

Table 1. Comparison of metabolic reaction fluxes of amino acids biosynthetic reactions.

Name	Reaction	Phase 1 ^a		Phase 2 ^a	
		Complex	Minimal	Complex	Minimal
ALATA_L	akg + ala-L ↔ glu-L + pyr	-0.18	-0.61	0.17	-0.35
ASNS2	asp-L + atp + nh4 → amp + asn-L + h + ppi	0.17	0.25	0.003	0.08
ASPTA	akg + asp-L ↔ glu-L + oaa	-1.68	-2.18	-0.44	-0.74
CYSS	acser + h2s → ac + cys-L + h	0.09	0.25	0.03	0.09
DAPDC	26dap-M + h → co2 + lys-L	0.12	0.35	0.07	0.12
GHMT2	ser-L + thf → gly + h2o + mlthf	1.22	1.68	0.17	0.57
GLNS	atp + glu-L + nh4 → adp + gln-L + h + pi	2.35	2.03	0.66	0.69
GLUDy	glu-L + h2o + nadp ↔ akg + h + nadph + nh4	1.43	-4.04	0.29	-2.11
HISTD	h2o + histd + 2 nad → 3 h + his-L + 2 nadh	0.42	0.10	0.02	0.03
ILETA	akg + ile-L ↔ 3mop + glu-L	-0.12	-0.30	-0.03	-0.1
LEUTAi	4mop + glu-L → akg + leu-L	0.00	0.46	0.00	0.16
METS	5mthf + hcys-L → met-L + thf	0.00	0.16	0.00	0.05
P5CR	1pyr5c + 2 h + nadph → nadp + pro-L	0.04	0.22	0.04	0.08
PHETA1	akg + phe-L ↔ glu-L + phpyr	0.00	-0.19	0.00	-0.06
PSERT	3php + glu-L → akg + pser-L	0.00	2.28	0.32	0.78
PSP_L	h2o + pser-L → pi + ser-L	0.00	2.28	0.32	0.78
THRAr	thr-L ↔ acald + gly	0.30	-0.55	0.18	-0.19
TRPS2	indole + ser-L → h2o + trp-L	0.06	0.00	0.00	0.00
TRPAS2	h2o + trp-L ↔ indole + nh4 + pyr	0.00	-0.06	-0.02	-0.02
TYRTA	akg + tyr-L ↔ 34hpp + glu-L	-0.04	-0.14	-0.002	-0.05
VALTA	akg + val-L ↔ 3mob + glu-L	0.00	-0.43	0.00	0.00
VPAMT	3mob + ala-L → pyr + val-L	0.00	0.00	0.04	0.15

^aAll units are in mmol/gDCW/h.