

Table S1. Substrate-specific parameters:

Calculated growth parameters

Growth substrate	Exponential growth phase (%OD _{max} bis %OD _{max})					Stationary phase (OD _{max})			
	doubling time	generation time	division rate	growth rate (biomass)	growth rate (cell count)	biomass yield	normalized biomass yield		space time yield
	[h]	[h]	[1 h ⁻¹]	[g (L·h) ⁻¹]	[1 (mL·h) ⁻¹]		[g mM _s ⁻¹]	[g g _s ⁻¹]	
Glucose	1.60	1.33	0.75	0.15	1,48E+09	0.06	0.011	0.35	0.09
Galactose	2.30	1.61	0.62	0.12	1,31E+09	0.06	0.010	0.34	0.08
Fructose	1.57	1.22	0.82	0.11	8,48E+08	0.05	0.008	0.28	0.08
Mannose	1.69	1.54	0.65	0.14	1,12E+09	0.06	0.010	0.34	0.10
Rhamnose	3.67	3.20	0.31	0.03	3,25E+08	0.03	0.006	0.21	0.02
Fucose	8.80	10.23	0.10	0.01	1,19E+08	0.01	0.002	0.07	0.01
Glucuronate	14.26	18.29	0.05	0.01	1,64E+08	0.03	0.005	0.15	0.01
Arabinose	1.39	1.62	0.62	0.19	1,52E+09	0.04	0.009	0.29	0.08
Xylose	1.83	1.75	0.57	0.14	1,91E+09	0.05	0.009	0.30	0.07
Maltose	2.66	3.29	0.30	0.11	7,06E+08	0.12	0.010	0.36	0.06
Lactose	2.52	2.06	0.49	0.07	7,77E+08	0.09	0.007	0.26	0.05
Sucrose	2.29	1.60	0.63	0.12	1,22E+09	0.09	0.008	0.28	0.06
α-Cyclodextrin	1.74	1.21	0.83	0.14	1,89E+09	0.27	0.007	0.28	0.07
Xylan	4.57	3.39	0.29	0.03	6,50E+08	0.14	0.004	0.16	0.02

Calculated fermentation product yield

Growth substrate	Stationary phase (OD _{max})														
	Succinate			Propanoate			Acetate			Formate			Propane-1,2-diol		
	[mM mM _s ⁻¹]	[g g _s ⁻¹]	[g g _{sub} ⁻¹]	[mM mM _s ⁻¹]	[g g _s ⁻¹]	[g g _{sub} ⁻¹]	[mM mM _s ⁻¹]	[g g _s ⁻¹]	[g g _{sub} ⁻¹]	[mM mM _s ⁻¹]	[g g _s ⁻¹]	[g g _{sub} ⁻¹]	[mM mM _s ⁻¹]	[g g _s ⁻¹]	[g g _{sub} ⁻¹]
Glucose	0.39	0.26	0.73	0.01	0.01	0.02	0.51	0.33	0.95	0.16	0.11	0.20	n.d.	n.d.	n.d.
Galactose	0.31	0.21	0.60	0.01	0.00	0.01	0.39	0.13	0.39	0.06	0.16	n.d.	n.d.	n.d.	n.d.
Fructose	0.36	0.24	0.84	0.00	0.00	0.01	0.42	0.28	0.98	0.14	0.09	0.20	n.d.	n.d.	n.d.
Mannose	0.34	0.22	0.67	0.01	0.00	0.01	0.41	0.27	0.81	0.15	0.10	0.19	n.d.	n.d.	n.d.
Rhamnose	0.03	0.02	0.10	d.	d.	d.	0.50	0.36	1.71	0.03	0.02	0.07	1.03	0.48	2.26
Fucose	0.15	0.11	1.48	0.02	0.01	0.17	0.31	0.22	3.01	0.02	0.01	0.10	0.40	0.19	2.55
Glucuronate	0.03	0.02	0.12	0.01	0.01	0.04	0.94	0.57	3.69	d.	d.	d.	n.d.	n.d.	n.d.
Arabinose	0.34	0.27	0.91	d.	d.	0.00	0.42	0.33	1.12	0.11	0.09	0.19	n.d.	n.d.	n.d.
Xylose	0.36	0.28	1.06	0.02	0.02	0.06	0.34	0.26	0.99	0.00	0.00	0.00	n.d.	n.d.	n.d.
Maltose	0.56	0.19	0.53	0.08	0.03	0.08	0.58	0.20	0.55	0.03	0.01	0.02	n.d.	n.d.	n.d.
Lactose	0.68	0.24	0.90	0.08	0.03	0.10	0.66	0.23	0.87	0.05	0.02	0.05	n.d.	n.d.	n.d.
Sucrose	0.86	0.30	1.08	d.	d.	d.	1.01	0.35	1.25	0.36	0.13	0.29	n.d.	n.d.	n.d.
α-Cyclodextrin	1.90	0.23	0.84	0.12	0.02	0.05	1.88	0.23	0.83	0.47	0.06	0.13	n.d.	n.d.	n.d.
Xylan	1.01	0.13	0.86	0.51	0.07	0.43	2.13	0.28	1.80	1.37	0.18	0.75	n.d.	n.d.	n.d.

Carbon balance of the degradation pathways

Growth substrate	substrate depletion [mM C]	product formation [mM C]	biomass formation [mM C]	CO ₂ /HCO ₃ ⁻ formation [mM C]	sum [mM C]	closure [%]
Glucose	77.1	41.53	38.92	-0.54	79.91	96.36
Galactose	67.2	40.52	31.31	-0.59	71.24	93.99
Fructose	70.68	33.99	35.01	-1.05	67.95	96.14
Mannose	71.52	39.27	32.97	-1.06	71.18	99.53
Rhamnose	62.22	17.14	41.31	-5.48	52.97	85.13
Fucose	51.6	6.63	33.12	2.09	41.84	81.08
Arabinose	71.99	33.17	37.18	-0.46	69.89	97.09
Xylose	73.69	31.25	36.35	-0.07	67.53	91.64
Maltose	75.84	41.67	26.42	0.54	68.63	90.49
Lactose	72.96	28.71	30.04	0.03	58.78	80.56
Sucrose	85.92	31.3	41.85	-1.59	71.56	83.29

Ratio of product formation for ATP yield calculation

Growth substrate	Exponential phase (%OD _{max})			
	Succinate	Propanoate	Acetate ¹	Acetate via Formate ²
	[%]	[%]	[%]	[%pt.]
Glucose	35.69	1.60	61.24	26.95
Galactose	55.63	2.70	39.34	22.83
Fructose	40.56	0.62	56.66	26.55
Mannose	44.02	0.75	52.99	19.46
Rhamnose	6.33	0.00	93.67	9.67
Fucose	38.85	4.08	56.44	4.28
Glucuronate	2.55	0.82	96.60	0.00
Arabinose	39.96	0.00	59.02	19.56
Xylose	46.99	4.63	47.05	3.03
Maltose	43.24	8.19	47.35	10.31
Lactose	45.69	7.82	45.58	6.80
Sucrose	39.91	0.00	58.53	26.65
α-Cyclodextrin	46.04	4.87	48.10	15.83
Xylan	33.26	12.52	54.21	16.26

¹ sum of acetate via PiIB and Pio

² share of acetate produced via PiIB