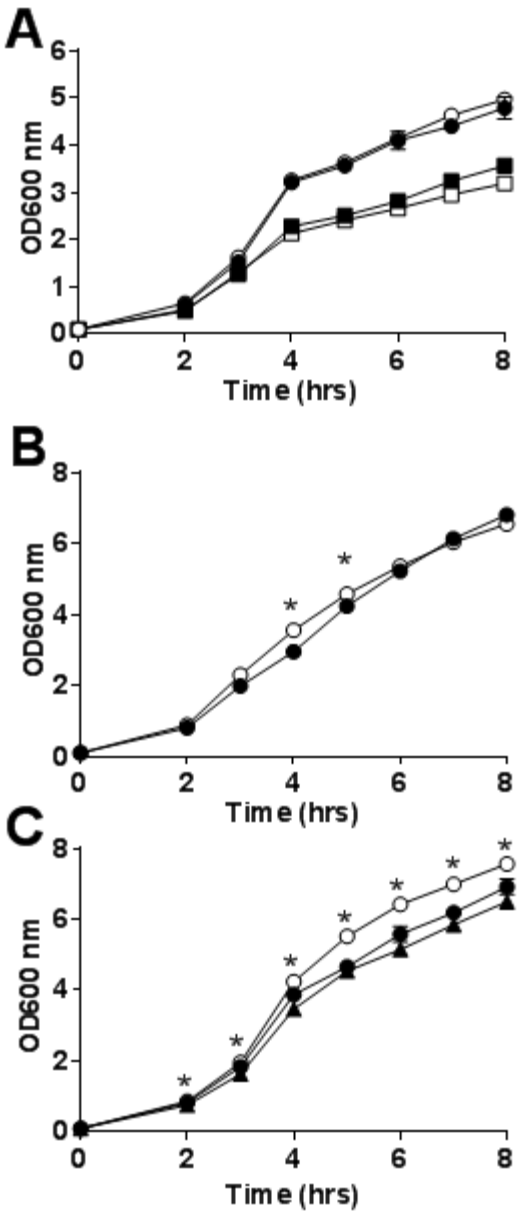

Figure S1. (A) Growth of wild-type (closed symbols) and *fakA* mutant (open symbols) in TSB + 14 mM glucose with 1:3.3 media to flask ratio (circles) and 1:1.66 flask to media ratio (squares). **(B)** Growth of wild-type (closed circle) and *fakA* mutant (open circle) in TSB without glucose. **(C)** Growth of wild-type (closed circle), *fakA* mutant (empty circle) and *fakA* complement (filled triangle) grown in TSB buffered with 50 mM MOPS. Data is the average (n=3) with standard deviation of a representative experiment. All points have error bars and may be smaller than symbols. *denote significant difference ($p<0.05$) from wildtype using a t-test.

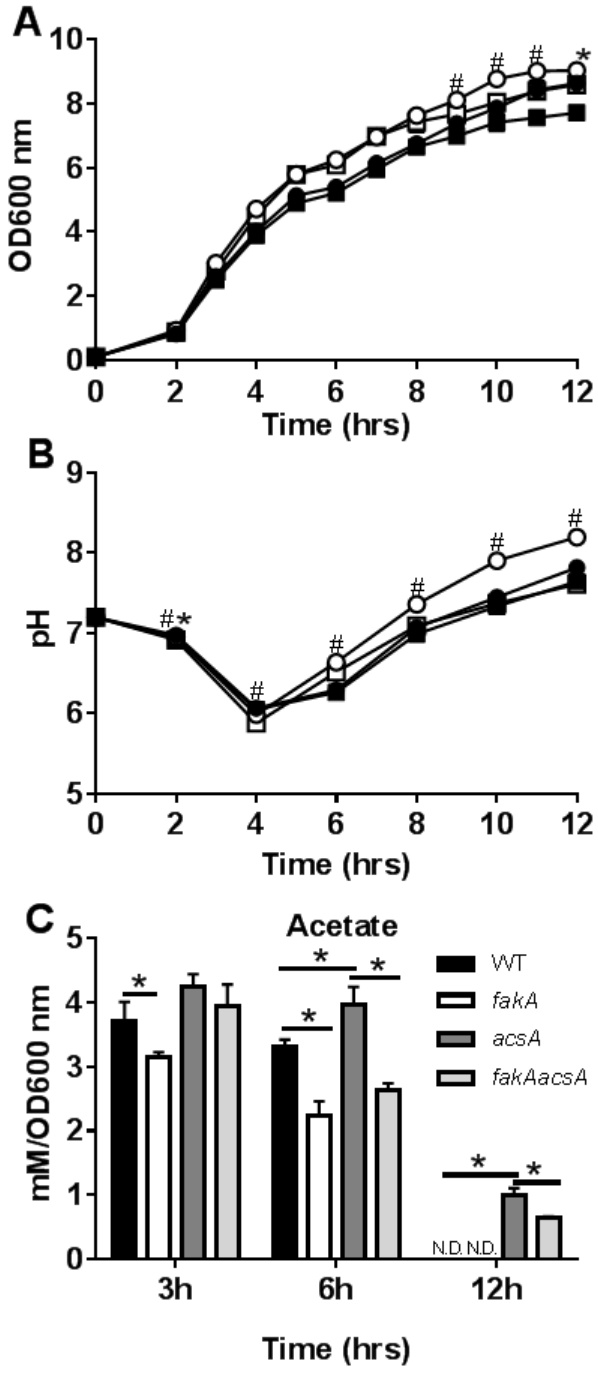

Figure S2. (A) Growth of wild-type (closed circle), *fakA* mutant (open circle), *acsA* mutant (closed square), and *fakA acsA* mutant (open square) **(B)** pH of culture from panel A. **(C)** Quantification of acetate in the culture media at indicated time points. Data is the average (n=3) with standard deviation of a representative experiment. For panels A and B, *denotes significant difference ($p<0.05$) using a t-test for wild-type v.s. *acsA* mutant and "#" for *fakA* mutant v.s. *fakA acsA* mutant. For panel C, *indicates significant differences ($p<0.05$) as indicated. ND indicates "not detected".

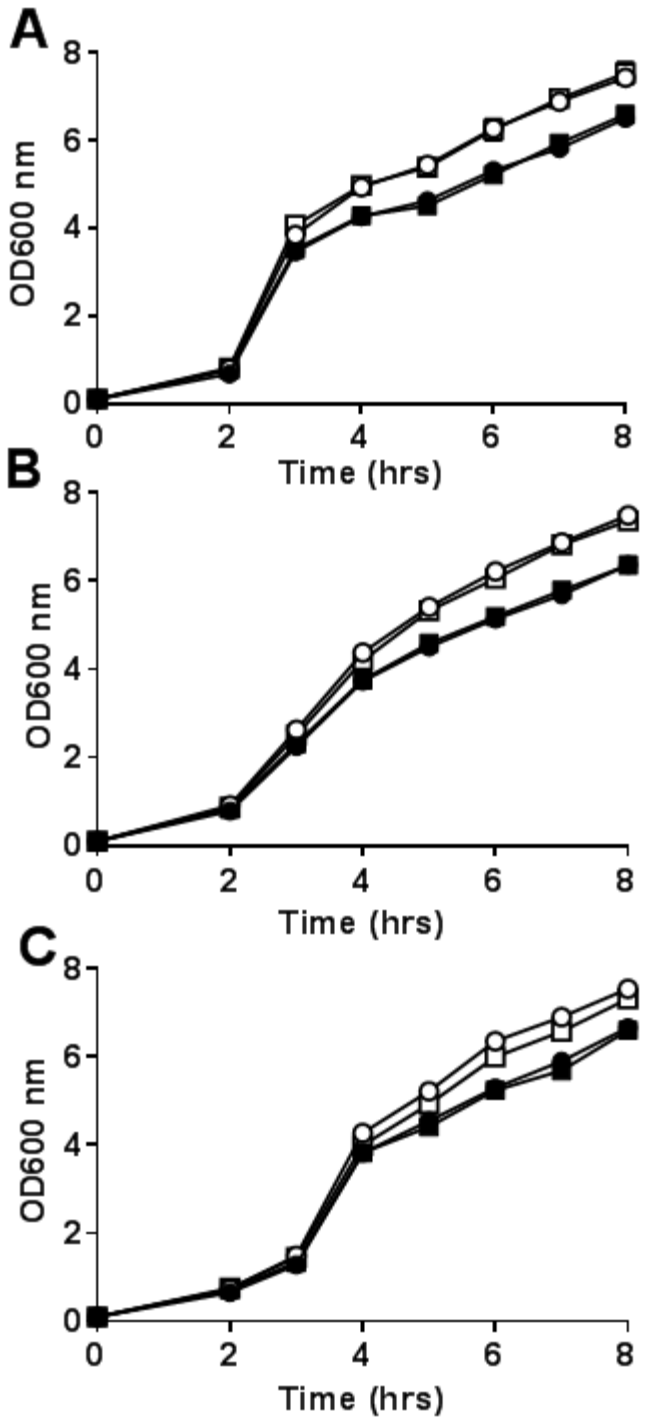

Figure S3. (A) Growth of wildtype (closed circles), *fakA* mutant (open circles), *ldh1* mutant (closed squares), and *fakA ldh1* mutant (open squares). **(B)** Growth of wildtype (closed circles), *fakA* mutant (open circles), *ldh2* mutant (closed squares), and *fakA ldh2* mutant (open squares) **(C)** Growth of wild-type (closed circles), *fakA* mutant (open circles), *alsS* mutant (closed squares), and *fakA alsS* mutant (open squares).

Table S1. **Quantification of organic acids.**

Organic Acid[a]	Media	Strain	Cells[b]			
			3h	P-value	6h	P-value
α-ketoglutarate	3.22	WT	1.62	0.029	0.45	0.011
		Δ*fakA*	1.19		0.66	
β-hydroxybutyrate	80.70	WT	2.42	0.037	4.12	0.061
		Δ*fakA*	1.72		3.16	
acetyl-CoA	n.d.[c]	WT	546.77	0.830	314.84	0.540
		Δ*fakA*	560.95		406.66	
citrate	16.00	WT	1.71	0.053	0.85	0.032
		Δ*fakA*	1.42		1.47	
fumarate	6.56	WT	BLOQ		0.37	0.456
		Δ*fakA*	BLOQ		0.35	
lactate	77.30	WT	343.36	0.014	27.54	0.278
		Δ*fakA*	474.73		24.86	
malate	702.44	WT	1.15		BLOQ	
		Δ*fakA*	BLOQ		0.42	
malonyl-CoA	n.d.[c]	WT	18.74	0.408	2.60	0.345
		Δ*fakA*	15.99		3.22	
Succinate	80.67	WT	58.22	0.388	191.81	0.142
		Δ*fakA*	48.18		247.46	

[a]Quantification of selected organic acids by LC/MS/MS of sterile media before inoculation or cells after three and six hours of growth in TSB + 14 mM glucose.

[b]values are in nM per mg protein. Statistically-significant differences are marked by underline. BLOQ indicates below limit of quantification.

[C]not determined

Table S2. Quantification of cellular nucleotides

Nucleotide[a]	3 hrs				6 hrs			
	WT[b]	Δ*fakA*[b]	% change[c]	P-value	WT[b]	Δ*fakA*[b]	% change[c]	P-value
NAM	1.42	3.88			1.13	1.18		
NMN	0.38	0.12	-68.6	0.001	0.20	0.21		
NAD	46.84	28.18	-39.8	0.005	40.99	52.39		
NADP	2.86	2.04			1.96	3.13	60.1	0.002
AMP	70.26	71.47			32.67	59.03	80.7	0.004
ADP	18.25	17.20			7.97	12.20	53.0	0.017
ADPR	11.97	18.55	55.0	0.005	5.57	2.55	-54.2	0.011
ATP	6.52	6.09			1.92	3.22	67.2	0.015
GMP	14.58	10.27	-29.5	0.007	9.40	18.57	97.5	0.005
GDP	15.39	10.44	-32.1	0.001	6.34	9.89	56.1	0.013
GTP	3.61	2.19	-39.2	0.002	1.32	1.67		
CMP	7.55	6.18	-18.1	0.015	6.46	12.79	97.9	0.006
CDP	1.66	1.03	-37.9	0.032	1.07	1.78	66.6	0.018
CTP	0.87	0.47	-45.2	0.001	0.30	0.47	56.1	0.029
UMP	15.80	19.20	21.5	0.014	8.46	20.08	137.3	0.009
UDP	18.36	19.73			8.57	13.73	60.2	0.009
TMP	5.17	5.37			2.92	14.77	406.6	0.021
TDP	3.57	4.91	37.3	0.002	1.43	4.64	224.9	0.004
TTP	0.80	0.85			0.21	0.76	253.4	0.002
IMP	10.58	8.22	-22.4	0.033	1.38	4.95	258.3	0.005
IDP	0.36	0.16	-57.2	0.003	0.04	0.03		
ITP	0.54	0.23	-58.0	0.008	0.06	0.05		
NADH	36.50	42.00			19.60	14.32	-26.9	0.007
NADPH	1.16	0.77	-33.6	0.021	0.69	0.63		
NAD/NADH	1.37	0.67	-51.0	0.020	2.12	3.70	74.2	0.013
NADP/NADPH	2.47	2.66			2.84	5.01	76.3	0.001

[a]Quantified using LC/MS/MS from cells collected after three or six hours of growth in TSB + 14 mM glucose.

[b]Shown as nM per mg protein, except for NAD/NADH and NADP/NADPH (shown as ratio).

[c]Change in mutant from wild-type (WT) strain, red box denotes a decrease in mutant while green identifies an increase in mutant. Only those with significant differences ($p < 0.05$) are shown.

Table S3. Quantification of extracellular amino acids

Amino acid	Media[a]	Strain	Supernatant[b]			
			3h	P-value	6h	P-value
Alanine	2692.08	WT	594.03	0.256	382.43	0.002
		Δ*fakA*	988.13		72.20	
Arginine	1616.45	WT	901.83	0.528	916.62	0.547
		Δ*fakA*	1114.91		604.18	
Asparagine	870.91	WT	39.85	0.036	22.43	0.313
		Δ*fakA*	75.96		19.39	
Aspartate	602.03	WT	162.84	0.567	193.21	0.007
		Δ*fakA*	198.94		3.66	
Citruline	20.01	WT	19.46	0.428	26.68	0.283
		Δ*fakA*	12.39		19.50	
Glutamate	2387.40	WT	489.98	0.265	257.68	0.085
		Δ*fakA*	842.71		19.87	
Glutamine	542.46	WT	BLOQ		BLOQ	
		Δ*fakA*	2.47		BLOQ	
Glycine	758.59	WT	111.32	0.729	25.32	0.369
		Δ*fakA*	87.15		7.65	
Hisitidine	567.36	WT	246.92	0.253	218.62	0.591
		Δ*fakA*	344.32		143.46	
Isoleucine	1539.47	WT	575.56	0.167	433.75	0.901
		Δ*fakA*	895.23		403.93	
Leucine	7071.18	WT	2870.56	0.329	2322.54	0.576
		Δ*fakA*	3832.42		1672.32	
Lysine	6442.79	WT	1662.38	0.352	1381.47	0.531
		Δ*fakA*	2189.76		923.10	
Ornithine	51.92	WT	30.25	0.151	43.70	0.569
		Δ*fakA*	23.79		49.01	
Methionine	1318.28	WT	443.97	0.659	385.42	0.383
		Δ*fakA*	679.39		261.61	
Phenylalanine	1910.52	WT	1004.86	0.744	1012.08	0.494
		Δ*fakA*	1122.32		673.73	
Proline	398.74	WT	183.10	0.446	193.10	0.670
		Δ*fakA*	248.13		232.58	
Serine	1544.93	WT	56.55	0.005	15.82	0.174
		Δ*fakA*	171.51		4.17	
Threonine	1453.77	WT	119.45	0.049	26.46	0.365
		Δ*fakA*	473.13		0.97	
Tryptophan	551.52	WT	248.25	0.617	253.99	0.681
		Δ*fakA*	293.05		196.59	
Tyrosine	563.59	WT	207.77	0.218	213.68	0.724
		Δ*fakA*	317.66		167.61	
Valine	2717.28	WT	1184.58	0.430	1104.39	0.742
		Δ*fakA*	1545.04		883.73	

[a]μM concentration of sterile media determined by LC/MS/MS.

[b]μM concentration determined by LC/MS/MS and normalized to relative optical density. Statistically-significant differences are marked with an underline. BLOQ indicates below limit of quantification.