Additional file 6.

Table 1.Intracellular concentrations of coenzyme and nucleotides pools in P. pastoris cells growing on glucose:methanol. Concentration are given in μmol/g_{DCW}

Intracellular Concentratrions (μmol/g_{DCW})		
Coenzymes	**Value**	**SD**
NAD+NADH	7.470	0.18
NADP+NADPH	0.180	0.03
Acetyl CoA	0.18	0.03
FAD	0.73	0.12

Intracellular Concentratrions (μmol/g_{DCW})		
Nucleotides	**Value**	**SD**
ATP	6.57	0.15
ADP	0.94	0.03
GTP	0.99	0.04
GMP	0.72	0.11
AMP	0.29	0.01
GDP	0.19	0.01
cAMP	0.01	0.00

Table 2. Intacellular concentrations of central metabolite pools in P. Pastoris cells growing on glucose:methanol. Concentrations are given in μmol/g_{DCW}.

Intracellular Concentrations μmol/g_{DCW})						
	Experiments 1		**Experiments 2**		**Average values**	
Metabolites	**Value**	**SD**	**Value**	**SD**	**Value**	**SD**
Treh	24.503	0.706	n.d.	n.d.	24.503	0.706
Glc6P	14.315	0.431	14.570	0.291	14.442	0.550
CIT	7.032	0.200	7.299	0.150	7.165	0.250
Sed7P	5.413	0.165	5.371	0.116	5.392	0.204
Fru6P	3.187	0.134	3.105	0.020	3.146	0.147
MAL	2.489	2.156	3.187	0.324	2.838	2.236
SUCC	1.790	0.087	1.886	0.120	1.838	0.148
αKG	1.274	0.078	2.119	0.176	1.696	0.192
PG3	1.781	0.057	1.955	0.082	1.868	0.100
Pyr	1.617	0.182	1.331	0.078	1.474	0.198
Pep	0.657	0.024	0.755	0.043	0.706	0.049
Glu	0.784	0.862	n.d.	n.d.	0.784	0.862
GA3P	0.005	0.001	n.d.	n.d.	0.005	0.001
PG2	0.197	0.015	0.102	0.060	0.149	0.062
ICIT	0.046	0.002	0.024	0.028	0.035	0.032
DHAP	0.711	0.017	n.d.	n.d.	0.711	0.017
E4P	0.083	0.003	n.d.	n.d.	0.083	0.003
Rib5P	0.883	0.065	n.d.	n.d.	0.883	0.065
Rul5P	0.228	0.031	n.d.	n.d.	0.228	0.031
Xul5P	0.160	0.017	n.d.	n.d.	0.160	0.017

Man6P	1.162	0.026	1.284	0.016	1.223	0.030
FUM	0.667	0.027	0.872	0.034	0.770	0.044
FBP	0.933	0.051	0.888	0.034	0.910	0.061
T6P	0.105	0.007	0.083	0.010	0.094	0.012

Table 3. Intracellular concentrations of amino acid pools in P. Pastoris cells growing on glucose:methanol. Concentrations are given in $\mu mol/g_{DCW.}$

Intracellular Concentrations						
	Experiments 1		***Experiments 2***		***Average values***	
Amino acids	**Value**	**SD**	**Value**	**SD**	**Value**	**SD**
Glut	84.31	2.58	85.40	1.47	84.85	2.97
Gln	83.27	2.40	86.67	0.04	84.97	2.40
Asp	38.68	0.53	40.43	0.16	39.56	0.56
Orn	21.23	1.81	23.95	0.45	22.59	1.87
Ala	14.29	0.40	15.73	0.63	15.01	0.75
Lys	6.83	0.06	13.61	0.12	10.22	0.13
Ser	5.50	0.05	6.39	0.09	5.94	0.10
Asn	4.20	0.09	5.12	0.04	4.66	0.10
His	4.15	0.09	5.43	0.12	4.79	0.15
Gly	1.20	1.04	1.46	0.68	1.33	1.24
Val	1.24	0.04	1.35	0.08	1.30	0.09
Leu	0.63	0.02	0.75	0.23	0.69	0.23
ile	0.28	0.02	0.37	0.05	0.33	0.06
Pro	2.57	0.04	2.65	0.06	2.61	0.07
Thr	2.44	0.08	2.54	0.14	2.49	0.16
Phe	0.17	0.02	0.24	0.05	0.20	0.06
Tyr	0.18	0.02	0.23	0.03	0.20	0.04
Trp	0.08	0.01	0.10	0.03	0.09	0.03
Met	0.44	0.04	0.53	0.03	0.48	0.05

Table 4.Maximun gibbs energy at a minimun substrate and minimun gibbs energy at a máximum subsrate of P. Pastoris growing on glucose:methanol.

Gibbs energy (kJ/mol)		
Reaction	**Δ Gibbs Min.**	**Δ Gibbs Max.**
HXK	-26.08	-12.81
PGI	-0.67	-0.43
PFK	-33.06	-30.43
FB	-18.88	-16.85
FBA	-10.74	-9.93
TPI	-5.17	-4.54
GAPDH	-2.31	0.00
PGK	-2.31	0.00
GPM	-1.22	0.00
ENO	-0.91	-0.54
PYK	-33.29	-19.82
G6PDH	-27.81	0.00
6PGDH	-226.33	-190.21
RPI	-3.08	-2.72
RPE	-2.40	-2.00
TK(1)+TA	-0.15	0.00
TK(3)	-12.63	-12.25
TA	6.15	6.95
TK(1)	-6.95	-6.15
G3PDH	-32.54	-13.02
PYRCK	-164.34	-139.58
TPP	-60.61	-29.77
TreP	-58.47	-36.67
PDC	-209.69	-177.54
DHAK	-28.01	-11.67
PMI	-1.71	-1.50
CAT	-466.06	-432.40
MET	-77.45	-39.47