGG	CCAAATTGCTTGGATCC	TGGGAT	TTATTTA
4-1*	GCCCTGCGGT	TTAAGG	GTGTAGACAGTCTGCCT	TGGGAT	GTGTAGC
4-2	GGACATTAAT	TTAAGG	CAGAGTATATTGGATCA	TGGGAT	GGGGAGT
4-5	ACCGATAGAA	TTAAGG	GTCTTGTATCGGGCTGT	TGGGAT	GGGTAGA
4-7	GCTCTTTAGA	TTAAGG	AAGGGTAGAGTAAGAGG	TGGGAT	GCAGGTC
4-8**	CAAAATCTAT	TTAAGG	TCCTTGCTTATAGGGGG	TGGGAT	GGTTAGG
4-11	TTGGGAGACG	TTAAGG	GGTGGACAGGTGGCGGG	TGGGAT	GGTACGA
4-14	AGATCTGTAG	TTAAGG	CGGTTGACGACTCACGC	TGGGAT	CAGTAGC
4-N1	TCAGCGGGGT	TTAAGG	CCCGGATCCGACGCTAG	TGGGAT	ATACTGA
4-N2***	GACTAGGTTG	TTAAGG	AAGGGTATAGTAGTTAC	TGGGAT	CTAGGGA
4-N4	GGATCGGGAT	TTAAGG	AGCAGATAGTGGTAAGG	TGGGAT	GCGACGG
4-N5	CATTAGGCCA	TTAAGG	GTCAAGCGGTGGTATGC	TGGGAT	CTAGGCT
4-N6	ATTGCGCACA	TTAAGG	CAACGGGCCTGGATCGT	TGGGAT	TTAAGCT
4-N7	GACATGATCT	TTAAGG	TCCTGTATTCTTAATAG	TGGGAT	GATTGAA
4-N8	TGGTTGCCCG	TTAAGG	CCATTGTGAGACGAGTG	TGGGAT	GTGTAGG
4-N9	TATAGTCACA	TTAAGG	ATGAGTGGGGCCGATTC	TGGGAT	GTGGAGT
4-N10	GAGTCTTAGA	TTAAGG	GCTTGAGTAGATCAGAA	TGGGAT	GTAAAGT
4-N11	CGTCTCGCGC	TTAAGG	GTGTCGGTCTTGTTAAG	TGGGAT	GTGCTGC
4-N12	CCGGAGGTGT	TTAAGG	AAGGTATTCTTGATCTA	TGGGAT	TCAGTGC
4-N14	CAAATCAACA	TTAAGG	ATATGGACGTTGCCAGC	TGGGAT	GGTTAGA
4-N15	CCGTCCAATA	TTAAGG	AGCTTGAGACAGAACGC	TGGGAT	GCGTAGA

*4-1, 4-3, 4-4, 4-6, 4-9, 4-12, 4-13, 4-15 have the same promoter sequences.

**4-8 and 4-10 have the same promoter sequences.

***4-N2, 4-N3, 4-N13 have the same promoter sequences.

Fig. S1 Sequence analysis of the isolated promoters. The boxes indicate the -10 and -35 regions of promoters

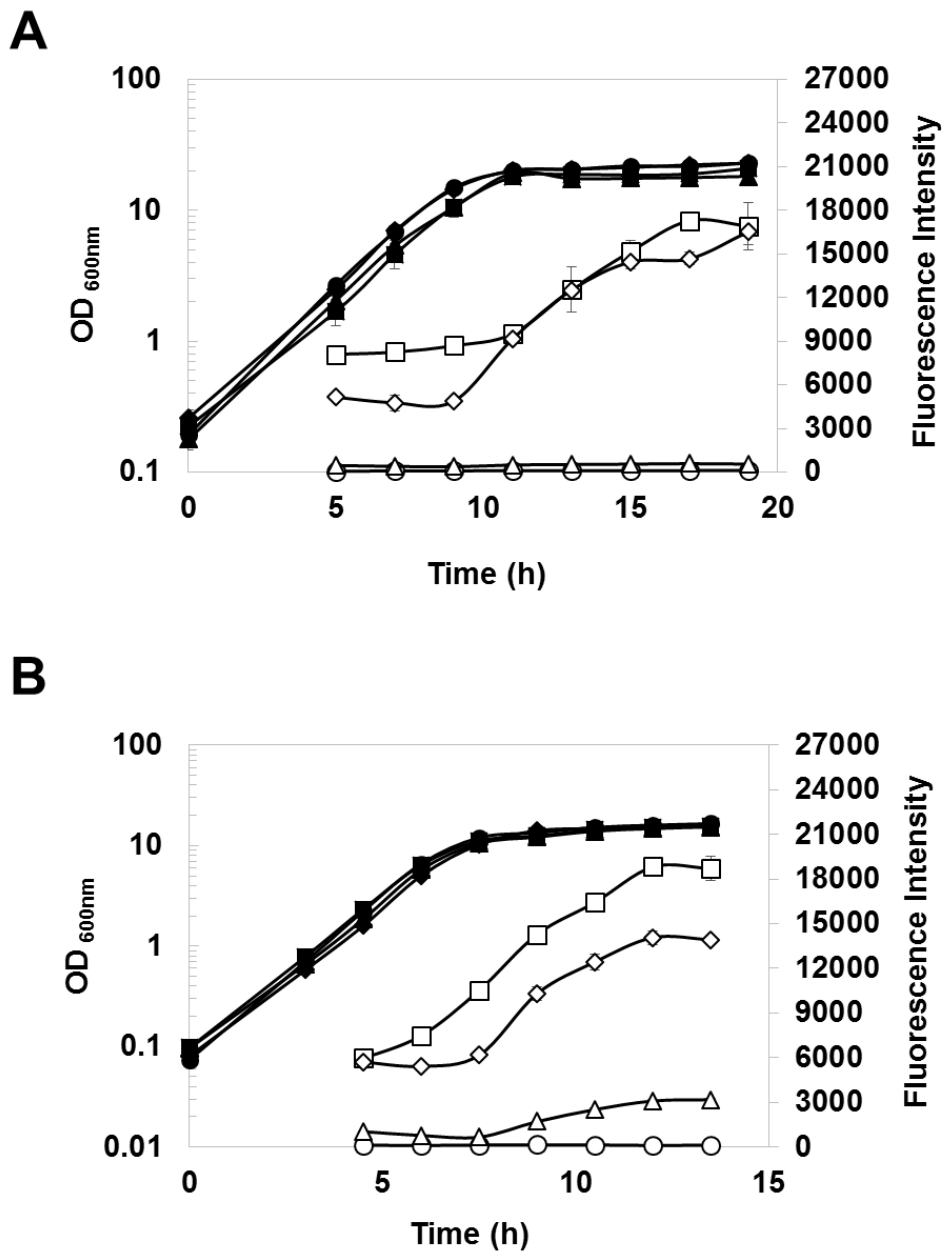


Fig. S2 The expression of *sfgfp* gene under P_{cg3141} , the constitutive promoter P_{H36} , and the isolated promoter P_{4-N14} in defined medium (A) and semi-defined medium (B). Symbols: Circle (\circ), pCES208; triangle (\triangle), pCES- P_{3141} (500)-sfGFP; square (\square), pCES- P_{H36} -sfGFP; diamond (\diamond), pCES- P_{4-N14} -sfGFP. Closed and open symbols indicate the cell density (OD_{600 nm}) and fluorescent intensities, respectively. The experiments were performed in triplicates and standard deviation is indicated.