

Additional file 1. Comparison of physiological parameters of chemostat cultivations

Comparison of the macromolecular parameters at steady state of the chemostat cultures performed in this study with those previously reported [30]. q_{Glc} and q_{O_2} are specific utilization rates, and q_{X} , q_{Ara} , q_{EtOH} and q_{CO_2} are specific production rates, where Glc, Ara, EtOH and X stand for glucose, arabinitol, ethanol and biomass, respectively.

		Control Strain			Expressing Strain		
		Normoxic	O ₂ -limited	Hypoxic	Normoxic	O ₂ -limited	Hypoxic
This Study	$q_{\text{Glc}}^{\text{a}}$	-1.00 ± 0.02	-1.28 ± 0.03	-1.72 ± 0.05	-1.01 ± 0.02	-1.37 ± 0.03	-1.56 ± 0.04
	$q_{\text{O}_2}^{\text{a}}$	-2.35 ± 0.06	-2.01 ± 0.07	-2.01 ± 0.15	-2.44 ± 0.07	-1.99 ± 0.08	-1.81 ± 0.13
	$q_{\text{CO}_2}^{\text{a}}$	2.43 ± 0.06	2.55 ± 0.06	3.21 ± 0.14	2.52 ± 0.07	2.68 ± 0.07	2.94 ± 0.12
	q_{X}^{a}	3.57 ± 0.15	3.83 ± 0.18	3.77 ± 0.23	3.55 ± 0.15	3.77 ± 0.18	3.58 ± 0.22
	$q_{\text{EtOH}}^{\text{a}}$		0.31 ± 0.02	0.84 ± 0.06		0.41 ± 0.03	0.83 ± 0.06
	$q_{\text{Ara}}^{\text{a}}$		0.13 ± 0.01	0.33 ± 0.01		0.19 ± 0.01	0.24 ± 0.02
	RQ ^b	1.03 ± 0.04	1.27 ± 0.05	1.60 ± 0.14	1.03 ± 0.04	1.34 ± 0.06	1.63 ± 0.13
Baumann et al., 2010	$q_{\text{Glc}}^{\text{a}}$	-0.99 ± 0.04	-1.27 ± 0.05	-1.85 ± 0.08	-0.95 ± 0.04	-1.31 ± 0.05	-1.69 ± 0.04
	$q_{\text{O}_2}^{\text{a}}$	-2.20 ± 0.12	-1.79 ± 0.24	-0.28 ± 0.01	-2.26 ± 0.12	-1.54 ± 0.06	-0.44 ± 0.07
	$q_{\text{CO}_2}^{\text{a}}$	2.27 ± 0.12	2.18 ± 0.24	1.71 ± 0.07	2.29 ± 0.12	2.09 ± 0.06	1.73 ± 0.06
	q_{X}^{a}	3.61 ± 0.24	3.94 ± 0.30	3.92 ± 0.35	3.25 ± 0.22	3.76 ± 0.27	3.75 ± 0.18
	$q_{\text{EtOH}}^{\text{a}}$		0.31 ± 0.02	1.16 ± 0.06		0.33 ± 0.02	0.98 ± 0.05
	$q_{\text{Ara}}^{\text{a}}$		0.10 ± 0.00	0.48 ± 0.09		0.21 ± 0.01	0.42 ± 0.02
	RQ ^b	1.03 ± 0.08	1.22 ± 0.21	6.14 ± 0.40	1.01 ± 0.08	1.36 ± 0.07	3.90 ± 0.62

^a mmol / (g Biomass · h)

^b mol CO₂ / mol O₂