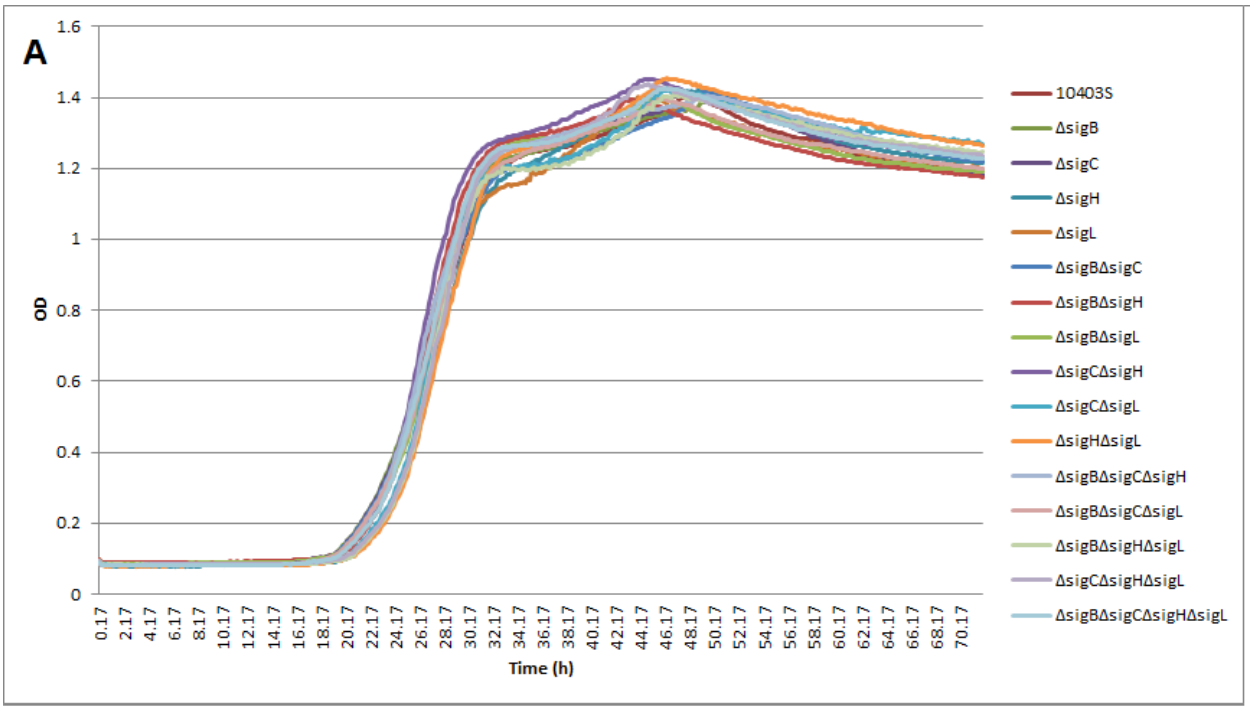
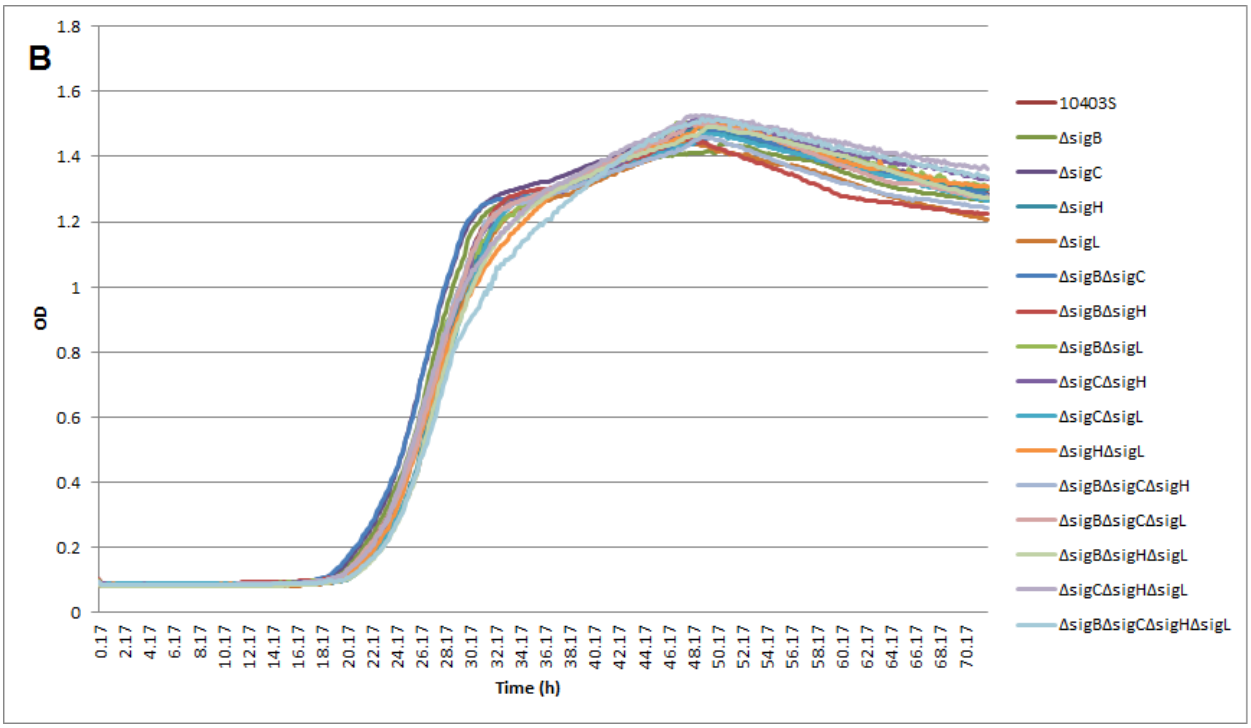
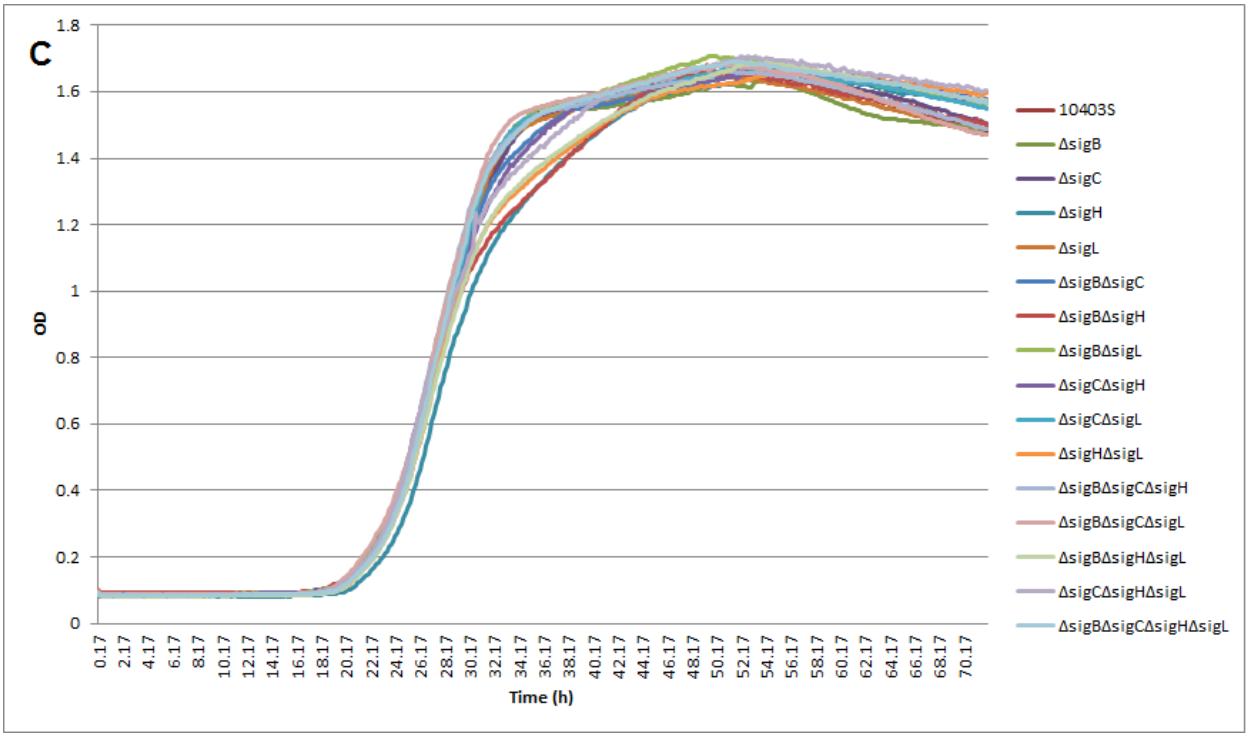
FIGURE S1 Growth of the parental strain10403S and 15 isogenic mutants at 25°C in (A) DM with 10 mM glucose, (B) DM with 10 mM mannose, (C) DM with 10 mM cellobiose and (D) DM with 10 mM glycerol. The average OD values from the replicates were used to generate the growth curve.




B
OD
Time (h)
10403S
ΔsigB
ΔsigC
ΔsigH
ΔsigL
ΔsigBΔsigC
ΔsigBΔsigH
ΔsigBΔsigL
ΔsigCΔsigH
ΔsigCΔsigL
ΔsigHΔsigL
ΔsigBΔsigCΔsigH
ΔsigBΔsigCΔsigL
ΔsigBΔsigHΔsigL
ΔsigCΔsigHΔsigL
ΔsigBΔsigCΔsigHΔsigL


C
OD
Time (h)
10403S
ΔsigB
ΔsigC
ΔsigH
ΔsigL
ΔsigBΔsigC
ΔsigBΔsigH
ΔsigBΔsigL
ΔsigCΔsigH
ΔsigCΔsigL
ΔsigHΔsigL
ΔsigBΔsigCΔsigH
ΔsigBΔsigCΔsigL
ΔsigBΔsigHΔsigL
ΔsigCΔsigHΔsigL
ΔsigBΔsigCΔsigHΔsigL

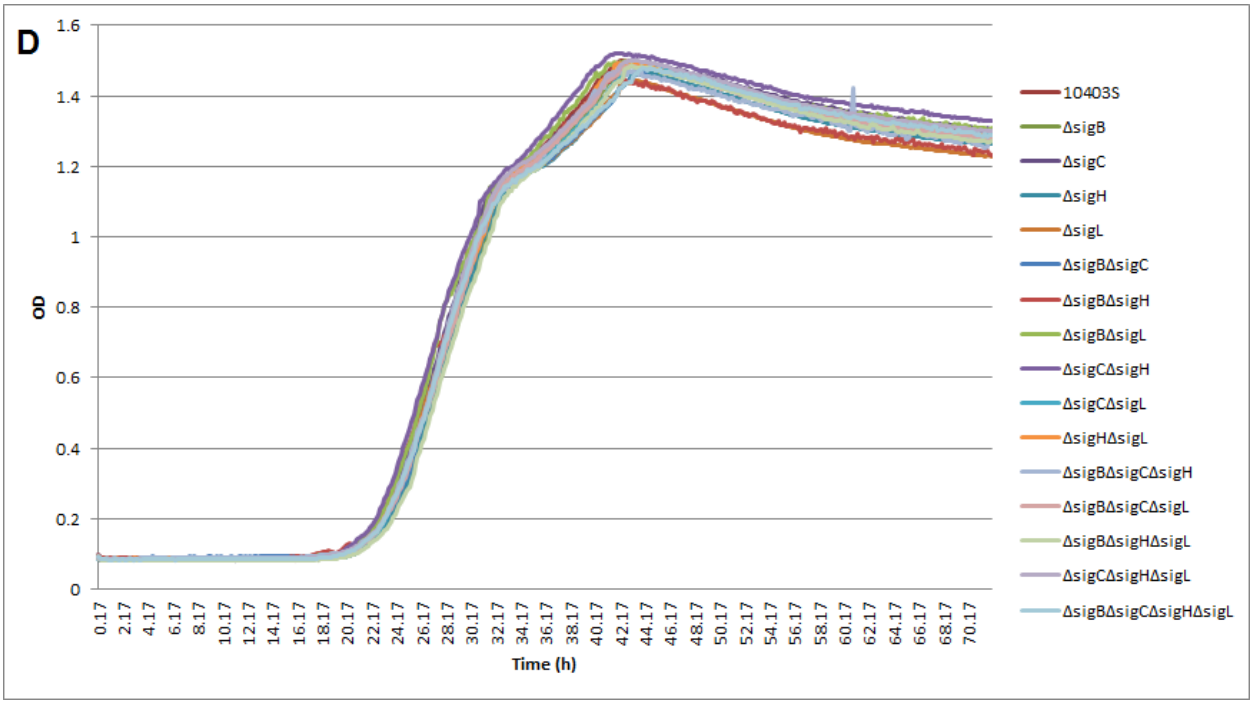
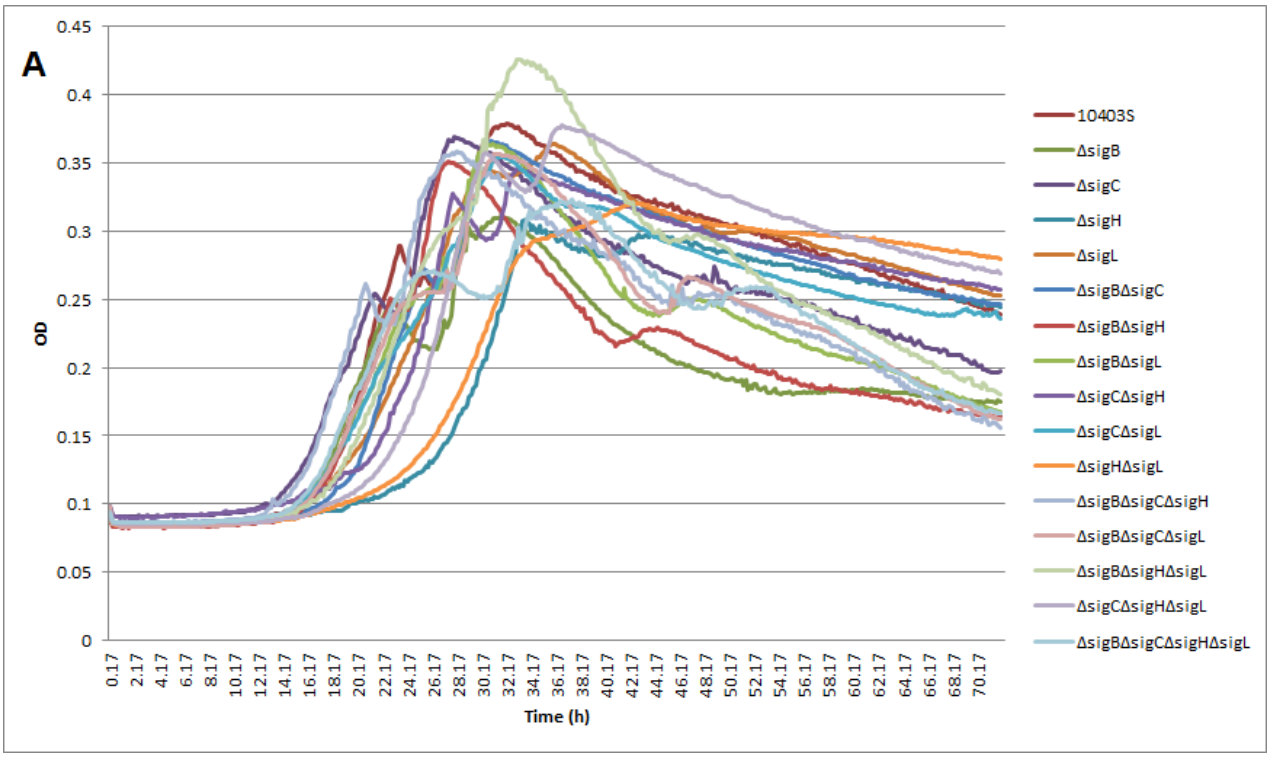
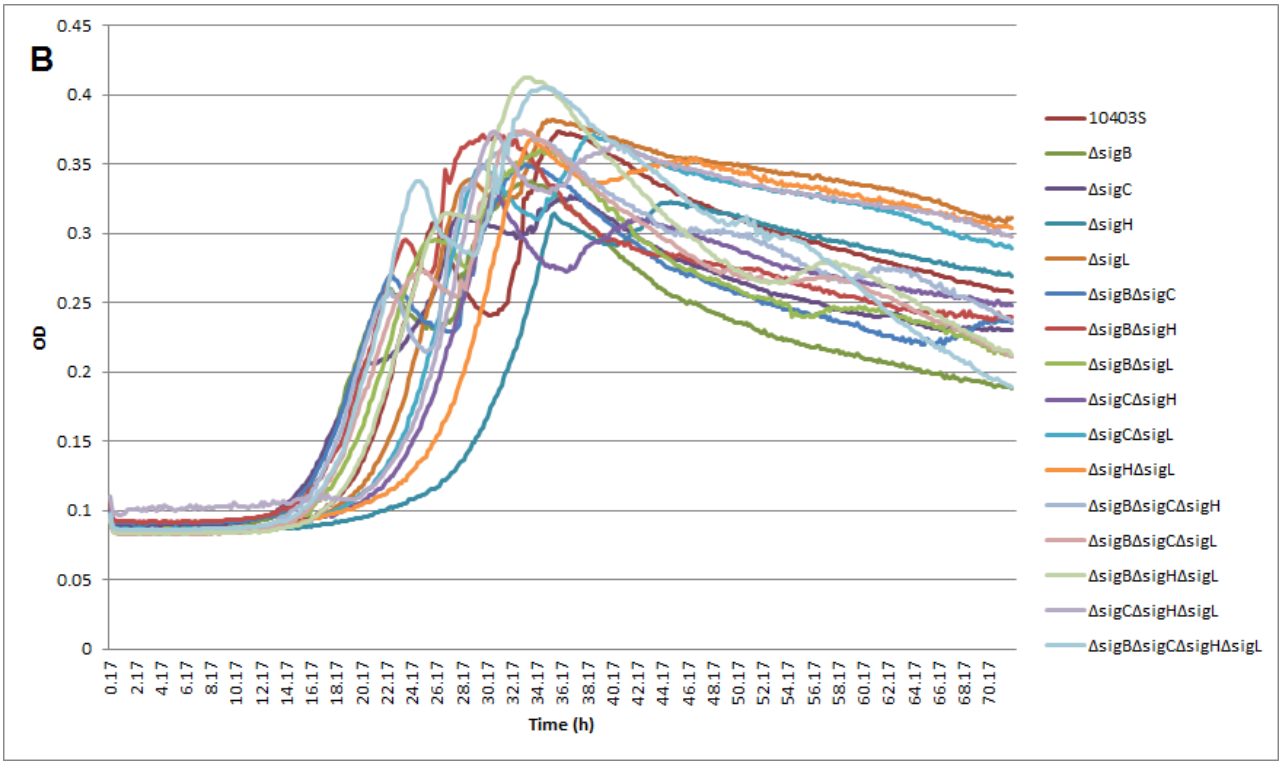
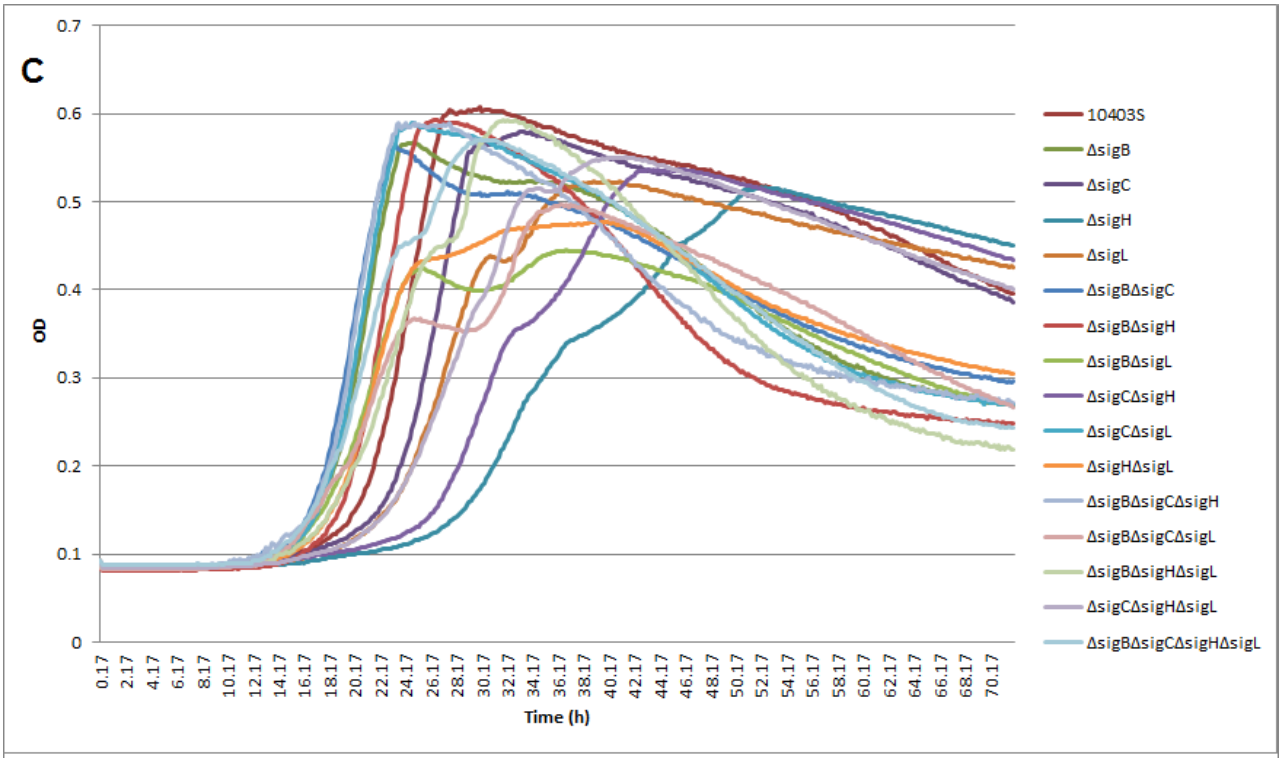
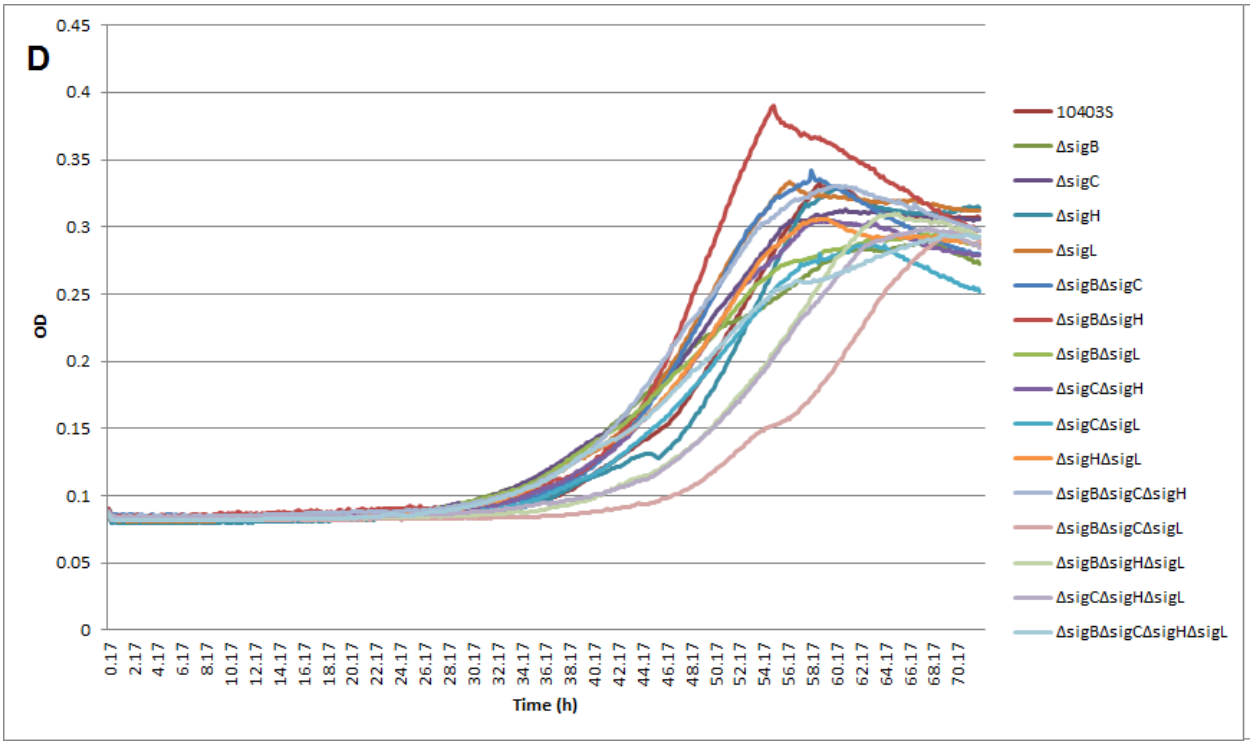

D
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
od
0.17
2.17
4.17
6.17
8.17
10.17
12.17
14.17
16.17
18.17
20.17
22.17
24.17
26.17
28.17
30.17
32.17
34.17
36.17
38.17
40.17
42.17
44.17
46.17
48.17
50.17
52.17
54.17
56.17
58.17
60.17
62.17
64.17
66.17
68.17
70.17
Time (h)
10403S
ΔsigB
ΔsigC
ΔsigH
ΔsigL
ΔsigBΔsigC
ΔsigBΔsigH
ΔsigBΔsigL
ΔsigCΔsigH
ΔsigCΔsigL
ΔsigHΔsigL
ΔsigBΔsigCΔsigH
ΔsigBΔsigCΔsigL
ΔsigBΔsigHΔsigL
ΔsigCΔsigHΔsigL
ΔsigBΔsigCΔsigHΔsigL

FIGURE S2 Growth of the parental strain10403S and 15 isogenic mutants at 37°C in (A) DM with 10 mM glucose, (B) DM with 10 mM mannose, (C) DM with 10 mM cellobiose and (D) DM with 10 mM glycerol. The average OD values from the replicates were used to generate the growth curve.




B
OD
Time (h)
10403S
ΔsigB
ΔsigC
ΔsigH
ΔsigL
ΔsigBΔsigC
ΔsigBΔsigH
ΔsigBΔsigL
ΔsigCΔsigH
ΔsigCΔsigL
ΔsigHΔsigL
ΔsigBΔsigCΔsigH
ΔsigBΔsigCΔsigL
ΔsigBΔsigHΔsigL
ΔsigCΔsigHΔsigL
ΔsigBΔsigCΔsigHΔsigL


C
OD
Time (h)
10403S
ΔsigB
ΔsigC
ΔsigH
ΔsigL
ΔsigBΔsigC
ΔsigBΔsigH
ΔsigBΔsigL
ΔsigCΔsigH
ΔsigCΔsigL
ΔsigHΔsigL
ΔsigBΔsigCΔsigH
ΔsigBΔsigCΔsigL
ΔsigBΔsigHΔsigL
ΔsigCΔsigHΔsigL
ΔsigBΔsigCΔsigHΔsigL


D
OD
Time (h)
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
0.17
2.17
4.17
6.17
8.17
10.17
12.17
14.17
16.17
18.17
20.17
22.17
24.17
26.17
28.17
30.17
32.17
34.17
36.17
38.17
40.17
42.17
44.17
46.17
48.17
50.17
52.17
54.17
56.17
58.17
60.17
62.17
64.17
66.17
68.17
70.17
10403S
ΔsigB
ΔsigC
ΔsigH
ΔsigL
ΔsigBΔsigC
ΔsigBΔsigH
ΔsigBΔsigL
ΔsigCΔsigH
ΔsigCΔsigL
ΔsigHΔsigL
ΔsigBΔsigCΔsigH
ΔsigBΔsigCΔsigL
ΔsigBΔsigHΔsigL
ΔsigCΔsigHΔsigL
ΔsigBΔsigCΔsigHΔsigL

SUPPLEMENTAL TABLE 1 Optical density-derived growth parameters of *L. monocytogenes* 10403S and mutants at 25°C[a]

Carbon Source	Strain	μ_{max} [OD increase/hour]	λ [hour]	Maximum OD
Glucose	Δ*sigB*	0.119±0.004^{ABC}	20.404±0.251^{CDE}	1.380±0.029
	Δ*sigB*Δ*sigC*	0.119±0.014^{ABC}	19.402±0.479^{E}	1.357±0.073
	Δ*sigB*Δ*sigC*Δ*sigH*	0.116±0.009^{BC}	20.488±0.257^{CDE}	1.376±0.014
	Δ*sigB*Δ*sigC*Δ*sigH*Δ*sigL*	0.134±0.004^{ABC}	21.812±0.468^{AB}	1.392±0.024
	Δ*sigB*Δ*sigC*Δ*sigL*	0.114±0.007^{C}	20.575±0.306^{CDE}	1.392±0.014
	Δ*sigB*Δ*sigH*	0.140±0.004^{A}	21.155±0.253^{ABC}	1.377±0.009
	Δ*sigB*Δ*sigH*Δ*sigL*	0.131±0.012^{ABC}	21.896±0.714^{A}	1.341±0.023
	Δ*sigB*Δ*sigL*	0.125±0.008^{ABC}	21.143±0.308^{ABC}	1.375±0.016
	Δ*sigC*	0.113±0.009^{C}	20.079±0.383^{CDE}	1.403±0.025
	Δ*sigC*Δ*sigH*	0.131±0.015^{ABC}	20.656±0.556^{BCD}	1.397±0.015
	Δ*sigC*Δ*sigH*Δ*sigL*	0.132±0.004^{ABC}	21.966±0.255^{A}	1.393±0.011
	Δ*sigC*Δ*sigL*	0.138±0.006^{AB}	21.843±0.317^{A}	1.390±0.049
	Δ*sigH*	0.116±0.009^{BC}	20.810±0.549^{ABCD}	1.407±0.022
	Δ*sigH*Δ*sigL*	0.129±0.012 ^{ABC}	21.754±0.487^{AB}	1.359±0.033
	Δ*sigL*	0.128±0.010^{ABC}	21.824±0.471^{AB}	1.372±0.022
	10403S	0.117±0.001^{ABC}	19.817±0.813^{DE}	1.338±0.069
Mannose	Δ*sigB*	0.128±0.005^{A}	20.989±0.247^{ABC}	1.419±0.038
	Δ*sigB*Δ*sigC*	0.127±0.005^{A}	20.549±0.291^{C}	1.426±0.029
	Δ*sigB*Δ*sigC*Δ*sigH*	0.128±0.005^{A}	21.009±0.118^{ABC}	1.425±0.032
	Δ*sigB*Δ*sigC*Δ*sigH*Δ*sigL*	0.099±0.008^{C}	20.950±0.215^{ABC}	1.499±0.014
	Δ*sigB*Δ*sigC*Δ*sigL*	0.126±0.011^{A}	20.724±0.752^{BC}	1.448±0.012
	Δ*sigB*Δ*sigH*	0.126±0.009^{A}	20.999±0.203^{ABC}	1.425±0.005
	Δ*sigB*Δ*sigH*Δ*sigL*	0.114±0.004^{ABC}	21.234±0.351^{ABC}	1.446±0.011
	Δ*sigB*Δ*sigL*	0.123±0.010^{A}	20.858±0.150^{ABC}	1.419±0.032
	Δ*sigC*	0.130±0.003^{A}	20.628±0.412^{C}	1.446±0.015
	Δ*sigC*Δ*sigH*	0.116±0.011^{ABC}	20.713±0.555^{BC}	1.444±0.016
	Δ*sigC*Δ*sigH*Δ*sigL*	0.115±0.009^{ABC}	21.139±0.706^{ABC}	1.475±0.013
	Δ*sigC*Δ*sigL*	0.119±0.014^{AB}	21.208±0.494^{ABC}	1.445±0.039
	Δ*sigH*	0.128±0.005^{A}	21.822±0.352^{A}	1.438±0.008
	Δ*sigH*Δ*sigL*	0.099±0.006^{BC}	20.602±0.052^{C}	1.485±0.034
	Δ*sigL*	0.128±0.006^{A}	21.658±0.162^{AB}	1.421±0.012
	10403S	0.121±0.004^{A}	20.781±0.098^{BC}	1.444±0.022
Cellobiose	Δ*sigB*	0.153±0.004^{A}	21.865±0.066	1.639±0.030
	Δ*sigB*Δ*sigC*	0.148±0.006^{A}	21.754±0.115	1.643±0.018
	Δ*sigB*Δ*sigC*Δ*sigH*	0.150±0.010^{A}	21.639±0.432	1.641±0.023
	Δ*sigB*Δ*sigC*Δ*sigH*Δ*sigL*	0.149±0.007^{A}	21.201±1.222	1.658±0.010

	Δ*sigB*Δ*sigC*Δ*sigL*	0.148±0.010^{A}	21.401±0.245	1.663±0.008
	Δ*sigB*Δ*sigH*	0.112±0.012^{C}	20.670±0.408	1.634±0.016
	Δ*sigB*Δ*sigH*Δ*sigL*	0.133±0.014^{ABC}	21.414±0.213	1.630±0.014
	Δ*sigB*Δ*sigL*	0.152±0.010^{A}	21.407±0.141	1.645±0.019
	Δ*sigC*	0.152±0.010^{A}	21.847±0.530	1.651±0.007
	Δ*sigC*Δ*sigH*	0.121±0.009^{BC}	21.149±0.285	1.645±0.021
	Δ*sigC*Δ*sigH*Δ*sigL*	0.141±0.013^{AB}	21.657±0.571	1.654±0.010
	Δ*sigC*Δ*sigL*	0.152±0.008^{A}	21.748±0.088	1.661±0.027
	Δ*sigH*	0.113±0.006^{C}	21.384±0.222	1.629±0.012
	Δ*sigH*Δ*sigL*	0.120±0.002^{BC}	20.944±0.271	1.616±0.012
	Δ*sigL*	0.154±0.006^{A}	21.814±0.220	1.645±0.010
	10403S	0.151±0.007^{A}	21.803±0.114	1.645±0.012
Glycerol	Δ*sigB*	0.108±0.005	21.561±0.210	1.498±0.044
	Δ*sigB*Δ*sigC*	0.107±0.004	21.314±0.476	1.496±0.041
	Δ*sigB*Δ*sigC*Δ*sigH*	0.108±0.004	21.359±0.350	1.507±0.039
	Δ*sigB*Δ*sigC*Δ*sigH*Δ*sigL*	0.106±0.013	21.352±0.295	1.480±0.014
	Δ*sigB*Δ*sigC*Δ*sigL*	0.101±0.009	21.100±0.429	1.494±0.055
	Δ*sigB*Δ*sigH*	0.104±0.004	20.953±0.212	1.481±0.026
	Δ*sigB*Δ*sigH*Δ*sigL*	0.106±0.002	21.464±0.555	1.501±0.027
	Δ*sigB*Δ*sigL*	0.107±0.001	21.012±0.307	1.500±0.034
	Δ*sigC*	0.106±0.004	21.281±0.248	1.494±0.048
	Δ*sigC*Δ*sigH*	0.104±0.004	20.474±0.300	1.525±0.067
	Δ*sigC*Δ*sigH*Δ*sigL*	0.111±0.003	21.489±0.097	1.470±0.054
	Δ*sigC*Δ*sigL*	0.104±0.005	21.334±0.296	1.517±0.030
	Δ*sigH*	0.107±0.004	21.231±0.420	1.488±0.032
	Δ*sigH*Δ*sigL*	0.104±0.002	20.961±0.408	1.520±0.033
	Δ*sigL*	0.109±0.005	21.443±0.505	1.465±0.052
	10403S	0.109±0.003	21.434±0.287	1.479±0.048

[a]Results are summarized by Mean ± Standard deviation for the bacterial strains tested in duplicate. Means within a given column with the same letter are not statistically different from each other in the same carbon source (overall $\alpha = 0.05$, Tukey's HSD).

SUPPLEMENTAL TABLE 2 Optical density-derived growth parameters of *L. monocytogenes* 10403S and mutants at 37°C[a]

Carbon Source	Strain	μ_{max} [OD increase/hour]	λ [hour]	Maximum OD
Glucose	Δ*sigB*	0.032±0.002^{ABCDE}	16.096±0.372^{E}	0.144±0.012^{F}
	Δ*sigB*Δ*sigC*	0.034±0.003^{ABCDE}	17.053±1.678^{E}	0.177±0.028^{DEF}
	Δ*sigB*Δ*sigC*Δ*sigH*	0.038±0.004^{ABC}	15.503±0.769^{E}	0.170±0.021^{EF}
	Δ*sigB*Δ*sigC*Δ*sigH*Δ*sigL*	0.029±0.003^{BCDE}	16.607±0.419^{E}	0.176±0.021^{EF}
	Δ*sigB*Δ*sigC*Δ*sigL*	0.024±0.001^{E}	15.851±0.462^{E}	0.254±0.011^{A}
	Δ*sigB*Δ*sigH*	0.042±0.003^{A}	17.451±0.748^{E}	0.154±0.014^{F}
	Δ*sigB*Δ*sigH*Δ*sigL*	0.036±0.002^{ABCD}	18.657±0.670^{DE}	0.198±0.020^{CDE}
	Δ*sigB*Δ*sigL*	0.024±0.001^{E}	16.408±0.245^{E}	0.243±0.010^{AB}
	Δ*sigC*	0.025±0.007^{E}	16.101±0.724^{E}	0.246±0.009^{AB}
	Δ*sigC*Δ*sigH*	0.036±0.005^{ABCD}	20.786±1.933^{CD}	0.197±0.010^{CDE}
	Δ*sigC*Δ*sigH*Δ*sigL*	0.038±0.006^{AB}	21.955±0.922^{BC}	0.241±0.015^{AB}
	Δ*sigC*Δ*sigL*	0.037±0.004^{ABCD}	18.664±3.603^{DE}	0.200±0.034^{CDE}
	Δ*sigH*	0.027±0.012^{DE}	26.297±3.438^{A}	0.194±0.019^{CDE}
	Δ*sigH*Δ*sigL*	0.028±0.010^{CDE}	24.703±1.719^{AB}	0.221±0.020^{ABC}
	Δ*sigL*	0.041±0.001^{A}	20.972±1.251^{CD}	0.245±0.004^{AB}
	10403S	0.032±0.001^{ABCDE}	17.517±0.453^{E}	0.214±0.014^{BCD}
Mannose	Δ*sigB*	0.016±0.004^{C}	13.576±0.394^{K}	0.261±0.008^{AB}
	Δ*sigB*Δ*sigC*	0.019±0.003^{BC}	13.963±0.587^{JK}	0.284±0.007^{AB}
	Δ*sigB*Δ*sigC*Δ*sigH*	0.027±0.004^{ABC}	15.508±0.344^{IJK}	0.249±0.007^{AB}
	Δ*sigB*Δ*sigC*Δ*sigH*Δ*sigL*	0.036±0.008^{A}	17.186±0.638^{GHI}	0.286±0.013^{AB}
	Δ*sigB*Δ*sigC*Δ*sigL*	0.024±0.006^{ABC}	15.952±1.044^{HIJK}	0.274±0.039^{AB}
	Δ*sigB*Δ*sigH*	0.028±0.008^{ABC}	16.527±1.219^{GHIJ}	0.217±0.037^{B}
	Δ*sigB*Δ*sigH*Δ*sigL*	0.032±0.003^{A}	19.051±0.817^{EFG}	0.273±0.014^{AB}
	Δ*sigB*Δ*sigL*	0.027±0.003^{ABC}	16.788±0.996^{GHI}	0.23±0.0310^{B}
	Δ*sigC*	0.024±0.006^{ABC}	18.213±2.347^{EFGH}	0.271±0.073^{AB}
	Δ*sigC*Δ*sigH*	0.025±0.007^{ABC}	22.515±1.925^{CD}	0.277±0.112^{AB}
	Δ*sigC*Δ*sigH*Δ*sigL*	0.035±0.005^{A}	22.882±1.156^{BC}	0.298±0.058^{AB}
	Δ*sigC*Δ*sigL*	0.029±0.010^{ABC}	19.980±1.688^{DEF}	0.303±0.048^{AB}
	Δ*sigH*	0.024±0.007^{ABC}	25.797±1.518^{A}	0.235±0.012^{AB}
	Δ*sigH*Δ*sigL*	0.033±0.008^{A}	25.492±2.029^{AB}	0.293±0.062^{AB}
	Δ*sigL*	0.031±0.007^{AB}	20.307±0.555^{CDE}	0.290±0.045^{AB}
	10403S	0.025±0.007^{ABC}	17.455±0.883^{FGHI}	0.339±0.091^{A}
Cellobiose	Δ*sigB*	0.076±0.004^{A}	15.147±0.488^{CDE}	0.409±0.006^{BCDEF}
	Δ*sigB*Δ*sigC*	0.072±0.006^{A}	14.596±0.666^{CDE}	0.419±0.011^{BCDEF}
	Δ*sigB*Δ*sigC*Δ*sigH*	0.082±0.006^{A}	15.486±0.720^{CDE}	0.411±0.014^{BCDEF}
	Δ*sigB*Δ*sigC*Δ*sigH*Δ*sigL*	0.048±0.006^{BCD}	14.483±1.915^{CDE}	0.400±0.015^{CDEF}
	Δ*sigB*Δ*sigC*Δ*sigL*	0.027±0.005^{CDE}	10.412±1.384^{E}	0.403±0.019^{CDEF}

	Δ*sigB*Δ*sigH*	0.076±0.006^{A}	17.215±0.946^{CDE}	0.396±0.027^{DEF}
	Δ*sigB*Δ*sigH*Δ*sigL*	0.042±0.006^{BCDE}	14.989±1.437^{CDE}	0.389±0.023^{EF}
	Δ*sigB*Δ*sigL*	0.026±0.005^{E}	10.957±4.086^{DE}	0.382±0.038^{F}
	Δ*sigC*	0.060±0.008^{AB}	21.003±1.231^{BC}	0.515±0.028^{ABC}
	Δ*sigC*Δ*sigH*	0.049±0.009^{BC}	25.281±4.232^{AB}	0.504±0.012^{ABCDE}
	Δ*sigC*Δ*sigH*Δ*sigL*	0.040±0.008^{BCDE}	19.399±1.767^{BC}	0.521±0.053^{AB}
	Δ*sigC*Δ*sigL*	0.045±0.034^{BCDE}	13.941±1.081^{CDE}	0.485±0.067^{ABCDEF}
	Δ*sigH*	0.043±0.013^{BCDE}	28.584±7.804^{A}	0.541±0.091^{A}
	Δ*sigH*Δ*sigL*	0.032±0.004^{CDE}	20.326±5.696^{BC}	0.513±0.111^{ABCD}
	Δ*sigL*	0.027±0.007^{DE}	21.115±8.382^{ABC}	0.420±0.143^{BCDEF}
	10403S	0.072±0.009^{A}	18.432±0.871^{BCD}	0.521±0.019^{AB}
Glycerol	Δ*sigB*	0.012±0.003	43.367±3.537	0.222±0.046
	Δ*sigB*Δ*sigC*	0.021±0.008	34.919±8.743	0.339±0.169
	Δ*sigB*Δ*sigC*Δ*sigH*	0.019±0.007	34.314±9.599	0.344±0.167
	Δ*sigB*Δ*sigC*Δ*sigH*Δ*sigL*	0.020±0.013	47.496±16.717	0.793±0.734
	Δ*sigB*Δ*sigC*Δ*sigL*	0.016±0.010	44.392±13.758	0.518±0.225
	Δ*sigB*Δ*sigH*	0.022±0.004	46.729±6.046	0.316±0.099
	Δ*sigB*Δ*sigH*Δ*sigL*	0.017±0.003	49.138±6.570	0.358±0.132
	Δ*sigB*Δ*sigL*	0.014±0.010	44.119±13.527	0.348±0.121
	Δ*sigC*	0.022±0.009	34.433±8.482	0.381±0.129
	Δ*sigC*Δ*sigH*	0.018±0.006	32.705±11.883	0.383±0.105
	Δ*sigC*Δ*sigH*Δ*sigL*	0.025±0.013	35.034±7.571	0.394±0.132
	Δ*sigC*Δ*sigL*	0.022±0.007	28.243±6.893	0.419±0.131
	Δ*sigH*	0.018±0.005	32.801±10.221	0.376±0.130
	Δ*sigH*Δ*sigL*	0.019±0.010	37.829±6.916	0.321±0.123
	Δ*sigL*	0.024±0.008	38.435±6.586	0.317±0.119
	10403S	0.022±0.009	37.266±5.459	0.322±0.117

[a] Results are summarized by Mean ± Standard deviation for the bacterial strains tested in duplicate. Means within a given column with the same letter are not statistically different from each other in the same carbon source (overall $\alpha = 0.05$, Tukey's HSD).

Supplemental Table 3: Linear model of lag phase duration in the presence of mannose

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	17.3976	0.4509	3.2E-55
sigmaB	5.3165	0.6376	1.3E-12
sigmaC	1.4417	0.5206	6.9E-03
sigmaH	-1.1394	0.6376	7.8E-02
sigmaL	-2.1010	0.5206	1.2E-04
sigmaB:sigmaC	1.5044	0.7362	4.4E-02
sigmaB:sigmaH	-1.3232	0.9017	1.5E-01
sigmaB:sigmaL	2.0696	0.7362	6.1E-03
sigmaC:sigmaH	-1.2172	0.7362	1.0E-01
sigmaH:sigmaL	-0.4999	0.7362	5.0E-01
sigmaB:sigmaC:sigmaH	-1.9439	1.0412	6.5E-02
sigmaB:sigmaH:sigmaL	-1.7787	1.0412	9.1E-02

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents lag phase duration of the Δ*sigBCHL* strain.

Supplemental Table 4: Linear model of growth rate in the presence of mannose

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	0.0364	0.4509	9.8E-32
sigmaB	-0.0016	0.6376	3.8E-01
sigmaC	-0.0035	0.5206	1.6E-01
sigmaH	-0.0131	0.6376	9.6E-06
sigmaL	-0.0099	0.5206	1.4E-04
sigmaB:sigmaH	0.0073	0.7362	4.2E-03
sigmaC:sigmaH	0.0062	0.9017	8.2E-02
sigmaC:sigmaL	0.0041	0.7362	2.5E-01
sigmaH:sigmaL	0.0049	0.7362	1.7E-01
sigmaC:sigmaH:sigmaL	-0.0075	0.7362	1.4E-01

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents the growth rate of the Δ*sigBCHL* strain.

Supplemental Table 5: Linear model of maximum growth in the presence of mannose

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	0.2821	0.0179	7.30E-27
sigmaB	0.0199	0.0206	3.40E-01
sigmaC	-0.0082	0.0253	7.50E-01
sigmaH	0.0028	0.0253	9.10E-01
sigmaL	-0.0289	0.0206	1.60E-01
sigmaB:sigmaC	-0.0014	0.0292	9.60E-01
sigmaB:sigmaH	-0.0123	0.0292	6.70E-01
sigmaC:sigmaH	-0.0512	0.0357	1.60E-01
sigmaC:sigmaL	-0.0282	0.0292	3.40E-01
sigmaH:sigmaL	0.018	0.0292	5.40E-01
sigmaB:sigmaC:sigmaH	0.0627	0.0413	1.30E-01
sigmaC:sigmaH:sigmaL	0.0792	0.0413	5.80E-02

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents maximum growth of the Δ*sigBCHL* strain.

Supplemental Table 6: Linear model of lag phase duration in the presence of cellobiose

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	14.4829	1.4948	3.9E-15
sigmaB	4.9163	2.1140	2.3E-02
sigmaC	0.5060	2.1140	8.1E-01
sigmaH	-4.0709	2.1140	5.8E-02
sigmaL	1.0033	2.1140	6.4E-01
sigmaB:sigmaC	0.4208	2.9897	8.9E-01
sigmaB:sigmaH	-1.3871	2.9897	6.4E-01
sigmaB:sigmaL	4.8786	2.9897	1.1E-01
sigmaC:sigmaH	0.0389	2.9897	9.9E-01
sigmaC:sigmaL	1.2228	2.9897	6.8E-01
sigmaH:sigmaL	3.1809	2.9897	2.9E-01
sigmaB:sigmaC:sigmaH	6.2078	4.2280	1.5E-01
sigmaB:sigmaC:sigmaL	1.1530	4.2280	7.9E-01
sigmaB:sigmaH:sigmaL	-2.0011	4.2280	6.4E-01
sigmaC:sigmaH:sigmaL	-1.2168	4.2280	7.7E-01
sigmaB:sigmaC:sigmaH:sigmaL	-10.9037	5.9793	7.2E-02

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents lag phase duration of the Δ*sigBCHL* strain.

Supplemental Table 7: Linear model of growth rate in the presence of cellobiose

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	0.0484	0.0044	1.8E-17
sigmaB	-0.0086	0.0063	1.7E-01
sigmaC	-0.0065	0.0063	3.0E-01
sigmaH	-0.0212	0.0063	1.1E-03
sigmaL	0.0337	0.0063	7.8E-07
sigmaB:sigmaC	-0.0013	0.0089	8.8E-01
sigmaB:sigmaH	0.0267	0.0089	3.5E-03
sigmaB:sigmaL	-0.0241	0.0089	8.2E-03
sigmaC:sigmaH	0.0054	0.0089	5.5E-01
sigmaC:sigmaL	0.0002	0.0089	9.8E-01
sigmaH:sigmaL	0.0116	0.0089	2.0E-01
sigmaB:sigmaC:sigmaH	-0.0163	0.0126	2.0E-01
sigmaB:sigmaC:sigmaL	0.0013	0.0126	9.2E-01
sigmaB:sigmaH:sigmaL	-0.0062	0.0126	6.2E-01
sigmaC:sigmaH:sigmaL	0.0045	0.0126	7.2E-01
sigmaB:sigmaC:sigmaH:sigmaL	0.0250	0.0178	1.6E-01

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents growth rate of the Δ*sigBCHL* strain.

Supplemental Table 8: Linear model of maximum growth in the presence of cellobiose

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	0.3957	0.0142	6.25E-46
sigmaB	0.1208	0.0164	9.00E-11
sigmaH	-0.0142	0.0201	0.482947
sigmaL	0.0068	0.0164	0.679019
sigmaB:sigmaH	-0.0390	0.0233	0.097427
sigmaH:sigmaL	0.0367	0.0233	0.118088

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents maximum growth of the Δ*sigBCHL* strain.

Supplemental Table 9: Linear model of lag phase duration in the presence of glucose

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	16.7388	0.5965	8.4E-44
sigmaB	5.0844	0.7810	5.6E-09
sigmaC	1.7868	0.7810	2.5E-02
sigmaH	-1.0191	0.7810	2.0E-01
sigmaL	-1.3846	0.8436	1.0E-01
sigmaB:sigmaC	1.2244	0.9018	1.8E-01
sigmaB:sigmaH	-2.0086	0.9018	2.9E-02
sigmaB:sigmaL	0.4961	1.1045	6.5E-01
sigmaC:sigmaH	-0.9669	0.9018	2.9E-01
sigmaC:sigmaL	0.4587	1.1045	6.8E-01
sigmaH:sigmaL	2.8664	1.1045	1.1E-02
sigmaB:sigmaC:sigmaL	1.7432	1.2754	1.8E-01
sigmaB:sigmaH:sigmaL	-4.8211	1.2754	3.0E-04
sigmaC:sigmaH:sigmaL	-2.5332	1.2754	5.0E-02

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents lag phase duration of the Δ*sigBCHL* strain.

Supplemental Table 10: Linear model of growth rate in the presence of glucose

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	0.0289	0.0019	5.2E-25
sigmaB	0.0095	0.0028	9.1E-04
sigmaC	0.0072	0.0025	5.6E-03
sigmaH	-0.0053	0.0025	4.2E-02
sigmaL	0.0088	0.0025	9.2E-04
sigmaB:sigmaC	-0.0182	0.0036	2.5E-06
sigmaB:sigmaH	0.0041	0.0036	2.6E-01
sigmaB:sigmaL	-0.0116	0.0036	1.8E-03
sigmaC:sigmaH	-0.0069	0.0029	2.2E-02
sigmaC:sigmaL	-0.0032	0.0029	2.9E-01
sigmaH:sigmaL	0.0019	0.0029	5.2E-01
sigmaB:sigmaC:sigmaH	0.0215	0.0042	1.6E-06
sigmaB:sigmaC:sigmaL	0.0060	0.0042	1.5E-01
sigmaB:sigmaH:sigmaL	-0.0114	0.0042	7.4E-03

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents growth rate of the Δ*sigBCHL* strain.

Supplemental Table 11: Linear model of maximum growth in the presence of glucose

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	0.1755	0.0074	6.3E-38
sigmaB	0.0655	0.0105	1.8E-08
sigmaC	0.0229	0.0105	3.1E-02
sigmaH	0.0790	0.0105	6.4E-11
sigmaL	-0.0055	0.0105	6.0E-01
sigmaB:sigmaC	-0.0434	0.0148	4.4E-03
sigmaB:sigmaH	-0.1205	0.0148	4.4E-12
sigmaB:sigmaL	-0.0383	0.0148	1.2E-02
sigmaC:sigmaH	-0.0344	0.0148	2.3E-02
sigmaC:sigmaL	-0.0388	0.0148	1.1E-02
sigmaH:sigmaL	-0.0715	0.0148	6.5E-06
sigmaB:sigmaC:sigmaH	0.0999	0.0209	8.1E-06
sigmaB:sigmaC:sigmaL	0.0563	0.0209	8.7E-03
sigmaB:sigmaH:sigmaL	0.1619	0.0209	2.7E-11
sigmaC:sigmaH:sigmaL	0.0172	0.0209	4.1E-01
sigmaB:sigmaC:sigmaH:sigmaL	-0.1122	0.0296	2.9E-04

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents maximum growth of the Δ*sigBCHL* strain.

Supplemental Table 12: Linear model of lag phase duration in the presence of glycerol

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	45.9439	3.2043	2.1E-20
sigmaB	-14.3054	4.5316	2.6E-03
sigmaC	0.6847	4.5316	8.8E-01
sigmaL	-11.3271	4.5316	1.5E-02
sigmaB:sigmaC	5.8088	6.4086	3.7E-01
sigmaB:sigmaL	13.2576	6.4086	4.3E-02
sigmaC:sigmaL	9.7462	6.4086	1.3E-01
sigmaB:sigmaC:sigmaL	-14.7750	9.0631	1.1E-01

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents lag phase duration of the Δ*sigBCHL* strain.

Supplemental Table 13: Linear model of growth rate in the presence of glycerol

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	0.0193	0.0020	4.6E-14
sigmaB	0.0007	0.0028	8.2E-01
sigmaH	-0.0036	0.0028	2.1E-01
sigmaB:sigmaH	0.0060	0.0039	1.4E-01

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents growth rate of the Δ*sigBCHL* strain.

Supplemental Table 14: Linear model maximum growth in the presence of glycerol

Variable/Interactions[a]	Estimate	Standard Error	*p*-value
Intercept[b]	0.5664	0.0608	3.4E-13
sigmaB	-0.1417	0.0769	7.0E-02
sigmaC	-0.1241	0.0544	2.6E-02
sigmaL	-0.1992	0.0769	1.2E-02
sigmaB:sigmaL	0.2022	0.1087	6.8E-02

[a] Interaction terms are represented by ":" between interacting predictors.

[b] Intercept represents maximum growth of the Δ*sigBCHL* strain.