

**Table II.** Sensitivity of amino acids, glucose and trehalose uptake on cell biomass production in phase 1.\*

Carbon source	Supply from medium	Cell biomass <sup>c</sup> for 25% change in uptake		% Change in biomass	
		Up	Down	Up	Down
ALA	0.718	1.069	1.066	0.09	0.19
ARG	2.280	1.072	1.036	0.37	3.00
ASN	0.080	1.069	1.067	0.09	0.09
ASP	0.395	1.069	1.066	0.09	0.19
CYS	0.000	—	—	—	—
GLC	4.680	1.100	0.957	3.00	10.39
GLU	0.868	1.071	1.064	0.28	0.37
GLN	0.000	—	—	—	—
GLY	0.027	1.068	1.068	0.00	0.00
HIS <sup>a</sup>	-0.320	1.057	1.078	1.03	0.94
ILE	0.173	1.069	1.067	0.09	0.09
LEU	0.457	1.068	1.066	0.00	0.19
LYS	0.187	1.070	1.065	0.19	0.28
MET <sup>b</sup>	0.163 (0.169)	1.068	1.064	0.00	0.37
PHE <sup>b</sup>	0.188 (0.237)	1.068	1.063	0.00	0.47
PRO	0.187	1.069	1.066	0.09	0.19
SER	3.355	1.072	1.052	0.37	1.50
THR	0.562	1.069	1.067	0.09	0.09
TYR	0.096	1.070	1.066	0.19	0.19
TRP	0.000	—	—	—	—
VAL	0.139	1.068	1.067	0.00	0.09
TRE	1.170	1.089	1.022	1.99	4.31

\*All units are in mmol/gDCW/h except for biomass ( $\text{h}^{-1}$ ).<sup>a</sup>Negative value indicates specific production rate.<sup>b</sup>Values in parentheses are experimentally measured specific uptake rates.<sup>c</sup>Normal cell biomass production rate during phase 1:  $1.068 \text{ h}^{-1}$ .**Table III.** Sensitivity of amino acids, glucose and trehalose uptake on cell biomass production in phase 2.\*

Carbon source	Supply from medium	Cell biomass <sup>b</sup> for 25% change in uptake)		% Change in biomass	
		Up	Down	Up	Down
ALA	0.420	0.369	0.359	1.37	1.37
ARG	0.411	0.373	0.355	2.47	2.47
ASN	0.080	0.365	0.363	0.28	0.28
ASP	0.104	0.365	0.363	0.28	0.28
CYS	0.000	—	—	—	—
GLC	2.333	0.426	0.298	17.03	18.13
GLU	0.670	0.377	0.351	3.57	3.57
GLN	0.000	—	—	—	—
GLY	0.248	0.366	0.362	0.55	0.55
HIS	0.017	0.365	0.364	0.28	0.00
ILE	0.069	0.366	0.362	0.55	0.55
LEU	0.164	0.364	0.360	0.03	1.10
LYS	0.051	0.366	0.362	0.55	0.55
MET <sup>a</sup>	0.053 (0.082)	0.364	0.362	0.03	0.55
PHE <sup>a</sup>	0.064 (0.079)	0.364	0.361	0.00	0.82
PRO	0.040	0.365	0.363	0.28	0.28
SER	0.000	—	—	—	—
THR	0.304	0.369	0.359	1.37	1.37
TYR	0.045	0.365	0.362	0.28	0.55
TRP	0.000	—	—	—	—
VAL	0.102	0.366	0.362	0.55	0.55
TRE	0.576	0.395	0.332	8.52	8.79

\*All units are in mmol/gDCW/h except for biomass ( $\text{h}^{-1}$ ).<sup>a</sup>Values in parentheses are experimentally measured specific uptake rates.<sup>b</sup>Normal cell biomass production rate during phase 2:  $0.364 \text{ h}^{-1}$ .