Supplementary materials for

Journal name: Molecules

Manuscript Title: Constructing an efficient *Bacillus subtilis* spore display by using cohesin−dockerin interaction

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Table S1. Strains and plasmids used in this study

Name	Description	Source
Strains		
E. coli		
Top10	*F⁻ mcrA Δ(mrr-hsdRMS-mcrBC) ϕ80lacZΔM15 ΔlacX74 nupG recA1 araD139 Δ(ara-leu)7697 galE15 galK16 rpsL(Str^R) endA1 λ⁻*	Laboratory stock
BL21(DE3)	*F⁻ ompT gal dcm lon hsdSB (r_B⁻m_B⁻) λ(DE3 [lacI lacUV5-T7 gene 1 ind1 sam7 nin5])*	Laboratory stock
Clostridium thermocellum ATCC 27405	Template for encoding type-I and type-II cohesin genes	ATCC
Clostridium cellulovorans DSM 743B	Template for encoding type-I cohesin gene	DSMZ
Clostridium cellulolyticum ATCC 35319	Template for encoding type-I cohesin gene	ATCC
Ruminococcus flavefaciens FD-1	Template for encoding type-III cohesin gene	DSMZ
B. subtilis		
168	*trpC2*	BGSC
WB600	*ΔnprE, ΔnprB, aprΔ3, Δepr, Δbpf, ΔaprE, trpC2*	BGSC
GC01	WB600WT *cotG-Ctcoh-I*	This study

GC02	WB600WT *cotG-Ctcoh-II*	This study
GC03	WB600WT *cotG-Ccscoh-I*	This study
GC04	WB600WT *cotG-Ccmcoh-I*	This study
GC05	WB600WT *cotG-Rfcoh-III*	This study
BD01	BL21(DE3) *bgaB-Ctdoc-I*	This study
BD02	BL21(DE3) *bgaB-Ctdoc-II*	This study
BD03	BL21(DE3) *bgaB-Ccsdoc-I*	This study
BD04	BL21(DE3) *bgaB-Ccmdoc-I*	This study
BD05	BL21(DE3) *bgaB-Rfdoc-III*	This study
GBJ01	WB600WT *cotG-Ctcoh-I*::*bgaB-Ctdoc-I*	This study
GBJ02	WB600WT *cotG-Ctcoh-II*::*bgaB-Ctdoc-II*	This study
GBJ03	WB600WT *cotG-Ccscoh-I*::*bgaB-Ccsdoc-I*	This study
GBJ04	WB600WT *cotG-Ccmcoh-I*::*bgaB-Ccmdoc-I*	This study
GBJ05	WB600WT *cotG-Rfcoh-III*::*bgaB-Rfdoc-III*	This study
GB01	WB600WT *cotG-bgaB*	This study
PB01	WB600WT P_{cry1Aa}-*bgaB*	This study

Plasmids

pET-28a	pBR322 *ori lacI T7lac Kan*^{r}	Novagen
pET-28a-*bgaB*	pET-28a carrying *bgaB*	(Wang et al., 2016)
pET-28a-*bgaB-Ctdoc-I*	pET-28a carrying fusion gene *bgaB-Ctdoc-I*	This study
pET-28a-*bgaB-Ctdoc-II*	pET-28a carrying fusion gene *bgaB-Ctdoc-II*	This study
pET-28a-*bgaB-Ccsdoc-I*	pET-28a carrying fusion gene *bgaB-Ccsdoc-I*	This study
pET-28a-*bgaB-Ccmdoc-I*	pET-28a carrying fusion gene *bgaB-Ccmdoc-I*	This study
pET-28a-*bgaB-Rfdoc-III*	pET-28a carrying fusion gene *bgaB-Rfdoc-III*	This study
	E. coli-B. subtilis shuttle plasmid	(Xu et al., 2011)
pEB03-*cotG*	pEB03 carrying *cotG*	(Wang et al., 2016)
pEB03-*cotG-Ctcoh-I*	pEB03 carrying fusion gene *cotG-Ctcoh-I*	This study
pEB03-*cotG-Ctcoh-II*	pEB03 carrying fusion gene *cotG-Ctcoh-II*	This study
pEB03-*cotG-Ccscoh-I*	pEB03 carrying fusion gene *cotG-Ccscoh-I*	This study
pEB03-*cotG-Ccmcoh-I*	pEB03carrying fusion gene *cotG-Ccmcoh-I*	This study
pEB03-*cotG-Rfcoh-III*	pEB03 carrying fusion gene *cotG-Rfcoh-III*	This study

pEB03-*cotG-bgaB*	pEB03 carrying fusion gene *cotG-bgaB*	This study
pEB03-P_{cry1Aa}-*bgaB*	pEB03 carrying P_{cry1Aa}-*bgaB*	This study

Table S2. List of all primers used in the study

Name	Sequence (5′→3′)	Restriction enzyme site
cotG-F	ATCGATAAGCTTGATATCGAATTCCTTTTCTAGAAGTGTCCCT	*EcoR* Ⅰ
cotG-R	AGAACTAGTGGATCCCTGCAGTTTGTATTTCTTTTTGACTACC CAGCAATTG	*Pst* Ⅰ
coh Ⅰ-1-*F*	AAAAAGAAATACAAACTGCAGGGAGATACAACAGTACCTA C	*Pst* Ⅰ
coh Ⅰ-1-*R*	CGCTCTAGAACTAGTGGATCCTTACTTGTCGTCATCGTCTTT GT	*Bam*H Ⅰ
coh Ⅱ-1-*F*	AAAAAGAAATACAAACTGCAGATTGAAATGGTTCTTGATAA	*Pst* Ⅰ
coh Ⅱ-1-*R*	CGCTCTAGAACTAGTGGATCCTTACTTGTCGTCATCGTCTT	*Bam*H Ⅰ
coh Ⅰ-2-*F*	AAAAAGAAATACAAACTGCAGGTAACAGCTACAATTGGAA AAGT	*Pst* Ⅰ
coh Ⅰ-2-*R*	CGCTCTAGAACTAGTGGATCCTTACTTGTCGTCATCGTCTTT GTAGTCGATAGTTACTGTTCCTGGGT	*Bam*H Ⅰ
coh Ⅰ-3-*F*	AAAAAGAAATACAAACTGCAGGAAATATCAATCGGCAAAG T	*Pst* Ⅰ
coh Ⅰ-3-*R*	CGCTCTAGAACTAGTGGATCCTTACTTGTCGTCATCGTCTTT GTAGTCTGTTATCTCACCCTCTGTGA	*Bam*H Ⅰ
*coh*Ⅲ-1-*F*	AAAAAGAAATACAAACTGCAGGGAGATACAACAGTACCTA C	*Pst* Ⅰ
*coh*Ⅲ-1-*R*	CGCTCTAGAACTAGTGGATCCTTACTTGTCGTCATCGTCTTT GT	*Bam*H Ⅰ
1-*bgaB-F*	AAAAAGAAATACAAACTGCAGATGAATGTGTTATCCTCAAT TTGTTACGG	*Pst* Ⅰ
1-*bgaB-R*	CGCTCTAGAACTAGTGGATCCTTACTTGTCGTCATCGTCTTT GTAGTCAACCTTCCCGGCTTCATCATGC	*Bam*H Ⅰ
2-*bgaB-F*	GTGCCGCGCGGCAGCCATATGATGAATGTGTTATCCTCAATT TGTTACGG	*Nde* Ⅰ
2-*bgaB-R*	ATCGCCCCATGTAGGGAATTCACTACCGCCACCTCCAACCT TCCCGGCTTCATCATGC	*Eco*R Ⅰ
doc Ⅰ-1-*F*	GGAGGTGGCGGTAGTGAATTCCCGAAAATTACCTATGGAGA	*Eco*R Ⅰ
doc Ⅰ-1-*R*	GTGGTGGTGGTGGTGCTCGAGAACGGGAAAACTCGTTATTA	*Xho* Ⅰ

*doc*Ⅱ-1-*F*	GGAGGTGGCGGTAGTGAATTCATAATGATGTGGGTAGGAGA	*Eco*RⅠ
*doc*Ⅱ-1-*R*	GTGGTGGTGGTGGTGCTCGAGTGCGTCGTAATCACTTGATG	*Xho*Ⅰ
*doc*Ⅰ-2-*F*	GGAGGTGGCGGTAGTGAATTCATAATGATGTGGGTAGGAGA	*Eco*RⅠ
*doc*Ⅰ-2-*R*	GTGGTGGTGGTGGTGCTCGAGGCTAAGAAGTTTCTTTTTTAGAAGAG	*Xho*Ⅰ
*doc*Ⅰ-3-*F*	GGAGGTGGCGGTAGTGAATTCGTAATTGTATATGGAGATTA	*Eco*RⅠ
*doc*Ⅰ-3-*R*	GTGGTGGTGGTGGTGCTCGAGGCTTGGAAGCTTACTTACCA	*Xho*Ⅰ
*doc*ⅢI-1-*F*	GGAGGTGGCGGTAGTGAATTCCCTACATGGGGCGATACAAA	*Eco*RⅠ
*doc*ⅢI-1-*R*	GTGGTGGTGGTGGTGCTCGAGCTAAACGTCTGCGTTAACCTTAC	*Xho*Ⅰ