

Table I. Parameters used in the model.

Parameter	Most probable value	Range of variation in Figures 3–7	Dimension
$q_{S,\text{max}}$; maximal specific glucose uptake rate	3.5	3.0–3.75	$\text{g g}^{-1} \text{ h}^{-1}$
$q_{O_2,\text{max}}$; maximal specific oxygen uptake rate	8.0	7.5–8.25	$\text{mmol g}^{-1} \text{ h}^{-1}$
$Y_{\text{biomass}/\text{glucose}}$; yield for pathway [1]	0.49	0.47–0.50	g g^{-1}
$Y_{\text{reductive biomass}/\text{glucose}}$; yield for pathway [2]	0.05	0.05–0.10	g g^{-1}
OX ; oxygen content of biomass in "molecular formula"	0.57	0.54–0.63	mol mol^{-1}
$Y_{\text{biomass}/\text{ethanol}}$; yield for pathway [3]	0.72		g g^{-1}
$\mu_{\text{max, ethanol}}$; maximal specific growth rate	0.17		h^{-1}
K_s ; saturation parameter for glucose uptake	0.1–0.5		g L^{-1}
K_o ; saturation parameter for oxygen uptake	0.1		mg L^{-1}
K_e ; saturation parameter for growth on ethanol	0.1		g L^{-1}
K_i ; inhibition parameter: free glucose inhibits ethanol uptake	0.1		g L^{-1}
CX ; carbon content of biomass in "molecular formula"	1.00		mol mol^{-1}
HX ; hydrogen content of biomass in "molecular formula"	1.79		mol mol^{-1}
NX ; nitrogen content of biomass in "molecular formula"	0.15		mol mol^{-1}