

Figure S1

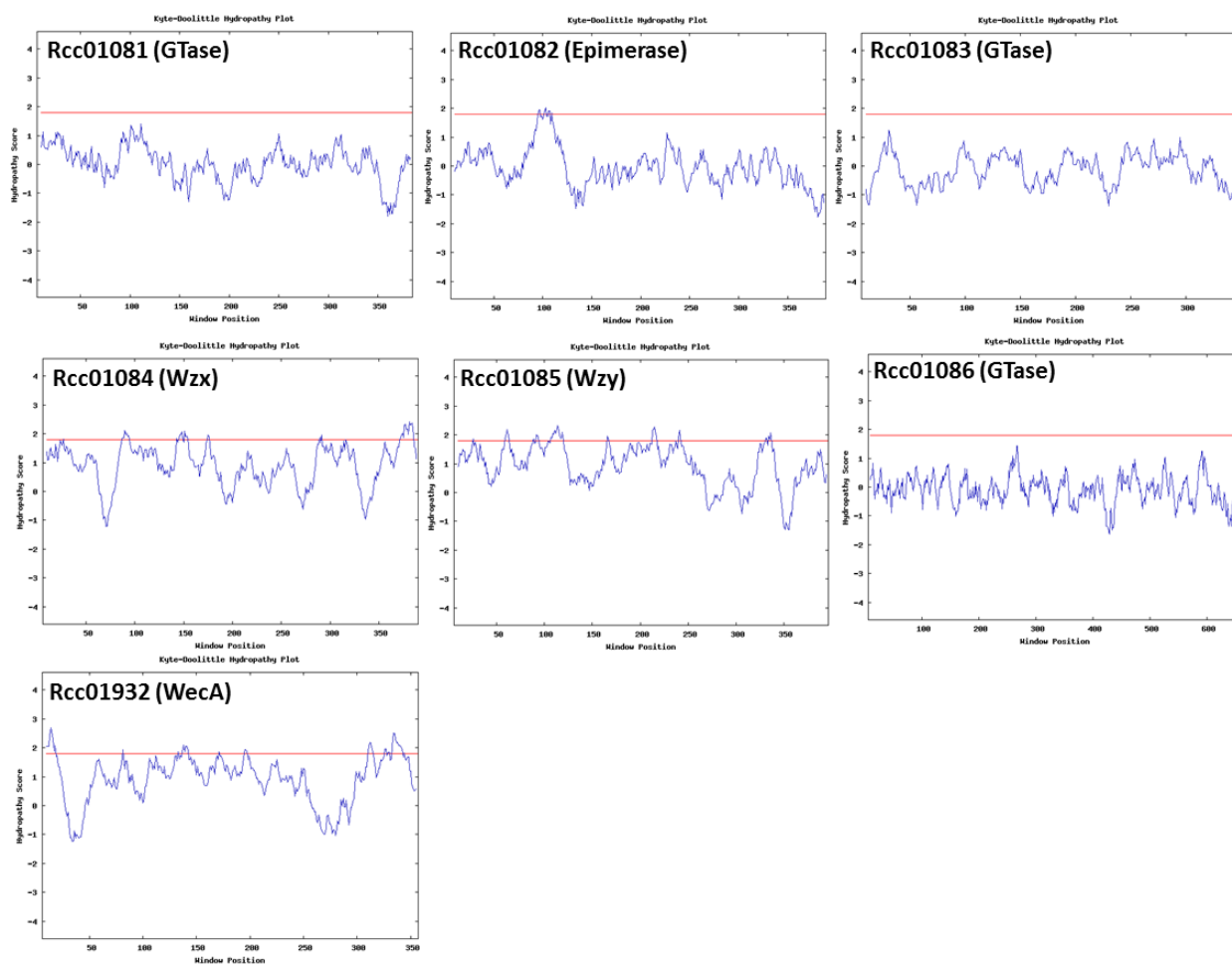


Figure S2

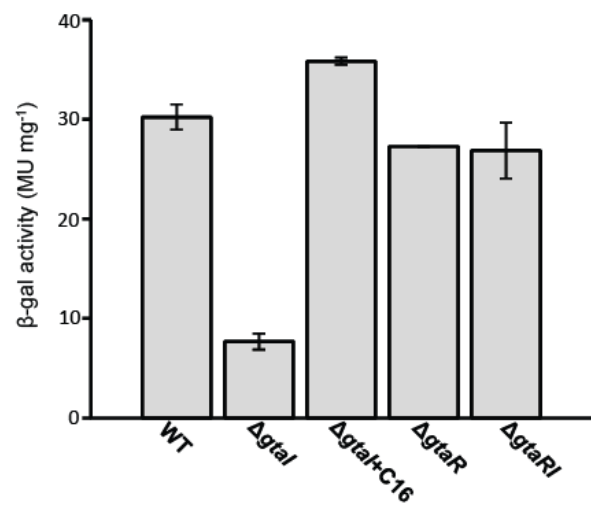


Figure S3

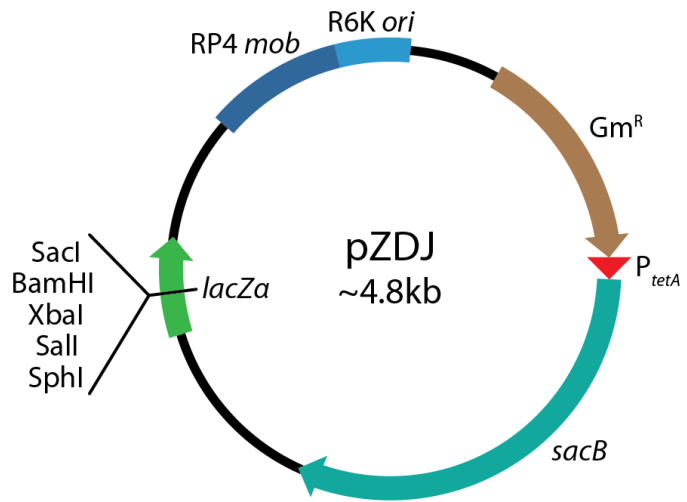


Figure S4

Table S1. Primers and plasmids used in this study

Primer Name	sequence 5' - 3'	restriction site
1081_up_for	AATGACGTCGACCCGAGCGTTGCCAGTGCG	Sall
1081_up_rev	TTACCGAAGCTTGCCGTCGGTGTGCAGAC	HindIII
1081_down_for	CGTTACAAGCTTTTCGGGCTTACGGCCTG	HindIII
1081_down_rev	ATTACAGAGCTCAATCGACAGCGCATAGCC	SacI
1081_seq_for	CGCGGGTGTCTTGAC	N/A
1081_seq_rev	GCAAGGGTGGCAAGATT	N/A
1081_comp_for	CGTTACAAGCTTTCAGCCCTGCGCCGCTTC	NcoI
1081_comp_rev	CGTTACAAGCTTTCAGCCCTGCGCCGCTTC	HindIII
1081_lacZ_for	CGACGGCGACCTGCAGGGGGTGGGAA	PstI
1081_lacZ_rev	TGGCAAGCGCGAGATCTGTGTTGCA	BglII
1932_up_for	TAGCAGAGCTCTTGGGGTGATCGTGATGA	SacI
1932_up_rev	GTACAAAGCTTAAGACTGACGACCAGAGA	HindIII
1932_down_for	GTAGACAAGCTTGGGATCACCTTGCGCTG	HindIII
1932_down_rev	GTACATCTAGACCATCAGCTTGCCGGTGGG	XbaI
1932_comp_for	TAGGTGGCCATGGTCCACTCGGCT	NcoI
1932_comp_rev	TCAGGCTCCGACATCGCAAGCTTGGGCAT	HindIII
tetAp_for	GAATTCCAATTGATGATTCTCCGCCAGCAT	ApalI
tetAp_rev	GAATTCGTGCACCCTCCGGACCAGC	MfeI
sacB:accC1_for	GAATTCGTGCACATGAACATCAAAAAGTTTGC	MfeI
sacB:accC1_rev	GAATTCCAATTGTTAGGTGGCGGTACTTG	ApaLI
Plasmid Name	Fragment/description	Reference
pUC81UP	upstream flank of <i>rcc01081</i> as Sall-HindIII frag; Amp^R	This Study
pUC81DOWN	downstream flank of <i>rcc01081</i> as HindIII-SacI; Amp^R	This Study
pZDJΔ1081	<i>rcc01081</i> upstream+downstream ligated into suicide vector; Gm^R	This Study
pIND1081	<i>rcc01081</i> ORF as NcoI-HindIII frag; Km^R	This Study
pUC32UP	upstream flank of <i>rcc01932</i> as SacI-HindIII frag; Amp^R	This Study
pUC32DOWN	downstream flank of <i>rcc01932</i> as HindIII-XbaI frag; Amp^R	This Study
pZDJΔ1932	<i>rcc01932</i> upstream+downstream ligated into suicide vector; Gm^R	This Study

pIND1932	<i>rcc01932</i> ORF as NcoI-HindIII frag; Km^R	This Study
pUC19	general cloning vector; lacZ α ; Amp^R	Invitrogen
pZJD29a	suicide vector; contains <i>sacB</i> gene; Gm^R	Unpublished
pZDJ	pZJD29a; <i>puc</i> promoter replaced with <i>tetA</i> promoter Gm^R	This Study
pIND4	Inducible expression vector; Km^R	Ind et al., 2009
pXC01081	~1500bp 5' of ORF <i>rcc01081</i> fused to lacZ; translationally in frame; Tc^R	This Study
pXCA601	promoter probe vector; for construction of promoter::lacZ fusions; Tc^R	(Adams et al., 1989)
<i>R. capsulatus</i> strain	Description	Reference
B10	wild type isolate; encapsulated	Weaver et al., 1975
DE442	RcGTA overproducer; believed to originate from Y262	Yen et al., 1979
37b4	wild type isolate; non-encapsulated	(Weckesser et al., 1972)
$\Delta gtaI$	markerless deletion of <i>gtaI</i> gene (<i>rcc00329</i>); B10 background	Leung et al., 2012
$\Delta gtaR$	markerless deletion of <i>gtaR</i> gene (<i>rcc00328</i>); B10 background	Leung et al., 2012
$\Delta gtaRI$	double deletion of <i>gtaI</i> and <i>gtaR</i> genes; B10 background	Leung et al., 2012
$\Delta 1081$	markerless deletion of <i>rcc01081</i> ; B10 background	This Study
$\Delta gtaI/\Delta 1081$	double deletion of <i>gtaI</i> and <i>rcc01081</i> ; B10 background	This Study
$\Delta 1932$	markerless deletion of <i>rcc01932</i> ; B10 background	This Study
$\Delta 1932/\Delta 1081$	markerless deletion of <i>rcc01932</i> and <i>rcc01081</i> ; B10 background	This Study

Table S2. Growth Curve Data: A statistical measure of correlation using a linear regression analysis.

recipient capability assay	
Number of XY pairs	7
Pearson r	0.9501
95% conf. interval	0.693- 0.992
p-value	0.00104
Correlation significant? ($\alpha=0.05$)	yes
R squared	0.9028
adsorption assay	
Number of XY pairs	7
Pearson r	0.9571
95% conf. interval	0.731- 0.993
p-value	0.000715
Correlation significant? ($\alpha=0.05$)	yes
R squared	0.9162

Table S3. One-way ANOVA results for comparison of RcGTA recipient ability

Strain 1	Strain 2	p-value
WT B10	<i>ΔgtaI</i>	0.0000558
WT B10	<i>ΔgtaI</i> + C16	0.9993916
WT B10	<i>ΔgtaR</i>	1
WT B10	<i>ΔgtaRI</i>	1
WT B10	<i>Δ108I</i>	0.0000936
WT B10	<i>Δ108I</i> [p1081]	0.0324655
WT B10	<i>ΔgtaI/Δ108I</i>	0.0001958
WT B10	<i>ΔgtaI/Δ108I</i> + C16	0.0000894
WT B10	<i>Δ1932</i>	0.000061
WT B10	<i>Δ1932</i> [p1932]	0.4535225
WT B10	<i>Δ108I/Δ1932</i>	0.0000385
WT B10	37b4	0.0000333
<i>Δ108I</i>	<i>Δ108I</i> [p1081]	0.492496

Table S4. One-way ANOVA results for comparison of RcGTA adsorption ability

Strain 1	Strain 2	p-value
No Cells	WT B10	0
No Cells	<i>Δgtal</i>	0.3630966
No Cells	<i>Δgtal</i> + C16	0
No Cells	<i>Δgtar</i>	0
No Cells	<i>ΔgtarI</i>	0
No Cells	<i>Δ1081</i>	0.0332213
No Cells	<i>Δ1081</i> [p1081]	0
No Cells	<i>Δgtal/Δ1081</i>	1E-07
No Cells	<i>Δgtal/Δ1081</i> + C16	0
No Cells	<i>Δ1932</i>	0.9930653
No Cells	<i>Δ1932</i> [p1932]	0
No Cells	<i>Δ1081/Δ1932</i>	0.7869396
No Cells	37b4	0.9982706
<i>Δ1081</i>	<i>Δ1081</i> [p1081]	0.0000007
<i>Δgtal</i>	<i>Δgtal</i> + C16	0.0000001

Table S5. One-way ANOVA results for comparison of carbohydrate production

Strain 1	Strain 2	p-value
WT B10	<i>Δgtal</i>	0
WT B10	<i>Δgtal</i> + C16	2E-07
WT B10	<i>ΔgtaR</i>	6.84E-05
WT B10	<i>ΔgtaRI</i>	0.165229
WT B10	<i>Δ1081</i>	0
WT B10	<i>Δ1081</i> [p1081]	0.005464
WT B10	<i>Δgtal/Δ1081</i>	0
WT B10	<i>Δgtal/Δ1081</i> + C16	0
WT B10	<i>Δ1932</i>	0
WT B10	<i>Δ1932</i> [p1932]	0.00004
WT B10	<i>Δ1081/Δ1932</i>	0
WT B10	37b4	0
<i>Δgtal</i>	<i>Δgtal</i> + C16	0
<i>Δ1081</i>	<i>Δ1081</i> [p1081]	0
<i>Δ1932</i>	<i>Δ1932</i> [p1932]	0

Table S6. One-way ANOVA results for comparison of β -galactosidase activities

Strain 1	Strain 2	p-value
WT B10	<i>Δgtal</i>	9.75E-05
WT B10	<i>Δgtal</i> + C16	0.053569
WT B10	<i>Δgtar</i>	0.353396
WT B10	<i>ΔgtarI</i>	0.266044
<i>Δgtal</i>	<i>Δgtal</i> + C16	3.27E-05

Table S7. One-way ANOVA results for comparison of RcGTA adsorption inhibition ability

Strain 1	Strain 2	p-value
No Cells	WT	0
WT	WT extracts	1.3E-06
WT	<i>Δgtal</i> extracts	0.881878
WT	<i>Δ1932</i> extracts	0.999761