

Supplemental information

TableS1. Primers used in this study

Primer	Sequence(5'-3')	Application
<i>ccpA</i> -28a-F	CAGCCATATGATGAACACAGACGACACA	Expression of <i>ccpA</i>
<i>ccpA</i> -28a-R	CCGGATCCTTATTTACGAGTTGATTTACGCT	Expression of <i>ccpA</i>
<i>ccpA</i> -upF	TGAATCGAAGCTACCAAATCTATCG	Deletion of <i>ccpA</i>
<i>ccpA</i> -upR	AAGGATCCTGTGTCTGTGTTC	Deletion of <i>ccpA</i>
<i>ccpA</i> -dnF	AAGGATCCTGAAGACTTCGAAATC	Deletion of <i>ccpA</i>
<i>ccpA</i> -dnR	TCTTATTTACGAGTTGATTTACGCTCAC	Deletion of <i>ccpA</i>
Bi- <i>ccpA</i> -upF	TACCAAATCTATCGCGATTTAGTCTTTG	Deletion of <i>ccpA</i>
Bi- <i>ccpA</i> -upR	TATAAAGCTTCTGTGTCTGTGTTCG	Deletion of <i>ccpA</i>
Bi- <i>ccpA</i> -dnF	TATACCCGGGTGAGCGTAAATCAACTC	Deletion of <i>ccpA</i>
Bi- <i>ccpA</i> -dnR	AGCACCATAAAGATTGTCCATATCC	Deletion of <i>ccpA</i>
<i>manL</i> -upF	CCAGCACTAGGTCTGTCCTC	Deletion of <i>manL</i>
<i>manL</i> -upR	AAGGATCCAACCTGACTGATGAATGC	Deletion of <i>manL</i>
<i>manL</i> -dnF	AAGGATCCGTACCAAATGACTCTAAG	Deletion of <i>manL</i>
<i>manL</i> -dnR	ACAGCCATACCGCCTGCC	Deletion of <i>manL</i>
<i>lacA</i> -upF	AAGGATCCAATGATAATAGACATGTTAAGTCC	Deletion of <i>lacA</i>
<i>lacA</i> -upR	CTTTGCTATTGAGAATACAGAGGAGATG	Deletion of <i>lacA</i>
<i>lacA</i> -dnF	TGAAAGAACACGTGTAACATTGAGCC	Deletion of <i>lacA</i>
<i>lacA</i> -dnR	AAGGATCCAAGATGTGCTAATGCTCTG	Deletion of <i>lacA</i>
<i>galK</i> -upF	AAGGATCCGATTTGCTCTACTGAAATG	Deletion of <i>galK</i>
<i>galK</i> -upR	GAGAATCTCATAGCCCAATTCCTG	Deletion of <i>galK</i>
<i>galK</i> -dnF	AAGGATCCTTTTACATTGCAGAAGTAGC	Deletion of <i>galK</i>
<i>galK</i> -dnR	CTGGCTTAGAGAGATTGATGGTG	Deletion of <i>galK</i>
<i>EIIABC</i> -upF	AAGGATCCAAGCGCCATTTTCATC	Deletion of <i>EIIABC</i>
<i>EIIABC</i> -upR	ATGTGCGGATCTGATTGCTGAAG	Deletion of <i>EIIABC</i>
<i>EIIABC</i> -dnF	GGAGAG AGGAACACTGCAAG	Deletion of <i>EIIABC</i>

<i>EIIABC</i> -dnR	AAGGATCCAGCAAATGATCAAACGG	Deletion of <i>EIIABC</i>
<i>hprK</i> -upF	TGGTGATTTTCTCTGTATGCGACGATC	Deletion of <i>hprK</i>
<i>hprK</i> -upR	ATATGGATCCAGACATTCCCTGCTC	Deletion of <i>hprK</i>
<i>hprK</i> -dnF	ATATGGATCCA GTAGCTTTTA CAGTTGGTC	Deletion of <i>hprK</i>
<i>hprK</i> -dnR	AGACAGCCACTGAGATACACGAAC	Deletion of <i>hprK</i>
RT- <i>lacD</i> , <i>lacC</i> -F	TCTGCTTCTTGGTGTTGAGC	RT-PCR
RT- <i>lacD</i> , <i>lacC</i> -R	ACAAACAACACTACATGTAAGGACGG	RT-PCR
RT- <i>lacC</i> , <i>lacB</i> -F	TGGATGGGTTTCATAGTGACTG	RT-PCR
RT- <i>lacC</i> , <i>lacB</i> -R	TGGTGAATTGCTTATGTGCG	RT-PCR
RT- <i>lacB</i> , <i>lacA</i> -F	TTGGTAACGATATGGTCAACATC	RT-PCR
RT- <i>lacB</i> , <i>lacA</i> -R	CAGATTGTTAGCTGGTTTTGTC	RT-PCR
RT- <i>lacA</i> , <i>lacX</i> -F	AATCTCAAACCTGCAGCATC	RT-PCR
RT- <i>lacA</i> , <i>lacX</i> -R	AGAAGACAAGAAAACGTTTCGC	RT-PCR
RT- <i>lacX</i> , <i>EIIC</i> -F	TTTTGTAGCACAATCACCATCC	RT-PCR
RT- <i>lacX</i> , <i>EIIC</i> -R	ACAGAAAGCAAATGATCAAACG	RT-PCR
RT- <i>EIIC</i> , <i>EIIB</i> -F	TGTCAAGATGATCAGCATGATG	RT-PCR
RT- <i>EIIC</i> , <i>EIIB</i> -R	TCCGTATTCCTGCAATGAGC	RT-PCR
RT- <i>EIIB</i> , <i>EIIA</i> -F	AGAGCACTCTTGATTTGGTGAC	RT-PCR
RT- <i>EIIB</i> , <i>EIIA</i> -R	AATTCGAGCTCAAGCCAGAC	RT-PCR
RT- <i>EIIA</i> , <i>lacR</i> -F	ACAAACTATTGACAGCGCTATCAC	RT-PCR
RT- <i>EIIA</i> , <i>lacR</i> -R	TGTTTGGGATAAGATATCGTTCC	RT-PCR
<i>gal</i> -p- <i>Bam</i> HI	AAGGATCCAAGCGCCATTTCACTTC	Construction of <i>Pgal-luc</i>
<i>gal</i> -p- <i>Nhe</i> I	AAAAAGCTAGCATTGTGACCAATTCTCTCCC	Construction of <i>Pgal-luc</i>
<i>gal</i> -p-deF	TCGGATCAGGTACCACAACAG	Construction of <i>Pgal-luc</i>
<i>manL</i> -p- <i>Bam</i> HI	TTGGATCCAATACTCATTATTGTTTTTCC	Construction of <i>PmanL-luc</i>
<i>manL</i> -p- <i>Nhe</i> I	TATAAGCTAGCTTCTTAGACATTTTTTACTCC	Construction of <i>PmanL-luc</i>
<i>manL</i> -p-deF	ACATAAGCAGCATTCCAAGGC	Construction of <i>PmanL-luc</i>
qPCR- <i>EIIB</i> -F	GCAGCGATTGGTGTGAAG	qPCR of <i>EIIB</i>

qPCR- <i>EIIB</i> -R	GAGTGCTCTTGAGGAAGAATTG	qPCR of <i>EIIB</i>
qPCR- <i>16s</i> -F	CGATACATAGCCGACCTGAGAG	qPCR of <i>16SrRNA</i>
qPCR- <i>16s</i> -R	TCCGTCCATTGCCGAAGATTC	qPCR of <i>16SrRNA</i>
qPCR- <i>manL</i> -F	AATGGTTGTTGCCGTTGG	qPCR of <i>manL</i>
qPCR - <i>manL</i> -R	AAGGTTGAGGTAGATAAGGGCG	qPCR of <i>manL</i>
<i>galp</i> -F EMSA	biotin-TCGGATGCTTTTTGTAAAAATCAATC	EMSA
<i>galp</i> -R EMSA	TTCATCACTTCTCCTTTTTTGTTC	EMSA
<i>Ngalp</i> -F EMSA	TCGGATGCTTTTTGTAAAAATCAATC	EMSA
<i>Ngalp</i> -R EMSA	TTCATCACTTCTCCTTTTTTGTTC	EMSA
<i>manLin</i> -F EMSA	biotin-TAACCAA GCTAGCCGTG TCATG	EMSA
<i>manLin</i> -R EMSA	AGTTCCTTCTGGGATAGCTGC	EMSA
<i>manLp</i> -F EMSA	biotin-CTTCTTGGGCTTCAGCTATAAATTC	EMSA
<i>manLp</i> -R EMSA	CTATTATTATAAAACGTTTTTCATGAAAAATGC	EMSA
<i>galp-cre</i> -F EMSA	CATAATGATATAATTAATTAACGAACAAAAAG AAACAAAAAAGGAGAAGTGATGAA	EMSA
<i>galp-cre</i> -R EMSA	GTTTCGTTAATTAATTATATCATTATGATAGTTT GTTTTGTTATTTTTTGTTTATTTG	EMSA
<i>com box</i> -F-EMSA	biotin-TTGAGAAAATGACATTTTCAGGAATAAA AAATGACATTTTCAGGGAAAGATG	EMSA
<i>com box</i> -R-EMSA	CATCTTCCCTGAAATGTCATTTTTTATTCCTG AAATGTCATTTTCTCAA	EMSA
CAT- <i>ScaI</i>	TAAATAGTACTATGAACTTTAATAAAATTGAT TTAG	Construction of pFW5- <i>luc-cat-manL</i>
CAT- <i>SalI</i>	TATATGTCGACTTATAAAAGCCAGTCATTAG	Construction of pFW5- <i>luc-cat-manL</i>
pFW5- <i>luc-ScaI</i>	TATATAGTACTCCTCCTCACTATTTTGATTAGT ACC	Construction of pFW5- <i>luc-cat-manL</i>
pFW5- <i>luc-SalI</i>	ATTTAGTCGACTGAAAAAATGGTGGAAC	Construction of

pFW5-*luc-cat-manL*

Table S2. The *gal-luc* reporter gene expression in the wild-type strain grown in TY broth supplemented with different sugars

Supplemented sugars^a	RLU ($\times 10^6$)
Galactose (0)	8.29 \pm 0.57
Galactose (0.025%, w/v)	29.43 \pm 0.47
Galactose (0.05%, w/v)	27.55 \pm 2.06
Galactose (0.1%, w/v)	21.81 \pm 1.10
Galactose (0.5%, w/v)	12.56 \pm 1.99
Glucose	1.06 \pm 0.12
Glucose+Galactose	0.93 \pm 0.18
Fructose	1.60 \pm 0.09
Fructose+Galactose	5.43 \pm 0.47
Mannose	0.93 \pm 0.14
Mannose+Galactose	0.92 \pm 0.11
Sucrose	1.05 \pm 0.04
Sucrose+Galactose	4.33 \pm 0.45
Maltose	0.98 \pm 0.03
Maltose+Galactose	2.65 \pm 0.41

^a: The concentrations of supplemented sugars are all 0.5% (w/v) unless indicated;

RLU: relative light unit;

Data are the average of three independent cultures