SUPPLEMENTAL MATERIAL

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A Genetic System for *Clostridium ljungdahlii*: A Chassis for Autotrophic Production of Biocommodities and a Model Homoacetogen

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Table S1: List of primers/oligos used in this study.

Primers/Oligos	Sequences (5'-3')	Descriptions
pCL1polylinker F	AATTCCCGGGGATCCGTCGACCTGCA	Incorporate *Eco*R I-*Sma* I-*Bam*H I-*Sal* I-*Pst* I sites to pCL1
pCL1polylinder R	GGTCGACGGATCCCCGGG	Incorporate *Eco*R I-*Sma* I-*Bam*H I-*Sal* I-*Pst* I sites to pCL1
catP F	TCGAATTCCCACTAAGCGCTC	Amplify the chloramphenicol resistance cassette (*Eco*R I site underlined)
catP R	TCTAAGCTTAACACAAGGTCTTTGTAC	Amplify the chloramphenicol resistance cassette (*Hind* III site underlined)
fliA-1	TCTCTAGAATTGAAATAGACGTGGAC	Amplify *fliA* upstream region of homology (*Xba* I site underlined)
fliA-2	TCGAATTCTCCTAAGTTCATCTATC	Amplify *fliA* upstream region of homology (*Eco*R I site underlined)
fliA-3	TCTAAGCTTGTCAACTTCACAGCAGAGC	Amplify *fliA* downstream region of homology (*Hind* III site underlined)
fliA-4	TCTCTCGAGGTCATCCTGCTTAAATCC	Amplify *fliA* downstream region of homology (*Xho* I site underlined)
ermC F	TC*GAATTC*TAGATAAATCTCTCATATC	Amplify the *ermC* resistance cassette from pCL1 (*Eco*R I site italicized)
ermC R	TCT*AAGCTT*CGCTCATATTTATATAG	Amplify the *ermC* resistance cassette from pCL1 (*Hind* III site italicized)
adhE1-1	TCTCTAGATGAAAGTTACAAACGTAGAAG	Amplify *adhE1* upstream region of homology (*Xba* I site underlined)
adhE1-2	TCGAGCTC*TTATTA*AAGTTCTACCGATTCTACCTC	Amplify *adhE1* upstream region of homology (*Sac* I site underlined; stop codons italicized)
adhE1-3	CAAAAGCTTATACAGAAGGTAC	Amplify *adhE1* downstream region of homology (original *Hind* III site underlined)
adhE1-4	TTCTCGAGCTGCAATTCTAACCATACC	Amplify *adhE*1 downstream region of homology (*Xho* I site underlined)
adhE2-1	TCTCTAGACTATAGTTGATGCAGAACTTATG	Amplify *adhE2* upstream region of homology (*Xba* I site underlined)
adhE2-2	TCGAATTCACTTGTTCTTGAGTATAGCTAG	Amplify *adhE2* upstream region of homology (*Eco*R I site underlined)
adhE2-3	TCGGTCGACGAAGATATGCTAGAATAGCTGA	Amplify *adhE2* downstream region of homology (*Sal* I site underlined)
adhE2-4	TTCTCGAGTAACTATCTCATGTGCCTTATAA	Amplify *adhE2* downstream region of homology (*Xho* I site underlined)
adhE1+E2-1	TACGTTCTAGAATTAGAAAG	Amplify *adhE1* upstream region of homology (original *Xba* I site underlined)
adhE1+E2-2	TGGAATTCATCCACTTGTTCTTGAGTATATG	Amplify *adhE1* upstream region of homology (*Eco*R I site underlined)
ermC-adhE-F	TAT*GAGCTC*AAAGAGGGTTATAATGAACGAG	Amplify *ermC* coding region from pCL1 (*Sac* I site italicized)
ermC-adhE-R	TCT*AAGCTT*CGCTCATATTTATATAG	Amplify *ermC* coding region from pCL1 (*Hind* III site italicized)
adhE1-F	AC*CATATG*AAAGTTACAAACGTAGAAG	Amplify *adhE1* coding region (*Nde* I site italicized)
adhE1-R	AT*GGATCC*AATTACTTTTCTTCATCTTCTAC	Amplify *adhE1* coding region (*Bam*H I site italicized)