Table S2. Time course of metabolic fluxes. Mean values (p.1 and 2) and confidence intervals (90 %, p.3 and 4) of four parallel cultivations.

Mean values (n=4) [µmol/g/h]

	Time [h]	30.3	32.6	34.9	37.3	39.6	41.9	44.3	46.6	48.9	51.2
Extracellular fluxes	Glucose	-231.5	-211.2	-193.7	-178.6	-165.5	-154.3	-144.9	-136.9	-130.2	-123.9
	Lactate	460.8	443.9	426.1	407.2	387.3	366.4	344.6	321.8	298.4	275.4
	Pyruvate	-48.0	-45.1	-42.6	-40.5	-38.7	-37.3	-36.0	-35.0	-34.2	-33.2
	Alanine	24.1	23.6	23.0	22.3	21.7	21.0	20.3	19.6	18.8	18.1
	Arginine	-7.3	-7.3	-7.3	-7.4	-7.5	-7.7	-7.9	-8.1	-8.3	-8.4
	Asparagine	-4.2	-4.3	-4.4	-4.4	-4.3	-4.2	-4.0	-3.7	-3.5	-3.2
	Aspartate	-21.7	-22.3	-22.5	-22.3	-21.8	-21.0	-19.8	-18.4	-16.8	-15.3
	Cysteine	-0.9	-0.7	-0.6	-0.5	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2
	Glutamate	4.8	4.5	4.3	4.2	4.1	4.1	4.2	4.4	4.6	4.7
	Glutamine	-40.3	-39.6	-39.2	-39.0	-39.0	-39.1	-39.3	-39.5	-39.9	-40.2
	Glycine	6.7	6.8	6.6	6.4	6.0	5.5	4.9	4.2	3.4	2.8
	Histidine	-1.0	-1.0	-0.9	-1.0	-1.0	-1.1	-1.2	-1.3	-1.4	-1.6
	Isoleucine	-16.5	-16.3	-15.8	-15.2	-14.4	-13.5	-12.5	-11.3	-10.1	-8.9
	Leucine	-20.0	-19.4	-18.6	-17.8	-17.0	-16.1	-15.2	-14.2	-13.2	-12.3
	Lysine	-2.9	-3.1	-3.4	-3.8	-4.2	-4.7	-5.2	-5.8	-6.3	-6.8
	Methionine	-3.7	-3.7	-3.6	-3.6	-3.6	-3.5	-3.5	-3.4	-3.4	-3.3
	Phenylalanine	-4.7	-4.9	-5.0	-5.0	-4.9	-4.8	-4.6	-4.3	-4.0	-3.7
	Proline	-7.2	-7.1	-6.5	-5.4	-4.0	-2.2	-0.1	2.2	4.8	7.1
	Serine	-14.2	-14.1	-13.9	-13.7	-13.5	-13.3	-13.1	-12.8	-12.6	-12.3
	Threonine	-8.7	-8.7	-8.6	-8.3	-8.0	-7.5	-6.9	-6.3	-5.5	-4.9
	Tryptophan	-0.9	-0.9	-0.9	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
	Tyrosine	-4.6	-4.8	-5.0	-5.0	-5.0	-4.8	-4.7	-4.4	-4.1	-3.9
	Valine	-15.4	-15.3	-14.9	-14.4	-13.7	-12.9	-11.9	-10.9	-9.7	-8.6
Anabolic fluxes	Carbohydrates	-7.3	-7.0	-6.7	-6.4	-6.3	-6.2	-6.1	-6.1	-6.1	-6.1
	DNA	-0.8	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
	RNA	-3.0	-2.9	-2.7	-2.6	-2.6	-2.5	-2.5	-2.5	-2.5	-2.5
	Lipids	-2.1	-2.0	-1.9	-1.9	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
	Proteins	-107.8	-102.2	-97.8	-94.4	-91.9	-90.3	-89.3	-89.0	-89.2	-89.3
Intracellular fluxes	G6P-F6P	220.4	200.7	183.6	168.8	156.0	145.0	135.7	127.7	121.0	114.7
	F6P-GAP	220.4	200.7	183.6	168.8	156.0	145.0	135.7	127.7	121.0	114.7
	GAP-Pyr	439.1	399.9	365.8	336.2	310.7	288.7	270.0	254.1	240.7	228.0
	Pyr-Pyrm	-19.9	-43.3	-60.2	-71.4	-77.3	-78.5	-75.3	-68.2	-57.8	-47.4
	Pyrm-AcCm	48.2	28.2	12.6	0.8	-7.5	-12.7	-14.9	-14.6	-12.1	-8.9
	OAA/AcCm-Citm	89.9	72.2	57.5	45.5	36.0	28.8	23.5	20.1	18.2	17.2
	Citm-AKGm	51.7	35.9	22.8	12.0	3.4	-3.3	-8.2	-11.5	-13.5	-14.5
	AKGm-SuCm	76.6	61.6	48.8	37.8	28.5	20.8	14.4	9.2	5.2	2.3
	SuCm-Fumm	102.4	87.9	74.9	63.1	52.4	42.7	33.8	25.7	18.4	12.6
	Fumm-Malm	105.8	92.0	79.5	67.9	57.2	47.3	38.1	29.6	21.7	15.3
	Malm-OAAm	75.9	56.8	41.3	29.2	20.0	13.5	9.5	7.6	7.7	8.4
	Malm-Pyrm	68.1	71.5	72.8	72.2	69.8	65.8	60.3	53.5	45.7	38.6
	Citm-Cit	38.3	36.3	34.7	33.5	32.6	32.0	31.7	31.6	31.7	31.7
	Cit-AcC/Mal	38.3	36.3	34.7	33.5	32.6	32.0	31.7	31.6	31.7	31.7
	Mal-Malm	38.3	36.3	34.7	33.5	32.6	32.0	31.7	31.6	31.7	31.7
	G6P-P5P	3.8	3.6	3.4	3.3	3.2	3.2	3.1	3.1	3.1	3.1
	NADH-OP	360.5	277.1	206.6	147.7	99.2	60.1	29.5	6.7	-9.2	-19.3
	FADH2-OP	134.4	120.0	106.3	93.3	80.8	68.8	57.2	46.0	35.2	26.2
	OP-ATP	1102.8	872.8	676.0	509.1	369.1	253.4	159.6	85.7	29.8	-9.1
	ATPwOP	153.9	121.6	91.3	62.5	35.3	9.3	-15.4	-39.1	-61.6	-81.4
	ATPtot	1256.6	994.4	767.3	571.7	404.4	262.7	144.2	46.6	-31.8	-90.5
	Ala-Pyr	-32.0	-30.9	-29.9	-29.0	-28.1	-27.3	-26.5	-25.7	-24.9	-24.2
	Arg-Glu	1.7	2.0	2.2	2.5	2.8	3.0	3.2	3.4	3.6	3.8
	Asn-Asp	-0.8	-0.4	-0.1	0.0	0.1	0.0	-0.1	-0.3	-0.6	-0.9
	Asp-OAAm	14.0	15.4	16.1	16.3	16.0	15.2	14.0	12.4	10.5	8.8
	Cys-Pyr	-0.3	-0.2	-0.2	-0.1	-0.2	-0.2	-0.3	-0.3	-0.4	-0.6
	Gln-Glu	33.4	33.1	33.0	33.0	33.1	33.3	33.5	33.8	34.2	34.5
	Glu-AKGm	24.9	25.7	26.0	25.8	25.1	24.0	22.6	20.7	18.6	16.8
	Gly-Ser	-18.8	-18.2	-17.6	-16.9	-16.3	-15.6	-14.9	-14.2	-13.4	-12.8
	His-Glu	-1.4	-1.3	-1.2	-1.1	-1.0	-0.9	-0.8	-0.7	-0.5	-0.4
	Ile-AcCm/SuCm	11.7	11.7	11.4	10.9	10.3	9.4	8.4	7.3	6.0	4.9
	Leu-AcCm	10.7	10.5	10.1	9.6	9.0	8.3	7.4	6.5	5.5	4.5
	Lys-AcCm	-5.2	-4.6	-3.9	-3.3	-2.7	-2.0	-1.5	-0.9	-0.3	0.1
	Met/Ser-SuCm/Cys	1.9	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.8	1.8
	Phe-Tyr	0.9	1.2	1.4	1.6	1.6	1.5	1.3	1.1	0.8	0.5
	Pro-Glu	2.9	3.0	2.6	1.6	0.3	-1.4	-3.5	-5.8	-8.4	-10.7
	Ser-Pyr	-14.0	-13.2	-12.5	-11.8	-11.2	-10.6	-10.0	-9.5	-8.9	-8.5
	Thr-SuCm	3.4	3.7	3.8	3.7	3.5	3.1	2.6	1.9	1.2	0.5
	Trp-AcCm/Ala	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Tyr-AcCm/Fumm	3.4	4.1	4.5	4.8	4.8	4.6	4.3	3.8	3.3	2.7
	Val-SuCm	8.8	9.0	8.9	8.6	8.1	7.4	6.5	5.4	4.2	3.2

	Time [h]	53.6	55.9	58.2	60.6	62.9	65.2	67.5	69.9	72.2	74.5	76.9	79.2	81.5	83.8	86.2	88.5	90.8	93.2	95.5	97.8
Extracellular fluxes	Glucose	-117.7	-111.6	-105.7	-100.0	-94.5	-89.1	-83.8	-78.7	-73.8	-69.3	-65.5	-62.1	-59.3	-56.9	-55.0	-53.6	-52.5	-51.8	-51.5	-51.5
	Lactate	253.1	231.5	210.6	190.4	170.9	152.0	133.8	116.2	99.2	83.5	69.5	56.9	45.9	36.1	27.6	20.2	13.9	8.5	4.1	0.6
	Pyruvate	-32.0	-30.7	-29.2	-27.5	-25.8	-23.9	-22.0	-20.0	-17.9	-15.9	-14.0	-12.2	-10.6	-9.0	-7.6	-6.2	-5.0	-3.9	-3.0	-2.2
	Alanine	17.4	16.8	16.3	15.8	15.4	15.0	14.7	14.4	14.1	13.9	13.7	13.5	13.3	13.1	13.0	12.9	12.7	12.6	12.4	12.3
	Arginine	-8.5	-8.6	-8.5	-8.5	-8.4	-8.3	-8.1	-7.9	-7.7	-7.5	-7.3	-7.2	-7.2	-7.2	-7.2	-7.2	-7.3	-7.4	-7.4	-7.5
	Asparagine	-3.0	-2.8	-2.6	-2.4	-2.3	-2.1	-2.0	-1.9	-1.8	-1.7	-1.7	-1.6	-1.6	-1.7	-1.7	-1.7	-1.8	-1.9	-2.0	-2.0
	Aspartate	-14.1	-13.0	-12.1	-11.3	-10.8	-10.3	-10.0	-9.8	-9.8	-9.7	-9.7	-9.7	-9.8	-9.8	-9.8	-9.9	-10.0	-10.0	-10.1	-10.2
	Cysteine	-0.1	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.8	0.8	0.8	0.8	0.7	0.6	0.4	0.3	0.2	0.1	0.0
	Glutamate	4.8	4.8	4.7	4.6	4.5	4.3	4.0	3.7	3.4	3.1	2.8	2.6	2.3	2.1	1.9	1.6	1.4	1.2	1.0	0.8
	Glutamine	-40.5	-40.7	-40.8	-41.0	-41.1	-41.1	-41.2	-41.2	-41.3	-41.2	-41.2	-41.0	-40.8	-40.5	-40.2	-39.9	-39.5	-39.0	-38.5	-37.9
	Glycine	2.2	1.8	1.5	1.2	1.1	1.0	1.0	1.1	1.2	1.3	1.3	1.3	1.2	1.1	0.9	0.6	0.4	0.1	-0.1	-0.4
	Histidine	-1.7	-1.7	-1.8	-1.8	-1.9	-1.9	-1.9	-1.9	-1.9	-1.8	-1.8	-1.8	-1.7	-1.7	-1.7	-1.6	-1.6	-1.6	-1.6	-1.6
	Isoleucine	-7.9	-7.0	-6.2	-5.5	-5.0	-4.5	-4.1	-3.8	-3.5	-3.3	-3.1	-3.0	-2.9	-2.8	-2.8	-2.7	-2.7	-2.7	-2.8	-2.8
	Leucine	-11.4	-10.6	-9.9	-9.2	-8.6	-8.0	-7.5	-7.1	-6.7	-6.4	-6.1	-5.9	-5.8	-5.8	-5.8	-5.9	-6.0	-6.1	-6.3	-6.4
	Lysine	-7.2	-7.5	-7.7	-7.9	-8.0	-8.0	-8.0	-7.9	-7.8	-7.6	-7.5	-7.4	-7.3	-7.3	-7.2	-7.1	-7.1	-7.1	-7.1	-7.1
	Methionine	-3.2	-3.1	-3.1	-3.0	-2.9	-2.8	-2.7	-2.5	-2.4	-2.3	-2.3	-2.2	-2.2	-2.2	-2.2	-2.2	-2.2	-2.3	-2.3	-2.4
	Phenylalanine	-3.5	-3.2	-3.0	-2.8	-2.7	-2.5	-2.4	-2.3	-2.2	-2.1	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.1	-2.1	-2.2	-2.3
	Proline	9.0	10.7	12.1	13.2	14.0	14.7	15.1	15.3	15.4	15.4	15.3	15.1	14.9	14.7	14.4	14.1	13.8	13.5	13.1	12.8
	Serine	-12.0	-11.8	-11.5	-11.2	-11.0	-10.7	-10.5	-10.3	-10.1	-9.9	-9.7	-9.6	-9.5	-9.5	-9.4	-9.4	-9.5	-9.5	-9.6	-9.7
	Threonine	-4.3	-3.9	-3.5	-3.2	-3.0	-2.8	-2.7	-2.7	-2.7	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.9	-2.9
	Tryptophan	-1.0	-1.0	-1.0	-0.9	-0.9	-0.9	-0.8	-0.8	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6
	Tyrosine	-3.6	-3.4	-3.1	-2.9	-2.7	-2.5	-2.2	-2.0	-1.8	-1.7	-1.6	-1.7	-1.7	-1.9	-2.1	-2.4	-2.8	-3.0	-3.3	-3.4
	Valine	-7.7	-6.9	-6.2	-5.7	-5.3	-4.9	-4.7	-4.5	-4.4	-4.4	-4.3	-4.3	-4.2	-4.2	-4.1	-4.0	-4.0	-4.0	-4.0	-4.0
Anabolic fluxes	Carbohydrates	-6.1	-6.1	-6.0	-6.0	-5.9	-5.9	-5.8	-5.7	-5.6	-5.5	-5.5	-5.4	-5.3	-5.3	-5.2	-5.1	-5.1	-5.0	-5.0	-5.1
	DNA	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	RNA	-2.5	-2.5	-2.5	-2.5	-2.4	-2.4	-2.4	-2.3	-2.3	-2.3	-2.3	-2.2	-2.2	-2.2	-2.1	-2.1	-2.1	-2.1	-2.1	-2.1
	Lipids	-1.8	-1.8	-1.8	-1.7	-1.7	-1.7	-1.7	-1.7	-1.6	-1.6	-1.6	-1.6	-1.6	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
	Proteins	-89.2	-88.8	-88.3	-87.6	-86.8	-85.9	-84.9	-83.8	-82.6	-81.4	-80.3	-79.2	-78.1	-77.1	-76.0	-75.1	-74.2	-73.9	-74.0	-74.5
Intracellular fluxes	G6P-F6P	108.5	102.5	96.6	91.0	85.5	80.2	75.1	70.1	65.3	60.9	57.2	53.9	51.2	49.0	47.2	45.8	44.8	44.2	43.8	43.8
	F6P-GAP	108.5	102.5	96.6	91.0	85.5	80.2	75.1	70.1	65.3	60.9	57.2	53.9	51.2	49.0	47.2	45.8	44.8	44.2	43.8	43.8
	GAP-Pyr	215.6	203.6	191.9	180.6	169.7	159.1	148.8	138.9	129.3	120.6	113.1	106.7	101.3	96.8	93.2	90.5	88.5	87.2	86.5	86.4
	Pyr-Pyrm	-37.8	-28.8	-20.5	-12.7	-5.4	1.3	7.6	13.4	18.8	24.0	28.9	33.6	38.1	42.5	46.7	50.7	54.7	58.3	61.7	64.7
	Pyrm-AcCm	-5.3	-1.5	2.6	7.0	11.6	16.3	21.3	26.4	31.6	36.9	42.2	47.4	52.6	57.8	63.0	68.2	73.3	77.8	81.7	85.0
	OAA/AcCm-Citm	16.9	17.2	18.1	19.6	21.5	23.9	26.7	29.9	33.4	37.4	41.8	46.7	52.0	57.7	63.8	70.3	76.9	82.6	87.5	91.6
	Citm-AKGm	-14.8	-14.3	-13.2	-11.5	-9.3	-6.6	-3.4	0.2	4.1	8.5	13.3	18.6	24.3	30.4	36.8	43.7	50.5	56.4	61.3	65.2
	AKGm-SuCm	0.5	-0.3	-0.2	0.8	2.5	5.0	8.1	11.8	16.1	20.9	26.1	31.8	37.9	44.4	51.3	58.5	65.7	71.8	76.8	80.5
	SuCm-Fumm	8.2	5.3	3.6	3.1	3.6	5.2	7.7	10.9	15.0	19.6	24.8	30.5	36.5	43.1	50.0	57.4	64.7	70.9	75.9	79.8
	Fumm-Malm	10.4	7.0	4.9	4.0	4.2	5.4	7.6	10.6	14.4	18.9	24.0	29.7	36.0	42.7	50.0	57.8	65.5	72.1	77.3	81.4
	Malm-OAAm	9.6	11.2	13.1	15.4	18.0	20.9	24.0	27.4	30.9	34.9	39.2	44.0	49.2	54.7	60.6	66.9	73.2	78.8	83.6	87.6
	Malm-Pyrm	32.5	27.3	23.1	19.6	17.0	15.0	13.7	13.0	12.8	13.0	13.3	13.8	14.5	15.3	16.3	17.5	18.6	19.5	20.0	20.2
	Citm-Cit	31.7	31.5	31.3	31.1	30.8	30.5	30.1	29.7	29.3	28.9	28.5	28.1	27.7	27.4	27.0	26.6	26.4	26.2	26.3	26.4
	Cit-AcC/Mal	31.7	31.5	31.3	31.1	30.8	30.5	30.1	29.7	29.3	28.9	28.5	28.1	27.7	27.4	27.0	26.6	26.4	26.2	26.3	26.4
	Mal-Malm	31.7	31.5	31.3	31.1	30.8	30.5	30.1	29.7	29.3	28.9	28.5	28.1	27.7	27.4	27.0	26.6	26.4	26.2	26.3	26.4
	G6P-P5P	3.1	3.1	3.1	3.1	3.0	3.0	3.0	2.9	2.9	2.9	2.8	2.8	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6
	NADH-OP	-24.2	-24.3	-20.0	-11.7	0.4	15.9	34.4	55.7	79.6	105.3	132.5	160.9	190.5	221.4	253.4	286.8	319.6	348.0	371.7	390.8
	FADH2-OP	19.0	13.6	9.8	7.5	6.6	6.9	8.4	10.9	14.4	18.7	23.5	29.0	35.0	41.5	48.5	56.1	63.6	70.0	75.2	79.2
	OP-ATP	-32.1	-40.5	-35.4	-17.9	10.9	50.0	98.6	155.7	220.5	291.3	366.4	445.6	528.7	615.6	706.4	801.0	894.4	975.0	1042.2	1095.7
	ATPwOP	-98.3	-112.6	-124.4	-134.0	-141.6	-147.3	-151.2	-153.6	-154.5	-153.9	-151.8	-148.3	-143.6	-137.6	-130.4	-122.2	-113.9	-108.0	-104.6	-103.6
	ATPtot	-130.4	-153.0	-159.8	-151.9	-130.7	-97.3	-52.7	2.1	66.0	137.4	214.6	297.3	385.2	478.1	575.9	678.9	780.5	867.0	937.6	992.2
	Ala-Pyr	-23.6	-23.0	-22.4	-21.9	-21.5	-21.1	-20.7	-20.4	-20.1	-19.8	-19.5	-19.3	-19.0	-18.8	-18.6	-18.4	-18.2	-18.0	-17.9	-17.7
	Arg-Glu	3.9	3.9	4.0	3.9	3.9	3.8	3.7	3.5	3.4	3.3	3.2	3.1	3.1	3.2	3.2	3.3	3.4	3.5	3.6	3.6
	Asn-Asp	-1.1	-1.3	-1.5	-1.6	-1.7	-1.8	-1.9	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-1.9	-1.8	-1.7	-1.6	-1.5	-1.5	-1.4
	Asp-OAAm	7.3	6.0	5.0	4.1	3.5	3.0	2.7	2.5	2.5	2.5	2.6	2.7	2.8	3.0	3.2	3.4	3.6	3.8	3.9	4.0
	Cys-Pyr	-0.7	-0.8	-1.0	-1.1	-1.3	-1.4	-1.6	-1.8	-1.9	-2.1	-2.1	-2.1	-2.1	-2.0	-1.8	-1.6	-1.4	-1.2	-1.1	-1.0
	Gln-Glu	34.7	35.0	35.2	35.4	35.5	35.6	35.8	35.9	36.0	36.0	36.0	35.9	35.8	35.6	35.4	35.1	34.7	34.3	33.8	33.1
	Glu-AKGm	15.2	14.0	13.0	12.3	11.8	11.6	11.5	11.7	12.0	12.4	12.8	13.2	13.6	14.0	14.4	14.8	15.2	15.4	15.5	15.4
	Gly-Ser	-12.2	-11.7	-11.4	-11.0	-10.8	-10.6	-10.5	-10.5	-10.5	-10.4	-10.3	-10.2	-10.0	-9.7	-9.4	-9.1	-8.7	-8.4	-8.1	-7.9
	His-Glu	-0.3	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
	Ile-AcCm/SuCm	3.9	3.0	2.2	1.6	1.1	0.6	0.3	0.0	-0.2	-0.3	-0.5	-0.6	-0.6	-0.6	-0.7	-0.6	-0.6	-0.6	-0.6	-0.5
	Leu-AcCm	3.6	2.9	2.2	1.6	1.0	0.6	0.1	-0.2	-0.5	-0.7	-0.9	-1.0	-1.0	-0.9	-0.8	-0.7	-0.5	-0.3	-0.2	0.0
	Lys-AcCm	0.5	0.9	1.1	1.3	1.5	1.6	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	Met/Ser-SuCm/Cys	1.7	1.6	1.6	1.5	1.4	1.3	1.2	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.1
	Phe-Tyr	0.3	0.0	-0.1	-0.3	-0.5	-0.6	-0.7	-0.8	-0.8	-0.9	-0.9	-0.9	-0.9	-0.8	-0.8	-0.7	-0.6	-0.5	-0.5	-0.4
	Pro-Glu	-12.6	-14.3	-15.6	-16.7	-17.5	-18.1	-18.5	-18.7	-18.7	-18.6	-18.5	-18.3	-18.1	-17.8	-17.5	-17.1	-16.8	-16.4	-16.1	-15.8
	Ser-Pyr	-8.1	-7.8	-7.6	-7.4	-7.3	-7.2	-7.2	-7.2	-7.2	-7.2	-7.1	-7.0	-6.8	-6.5	-6.2	-5.8	-5.4	-5.0	-4.8	-4.6
	Thr-SuCm	-0.1	-0.5	-0.9	-1.1	-1.3	-1.4	-1.4	-1.4	-1.3	-1.2	-1.2	-1.1	-1.0	-1.0	-0.9	-0.9	-0.8	-0.8	-0.8	-0.8
	Trp-AcCm/Ala	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.6
	Tyr-AcCm/Fumm	2.2	1.7	1.3	0.9	0.6	0.2	0.0	-0.3	-0.6	-0.7	-0.8	-0.7	-0.6	-0.4	0.0	0.3	0.8	1.1	1.4	1.6
	Val-SuCm	2.3	1.5	0.9	0.3	0.0	-0.3	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.6	-0.6

	Time [h]	100.2	102.5	104.8	107.1	109.5	111.8	114.1	116.5	118.8	121.1	123.4	125.8	128.1	130.4
Extracellular fluxes	Glucose	-51.7	-52.2	-52.9	-53.7	-54.7	-55.8	-56.9	-57.8	-58.4	-58.8	-59.1	-59.2	-59.1	-59.0
	Lactate	-2.1	-4.1	-5.3	-5.9	-6.0	-5.4	-4.4	-3.4	-2.4	-1.4	-0.5	0.5	1.4	2.3
	Pyruvate	-1.6	-1.1	-0.7	-0.4	-0.2	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	-0.5	-0.6
	Alanine	12.1	11.9	11.7	11.5	11.3	11.0	10.8	10.5	10.2	9.8	9.5	9.2	8.8	8.5
	Arginine	-7.6	-7.6	-7.6	-7.7	-7.7	-7.7	-7.7	-7.6	-7.5	-7.4	-7.3	-7.2	-7.1	-6.9
	Asparagine	-2.1	-2.2	-2.2	-2.3	-2.4	-2.4	-2.5	-2.5	-2.6	-2.6	-2.6	-2.6	-2.6	-2.6
	Aspartate	-10.2	-10.3	-10.4	-10.4	-10.5	-10.5	-10.6	-10.6	-10.6	-10.5	-10.4	-10.3	-10.2	-10.1
	Cysteine	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.2
	Glutamate	0.6	0.3	0.1	-0.1	-0.4	-0.6	-0.8	-1.1	-1.3	-1.6	-1.8	-2.1	-2.3	-2.6
	Glutamine	-37.2	-36.5	-35.6	-34.7	-33.8	-32.7	-31.7	-30.5	-29.4	-28.2	-27.0	-25.9	-24.7	-23.6
	Glycine	-0.6	-0.9	-1.1	-1.3	-1.5	-1.7	-1.8	-2.0	-2.0	-2.0	-2.0	-1.9	-1.8	-1.7
	Histidine	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.8	-1.8	-1.8	-1.8	-1.8	-1.7	-1.7	-1.6
	Isoleucine	-2.9	-3.0	-3.1	-3.3	-3.4	-3.6	-3.7	-3.8	-3.9	-4.0	-4.1	-4.1	-4.1	-4.2
	Leucine	-6.6	-6.8	-7.0	-7.2	-7.4	-7.5	-7.7	-7.8	-7.9	-7.9	-7.9	-7.9	-7.8	-7.7
	Lysine	-7.1	-7.1	-7.1	-7.0	-7.0	-7.0	-7.0	-6.9	-6.8	-6.7	-6.6	-6.4	-6.2	-6.0
	Methionine	-2.4	-2.4	-2.5	-2.5	-2.6	-2.6	-2.6	-2.7	-2.7	-2.6	-2.6	-2.6	-2.5	-2.5
	Phenylalanine	-2.3	-2.4	-2.5	-2.5	-2.6	-2.6	-2.7	-2.7	-2.7	-2.7	-2.6	-2.6	-2.6	-2.5
	Proline	12.5	12.1	11.8	11.4	11.1	10.7	10.3	9.9	9.5	9.1	8.7	8.4	8.0	7.6
	Serine	-9.8	-9.9	-10.0	-10.1	-10.2	-10.4	-10.5	-10.5	-10.5	-10.4	-10.3	-10.1	-9.9	-9.7
	Threonine	-2.9	-2.9	-3.0	-3.0	-3.0	-3.1	-3.1	-3.1	-3.1	-3.2	-3.2	-3.1	-3.1	-3.1
	Tryptophan	-0.6	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
	Tyrosine	-3.5	-3.6	-3.6	-3.6	-3.5	-3.4	-3.3	-3.1	-2.9	-2.8	-2.6	-2.5	-2.3	-2.2
	Valine	-4.0	-4.0	-4.1	-4.2	-4.2	-4.3	-4.4	-4.5	-4.5	-4.5	-4.6	-4.6	-4.6	-4.6
Anabolic fluxes	Carbohydrates	-5.1	-5.2	-5.3	-5.4	-5.6	-5.7	-5.9	-6.0	-6.0	-6.0	-5.9	-5.8	-5.7	-5.6
	DNA	-0.5	-0.5	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
	RNA	-2.1	-2.1	-2.2	-2.2	-2.3	-2.4	-2.4	-2.5	-2.5	-2.5	-2.4	-2.4	-2.4	-2.3
	Lipids	-1.5	-1.5	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.8	-1.7	-1.7	-1.7	-1.7	-1.6
	Proteins	-75.4	-76.6	-78.2	-80.0	-82.0	-84.1	-86.2	-87.6	-88.1	-87.9	-87.1	-85.8	-84.1	-82.0
Intracellular fluxes	G6P-F6P	43.9	44.3	44.8	45.5	46.2	47.1	48.0	48.7	49.3	49.8	50.1	50.3	50.5	50.5
	F6P-GAP	43.9	44.3	44.8	45.5	46.2	47.1	48.0	48.7	49.3	49.8	50.1	50.3	50.5	50.5
	GAP-Pyr	86.7	87.4	88.4	89.7	91.2	92.9	94.7	96.2	97.3	98.2	98.9	99.3	99.6	99.8
	Pyr-Pyrm	67.5	69.9	71.9	73.5	74.8	75.8	76.5	77.0	77.4	77.7	77.9	78.1	78.2	78.1
	Pyrm-AcCm	87.6	89.7	91.1	91.9	92.1	91.8	91.1	90.4	90.0	89.6	89.5	89.4	89.4	89.5
	OAA/AcCm-Citm	94.8	97.0	98.4	99.0	98.8	97.8	96.4	95.2	94.2	93.6	93.2	93.1	93.1	93.2
	Citm-AKGm	68.0	69.8	70.7	70.6	69.7	68.0	65.8	64.1	63.0	62.4	62.3	62.6	63.2	64.1
	AKGm-SuCm	83.1	84.5	84.8	84.0	82.3	79.7	76.5	74.0	72.2	71.0	70.4	70.3	70.7	71.3
	SuCm-Fumm	82.4	83.8	84.1	83.2	81.4	78.8	75.6	73.0	71.3	70.2	69.8	70.0	70.6	71.6
	Fumm-Malm	84.1	85.6	85.8	84.9	83.0	80.2	76.7	74.0	72.0	70.9	70.3	70.4	70.9	71.8
	Malm-OAAm	90.7	93.0	94.4	95.0	94.9	94.1	92.8	91.6	90.7	90.1	89.7	89.5	89.5	89.5
	Malm-Pyrm	20.2	19.8	19.2	18.3	17.2	16.0	14.6	13.4	12.6	11.9	11.5	11.3	11.3	11.4
	Citm-Cit	26.8	27.2	27.7	28.4	29.1	29.9	30.6	31.1	31.3	31.2	30.9	30.5	29.8	29.1
	Cit-AcC/Mal	26.8	27.2	27.7	28.4	29.1	29.9	30.6	31.1	31.3	31.2	30.9	30.5	29.8	29.1
	Mal-Malm	26.8	27.2	27.7	28.4	29.1	29.9	30.6	31.1	31.3	31.2	30.9	30.5	29.8	29.1
	G6P-P5P	2.6	2.7	2.7	2.8	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.0	2.9	2.9
	NADH-OP	405.1	414.6	419.5	420.0	416.4	409.3	399.7	392.0	386.7	383.6	382.5	383.1	385.0	388.0
	FADH2-OP	81.9	83.5	83.8	83.1	81.3	78.7	75.5	73.0	71.4	70.5	70.4	70.8	71.7	73.0
	OP-ATP	1135.6	1161.7	1174.4	1174.5	1163.0	1141.2	1112.6	1089.5	1073.8	1064.9	1061.9	1063.9	1069.9	1079.4
	ATPwOP	-104.9	-108.6	-114.4	-122.1	-131.4	-142.1	-153.1	-160.6	-164.3	-164.7	-162.1	-157.2	-150.2	-141.5
	ATPtot	1030.6	1053.1	1060.1	1052.5	1031.6	999.1	959.5	928.9	909.5	900.2	899.8	906.7	919.8	937.9
	Ala-Pyr	-17.6	-17.5	-17.4	-17.3	-17.2	-17.1	-17.0	-16.8	-16.5	-16.1	-15.7	-15.3	-14.8	-14.3
	Arg-Glu	3.6	3.6	3.6	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8	2.7	2.7	2.7
	Asn-Asp	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.5	-1.5	-1.5	-1.4	-1.4	-1.3	-1.3	-1.2
	Asp-OAAm	4.1	4.1	4.0	4.0	3.9	3.8	3.6	3.5	3.5	3.5	3.5	3.5	3.6	3.7
	Cys-Pyr	-0.9	-0.9	-0.9	-1.0	-1.0	-1.1	-1.2	-1.3	-1.3	-1.3	-1.3	-1.2	-1.1	-1.0
	Gln-Glu	32.4	31.6	30.6	29.6	28.5	27.4	26.1	24.9	23.7	22.6	21.4	20.4	19.3	18.3
	Glu-AKGm	15.1	14.7	14.1	13.4	12.6	11.7	10.8	9.9	9.2	8.6	8.1	7.7	7.5	7.2
	Gly-Ser	-7.8	-7.7	-7.7	-7.7	-7.7	-7.8	-7.8	-7.9	-7.9	-7.8	-7.8	-7.7	-7.6	-7.5
	His-Glu	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
	Ile-AcCm/SuCm	-0.5	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.1	0.0	0.1	0.1	0.3	0.4	0.5
	Leu-AcCm	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5
	Lys-AcCm	1.4	1.3	1.2	1.0	0.9	0.7	0.5	0.4	0.2	0.1	0.0	0.0	-0.1	-0.1
	Met/Ser-SuCm/Cys	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1
	Phe-Tyr	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4
	Pro-Glu	-15.5	-15.2	-14.9	-14.6	-14.3	-14.0	-13.7	-13.4	-13.0	-12.6	-12.2	-11.8	-11.4	-10.9
	Ser-Pyr	-4.4	-4.3	-4.3	-4.3	-4.3	-4.4	-4.6	-4.6	-4.7	-4.7	-4.7	-4.7	-4.6	-4.6
	Thr-SuCm	-0.8	-0.8	-0.9	-0.9	-1.0	-1.0	-1.1	-1.2	-1.2	-1.2	-1.1	-1.1	-1.0	-0.9
	Trp-AcCm/Ala	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	Tyr-AcCm/Fumm	1.7	1.8	1.8	1.7	1.6	1.4	1.2	1.0	0.8	0.6	0.5	0.4	0.3	0.2
	Val-SuCm	-0.6	-0.6	-0.7	-0.7	-0.8	-0.8	-0.9	-0.9	-0.9	-0.8	-0.7	-0.6	-0.5	-0.4

Table S2 (continued)

		Mean values (n=4) [µmol/g/h]									
	Time [h]	132.8	135.1	137.4	139.7	142.1	144.4	146.7	149.1	151.4	153.7
Extracellular fluxes	Glucose	-58.7	-58.4	-58.1	-57.7	-57.3	-56.8	-56.4	-55.9	-55.5	-55.0
	Lactate	3.3	4.2	5.2	6.2	7.3	8.4	9.6	10.9	12.3	13.7
	Pyruvate	-0.7	-0.8	-1.0	-1.1	-1.2	-1.3	-1.4	-1.4	-1.5	-1.5
	Alanine	8.1	7.8	7.4	7.0	6.6	6.2	5.7	5.2	4.6	4.1
	Arginine	-6.8	-6.6	-6.4	-6.2	-6.1	-5.9	-5.8	-5.6	-5.5	-5.4
	Asparagine	-2.6	-2.6	-2.5	-2.5	-2.5	-2.5	-2.4	-2.4	-2.4	-2.3
	Aspartate	-10.0	-9.9	-9.7	-9.6	-9.4	-9.2	-9.0	-8.7	-8.5	-8.2
	Cysteine	-0.3	-0.4	-0.5	-0.6	-0.7	-0.7	-0.8	-0.8	-0.7	-0.7
	Glutamate	-2.8	-3.1	-3.4	-3.6	-3.9	-4.2	-4.4	-4.7	-4.9	-5.2
	Glutamine	-22.5	-21.4	-20.3	-19.3	-18.3	-17.3	-16.3	-15.4	-14.5	-13.6
	Glycine	-1.5	-1.3	-1.1	-0.9	-0.7	-0.6	-0.5	-0.5	-0.5	-0.6
	Histidine	-1.6	-1.5	-1.5	-1.4	-1.4	-1.3	-1.3	-1.2	-1.2	-1.2
	Isoleucine	-4.2	-4.2	-4.2	-4.1	-4.1	-4.1	-4.0	-3.9	-3.8	-3.8
	Leucine	-7.5	-7.4	-7.2	-7.1	-6.9	-6.7	-6.6	-6.4	-6.3	-6.1
	Lysine	-5.8	-5.6	-5.3	-5.1	-4.9	-4.7	-4.6	-4.4	-4.3	-4.2
	Methionine	-2.4	-2.3	-2.2	-2.1	-2.1	-2.0	-1.9	-1.9	-1.8	-1.8
	Phenylalanine	-2.5	-2.4	-2.3	-2.2	-2.2	-2.1	-2.0	-2.0	-1.9	-1.9
	Proline	7.3	6.9	6.6	6.3	6.0	5.8	5.6	5.4	5.2	5.1
	Serine	-9.5	-9.2	-8.9	-8.6	-8.3	-8.1	-7.8	-7.6	-7.3	-7.1
	Threonine	-3.1	-3.1	-3.1	-3.1	-3.0	-3.0	-2.9	-2.8	-2.8	-2.7
	Tryptophan	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
	Tyrosine	-2.0	-1.9	-1.7	-1.6	-1.5	-1.4	-1.4	-1.4	-1.4	-1.4
	Valine	-4.6	-4.6	-4.6	-4.6	-4.6	-4.5	-4.5	-4.4	-4.3	-4.2
Anabolic fluxes	Carbohydrates	-5.4	-5.2	-5.1	-4.9	-4.6	-4.4	-4.2	-4.0	-3.8	-3.6
	DNA	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4
	RNA	-2.2	-2.2	-2.1	-2.0	-1.9	-1.8	-1.7	-1.7	-1.6	-1.5
	Lipids	-1.6	-1.5	-1.5	-1.4	-1.4	-1.3	-1.2	-1.2	-1.1	-1.1
	Proteins	-79.6	-77.0	-74.1	-71.2	-68.2	-65.2	-62.2	-59.1	-56.0	-52.8
Intracellular fluxes	G6P-F6P	50.5	50.5	50.4	50.3	50.2	50.1	50.0	49.8	49.7	49.6
	F6P-GAP	50.5	50.5	50.4	50.3	50.2	50.1	50.0	49.8	49.7	49.6
	GAP-Pyr	99.9	99.8	99.7	99.6	99.4	99.2	99.0	98.8	98.5	98.3
	Pyr-Pyrm	78.1	77.9	77.8	77.5	77.3	77.0	76.7	76.3	76.0	75.7
	Pyrm-AcCm	89.7	89.9	90.2	90.5	90.7	90.9	91.1	91.2	91.4	91.6
	OAA/AcCm-Citm	93.5	93.8	94.2	94.7	95.3	96.0	96.8	97.7	98.8	99.9
	Citm-AKGm	65.2	66.5	67.9	69.5	71.1	72.9	74.7	76.8	78.9	81.2
	AKGm-SuCm	72.3	73.5	74.9	76.5	78.2	80.0	81.9	84.0	86.3	88.7
	SuCm-Fumm	72.9	74.4	76.2	78.2	80.2	82.3	84.5	86.9	89.4	92.0
	Fumm-Malm	73.0	74.5	76.2	78.1	80.1	82.3	84.6	87.0	89.6	92.4
	Malm-OAAm	89.6	89.8	90.1	90.4	90.9	91.5	92.2	93.1	94.1	95.2
	Malm-Pyrm	11.6	12.0	12.4	12.9	13.4	13.9	14.4	14.9	15.4	15.9
	Citm-Cit	28.3	27.3	26.3	25.3	24.2	23.2	22.1	21.0	19.9	18.7
	Cit-AcC/Mal	28.3	27.3	26.3	25.3	24.2	23.2	22.1	21.0	19.9	18.7
	Mal-Malm	28.3	27.3	26.3	25.3	24.2	23.2	22.1	21.0	19.9	18.7
	G6P-P5P	2.8	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.0	1.9
	NADH-OP	391.9	396.7	402.2	407.9	413.8	419.8	426.2	432.9	440.1	447.6
	FADH2-OP	74.6	76.5	78.6	80.9	83.2	85.6	88.2	90.8	93.6	96.5
	OP-ATP	1091.6	1106.4	1123.3	1141.1	1159.2	1178.0	1197.8	1218.6	1240.6	1263.7
	ATPwOP	-131.3	-119.9	-107.5	-94.6	-81.5	-68.2	-54.6	-40.7	-26.4	-11.9
	ATPtot	960.3	986.4	1015.8	1046.5	1077.7	1109.9	1143.2	1177.9	1214.1	1251.8
	Ala-Pyr	-13.8	-13.2	-12.7	-12.1	-11.5	-10.8	-10.1	-9.4	-8.6	-7.8
	Arg-Glu	2.6	2.6	2.6	2.5	2.5	2.5	2.5	2.6	2.6	2.6
	Asn-Asp	-1.1	-1.0	-0.9	-0.8	-0.7	-0.5	-0.4	-0.3	-0.2	-0.1
	Asp-OAAm	3.8	4.0	4.1	4.3	4.4	4.5	4.6	4.6	4.7	4.7
	Cys-Pyr	-0.9	-0.7	-0.6	-0.4	-0.3	-0.2	-0.1	0.0	0.1	0.1
	Gln-Glu	17.4	16.4	15.6	14.7	13.9	13.1	12.3	11.6	10.9	10.2
	Glu-AKGm	7.1	7.0	7.0	7.0	7.1	7.1	7.2	7.3	7.4	7.5
	Gly-Ser	-7.4	-7.3	-7.2	-7.1	-6.9	-6.7	-6.4	-6.1	-5.7	-5.3
	His-Glu	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0.0	0.0
	Ile-AcCm/SuCm	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.3	1.4
	Leu-AcCm	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5
	Lys-AcCm	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0.0	0.1	0.3
	Met/Ser-SuCm/Cys	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Phe-Tyr	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	0.0
	Pro-Glu	-10.5	-10.0	-9.6	-9.1	-8.7	-8.4	-8.0	-7.7	-7.4	-7.2
	Ser-Pyr	-4.5	-4.5	-4.5	-4.4	-4.3	-4.1	-3.8	-3.5	-3.2	-2.8
	Thr-SuCm	-0.8	-0.7	-0.6	-0.4	-0.3	-0.2	-0.1	-0.1	0.0	0.1
	Trp-AcCm/Ala	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6
	Tyr-AcCm/Fumm	0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	0.1	0.2	0.4
	Val-SuCm	-0.3	-0.1	0.1	0.2	0.4	0.5	0.7	0.8	0.9	1.0

Time [h]	156.1	158.4	160.7	163.0	165.4	167.7	170.0	172.4	174.7	177.0	179.3	181.7	184.0	186.3	188.7	191.0	193.3	195.6	198.0	200.3
Glucose	-54.6	-54.1	-53.7	-53.2	-52.9	-52.5	-52.2	-51.9	-51.7	-51.5	-51.4	-51.2	-51.1	-51.0	-51.0	-50.8	-50.5	-50.2	-49.7	-49.1
Lactate	15.2	16.7	18.3	19.9	21.4	22.6	23.7	24.6	25.3	25.9	26.4	26.7	26.8	26.9	26.8	26.5	26.1	25.6	24.9	24.1
Pyruvate	-1.5	-1.5	-1.5	-1.5	-1.5	-1.4	-1.4	-1.3	-1.3	-1.2	-1.1	-1.1	-1.0	-0.9	-0.8	-0.7	-0.6	-0.5	-0.4	-0.4
Alanine	3.5	2.9	2.2	1.6	1.0	0.4	-0.2	-0.7	-1.2	-1.7	-2.1	-2.6	-3.0	-3.5	-3.9	-4.2	-4.5	-4.7	-4.9	-5.0
Arginine	-5.3	-5.2	-5.1	-5.0	-4.9	-4.7	-4.6	-4.5	-4.3	-4.1	-4.0	-3.8	-3.6	-3.4	-3.2	-3.0	-2.8	-2.6	-2.4	-2.2
Asparagine	-2.3	-2.2	-2.2	-2.2	-2.1	-2.1	-2.0	-2.0	-1.9	-1.8	-1.8	-1.7	-1.6	-1.5	-1.4	-1.3	-1.3	-1.2	-1.1	-1.0
Aspartate	-7.9	-7.6	-7.2	-6.9	-6.5	-6.2	-5.8	-5.5	-5.1	-4.8	-4.4	-4.0	-3.6	-3.2	-2.8	-2.5	-2.1	-1.8	-1.6	-1.3
Cysteine	-0.7	-0.6	-0.5	-0.4	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Glutamate	-5.4	-5.7	-5.9	-6.1	-6.3	-6.4	-6.5	-6.5	-6.5	-6.4	-6.3	-6.1	-5.9	-5.7	-5.4	-5.1	-4.8	-4.5	-4.1	-3.8
Glutamine	-12.7	-11.9	-11.1	-10.2	-9.5	-8.7	-8.0	-7.3	-6.6	-6.0	-5.3	-4.7	-4.1	-3.5	-2.9	-2.4	-1.9	-1.5	-1.1	-0.7
Glycine	-0.7	-0.8	-0.9	-1.1	-1.2	-1.3	-1.3	-1.4	-1.4	-1.4	-1.3	-1.3	-1.2	-1.1	-1.0	-0.8	-0.7	-0.6	-0.5	-0.4
Histidine	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.0	-1.0	-1.0	-0.9	-0.9	-0.8	-0.8	-0.7	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4
Isoleucine	-3.7	-3.5	-3.4	-3.3	-3.2	-3.1	-3.0	-2.8	-2.7	-2.6	-2.5	-2.4	-2.3	-2.2	-2.1	-2.0	-1.8	-1.7	-1.6	-1.5
Leucine	-6.0	-5.8	-5.7	-5.6	-5.4	-5.3	-5.1	-4.9	-4.8	-4.6	-4.4	-4.1	-3.9	-3.7	-3.4	-3.2	-3.0	-2.7	-2.5	-2.3
Lysine	-4.1	-4.1	-4.0	-4.0	-3.9	-3.8	-3.7	-3.6	-3.4	-3.3	-3.1	-2.9	-2.7	-2.5	-2.3	-2.1	-1.9	-1.7	-1.5	-1.4
Methionine	-1.8	-1.7	-1.7	-1.7	-1.7	-1.6	-1.6	-1.6	-1.5	-1.5	-1.4	-1.4	-1.3	-1.2	-1.2	-1.1	-1.0	-0.9	-0.9	-0.8
Phenylalanine	-1.9	-1.8	-1.8	-1.7	-1.7	-1.7	-1.6	-1.6	-1.5	-1.5	-1.4	-1.3	-1.3	-1.2	-1.1	-1.0	-1.0	-0.9	-0.8	-0.7
Proline	5.0	4.9	4.8	4.7	4.7	4.6	4.5	4.3	4.2	4.0	3.9	3.7	3.5	3.3	3.1	2.9	2.8	2.8	2.7	2.7
Serine	-6.9	-6.7	-6.5	-6.4	-6.2	-6.0	-5.8	-5.5	-5.3	-5.1	-4.8	-4.5	-4.3	-4.0	-3.7	-3.4	-3.1	-2.9	-2.7	-2.5
Threonine	-2.6	-2.5	-2.4	-2.3	-2.2	-2.1	-2.0	-1.9	-1.8	-1.7	-1.6	-1.5	-1.4	-1.4	-1.3	-1.2	-1.1	-1.0	-0.9	-0.8
Tryptophan	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4	-0.4	-0.4
Tyrosine	-1.4	-1.4	-1.5	-1.5	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.5	-1.5	-1.4	-1.3	-1.2	-1.1	-1.1	-1.0
Valine	-4.1	-4.0	-3.8	-3.7	-3.6	-3.5	-3.4	-3.2	-3.1	-3.0	-2.9	-2.8	-2.7	-2.6	-2.5	-2.4	-2.3	-2.1	-2.0	-1.9
Carbohydrates	-3.4	-3.2	-2.9	-2.7	-2.5	-2.3	-2.1	-1.9	-1.7	-1.5	-1.4	-1.2	-1.0	-0.9	-0.7	-0.6	-0.5	-0.4	-0.4	-0.4
DNA	-0.3	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0
RNA	-1.4	-1.3	-1.2	-1.1	-1.0	-0.9	-0.9	-0.8	-0.7	-0.6	-0.6	-0.5	-0.4	-0.4	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2
Lipids	-1.0	-0.9	-0.9	-0.8	-0.7	-0.7	-0.6	-0.6	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1
Proteins	-49.6	-46.3	-43.0	-39.7	-36.6	-33.5	-30.6	-27.8	-25.1	-22.5	-20.0	-17.5	-15.1	-12.7	-10.5	-8.7	-7.4	-6.4	-5.8	-5.7
G6P-F6P	49.4	49.3	49.2	49.1	49.1	49.1	49.1	49.1	49.1	49.2	49.3	49.4	49.6	49.7	49.9	49.9	49.8	49.5	49.1	48.5
F6P-GAP	49.4	49.3	49.2	49.1	49.1	49.1	49.1	49.1	49.1	49.2	49.3	49.4	49.6	49.7	49.9	49.9	49.8	49.5	49.1	48.5
GAP-Pyr	98.1	98.0	97.8	97.7	97.6	97.6	97.6	97.7	97.9	98.1	98.3	98.6	98.9	99.2	99.6	99.6	99.4	98.9	98.1	96.9
Pyr-Pyrm	75.4	75.1	74.8	74.5	74.4	74.4	74.5	74.7	75.1	75.5	76.1	76.8	77.6	78.5	79.4	80.1	80.4	80.5	80.3	79.7
Pyrm-AcCm	91.8	92.1	92.3	92.6	92.8	93.1	93.4	93.7	94.0	94.3	94.7	95.0	95.4	95.8	96.1	95.9	95.2	93.9	92.1	89.8
OAA/AcCm-Citm	101.2	102.6	104.2	105.7	107.1	108.3	109.3	110.2	111.0	111.7	112.2	112.6	112.8	113.0	112.9	112.2	110.7	108.5	105.6	101.8
Citm-AKGm	83.6	86.2	88.9	91.6	94.1	96.4	98.5	100.4	102.1	103.7	105.1	106.3	107.5	108.5	109.2	109.1	108.1	106.2	103.5	99.8
AKGm-SuCm	91.3	94.0	96.8	99.7	102.3	104.6	106.7	108.6	110.2	111.6	112.8	113.8	114.7	115.4	115.7	115.1	113.5	110.9	107.4	102.8
SuCm-Fumm	94.8	97.8	100.8	103.9	106.6	109.1	111.3	113.3	115.0	116.5	117.8	118.9	119.8	120.5	120.8	120.2	118.4	115.7	111.8	106.8
Fumm-Malm	95.3	98.4	101.7	105.0	107.9	110.5	112.9	115.0	116.8	118.4	119.7	120.8	121.7	122.5	122.8	122.0	120.2	117.3	113.4	108.2
Malm-OAAm	96.5	97.9	99.4	101.0	102.4	103.7	104.8	105.8	106.7	107.5	108.2	108.8	109.3	109.7	109.8	109.3	108.1	106.2	103.6	100.2
Malm-Pyrm	16.4	17.0	17.5	18.1	18.5	18.8	18.9	19.0	19.0	18.8	18.6	18.3	17.8	17.3	16.7	15.8	14.7	13.4	11.9	10.1
Citm-Cit	17.6	16.4	15.3	14.1	13.0	11.9	10.9	9.9	8.9	8.0	7.1	6.2	5.4	4.5	3.7	3.1	2.6	2.3	2.1	2.0
Cit-AcC/Mal	17.6	16.4	15.3	14.1	13.0	11.9	10.9	9.9	8.9	8.0	7.1	6.2	5.4	4.5	3.7	3.1	2.6	2.3	2.1	2.0
Mal-Malm	17.6	16.4	15.3	14.1	13.0	11.9	10.9	9.9	8.9	8.0	7.1	6.2	5.4	4.5	3.7	3.1	2.6	2.3	2.1	2.0
G6P-P5P	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2
NADH-OP	455.5	463.9	472.6	481.4	489.4	496.8	503.5	509.6	515.2	520.2	524.6	528.7	532.2	535.4	537.3	535.3	529.3	519.3	505.0	486.4
FADH2-OP	99.5	102.7	106.1	109.3	112.3	115.0	117.3	119.4	121.3	122.9	124.2	125.3	126.2	126.9	127.2	126.4	124.5	121.4	117.2	111.7
OP-ATP	1288.1	1313.8	1340.7	1367.4	1392.0	1414.4	1434.8	1453.2	1469.8	1484.7	1497.9	1509.6	1519.9	1529.0	1534.1	1528.0	1510.1	1480.2	1438.2	1383.7
ATPwOP	2.9	18.1	33.7	49.2	63.9	77.9	91.3	104.1	116.3	128.1	139.3	150.2	160.6	170.7	179.9	186.1	189.3	189.5	186.7	180.9
ATPtot	1291.1	1331.9	1374.4	1416.6	1455.9	1492.4	1526.1	1557.4	1586.2	1612.8	1637.2	1659.8	1680.5	1699.7	1714.0	1714.1	1699.4	1669.8	1624.9	1564.6
Ala-Pyr	-6.9	-6.1	-5.2	-4.2	-3.4	-2.6	-1.8	-1.0	-0.3	0.4	1.0	1.7	2.3	2.9	3.5	3.9	4.3	4.6	4.8	4.9
Arg-Glu	2.7	2.8	2.8	2.9	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9	2.8	2.7	2.6	2.5	2.4	2.2	2.1	1.9
Asn-Asp	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8
Asp-OAAm	4.7	4.7	4.7	4.7	4.7	4.6	4.5	4.4	4.3	4.1	4.0	3.8	3.6	3.4	3.1	2.9	2.6	2.3	2.0	1.7
Cys-Pyr	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.4
Gln-Glu	9.6	8.9	8.3	7.7	7.1	6.6	6.0	5.5	5.0	4.5	4.0	3.6	3.1	2.7	2.3	1.9	1.5	1.1	0.7	0.3
Glu-AKGm	7.6	7.8	7.9	8.1	8.2	8.2	8.2	8.2	8.1	7.9	7.7	7.5	7.2	6.9	6.5	6.0	5.4	4.7	3.9	3.0
Gly-Ser	-4.9	-4.4	-3.9	-3.4	-2.9	-2.5	-2.1	-1.7	-1.4	-1.2	-0.9	-0.7	-0.5	-0.4	-0.2	-0.1	-0.1	-0.1	-0.1	-0.2
His-Glu	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3
Ile-AcCm/SuCm	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.4	1.3	1.2
Leu-AcCm	1.7	1.8	2.0	2.1	2.2	2.4	2.4	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.4	2.3	2.2	2.0	1.8
Lys-AcCm	0.4	0.6	0.8	1.0	1.1	1.3	1.4	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.4	1.3	1.2	1.1	1.0
Met/Ser-SuCm/Cys	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.7
Phe-Tyr	0.1	0.1	0.2	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.5
Pro-Glu	-6.9	-6.7	-6.5	-6.3	-6.1	-5.9	-5.7	-5.4	-5.2	-4.9	-4.7	-4.4	-4.1	-3.8	-3.5	-3.3	-3.1	-3.0	-3.0	-3.0
Ser-Pyr	-2.4	-1.9	-1.4	-0.8	-0.4	0.1	0.4	0.7	1.0	1.2	1.4	1.6	1.7	1.7	1.7	1.7	1.6	1.5	1.4	1.1
Thr-SuCm	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.6
Trp-AcCm/Ala	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Tyr-AcCm/Fumm	0.5	0.7	0.9	1.1	1.3	1.4	1.6	1.7	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.7	1.6	1.4
Val-SuCm	1.1	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.6	1.5

Time [h]	202.6	205.0	207.3	209.6	212.0	214.3	216.6	218.9	221.3	223.6	225.9	228.3	230.6	232.9
Glucose	-48.4	-47.5	-46.5	-45.4	-44.1	-42.9	-41.8	-40.8	-39.9	-39.1	-38.5	-37.9	-37.5	-37.2
Lactate	23.1	21.9	20.6	19.2	17.5	16.0	14.7	13.5	12.5	11.7	11.1	10.6	10.3	10.2
Pyruvate	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
Alanine	-5.0	-5.0	-4.9	-4.8	-4.6	-4.4	-4.2	-4.1	-4.0	-3.8	-3.7	-3.7	-3.6	-3.6
Arginine	-2.0	-1.9	-1.7	-1.5	-1.4	-1.2	-1.1	-1.0	-0.9	-0.8	-0.8	-0.7	-0.7	-0.7
Asparagine	-0.9	-0.8	-0.8	-0.7	-0.6	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.2
Aspartate	-1.1	-0.8	-0.7	-0.5	-0.4	-0.3	-0.1	-0.1	0.0	0.1	0.1	0.2	0.2	0.2
Cysteine	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Glutamate	-3.5	-3.1	-2.7	-2.4	-2.0	-1.6	-1.3	-1.1	-0.8	-0.6	-0.5	-0.4	-0.3	-0.3
Glutamine	-0.4	0.0	0.2	0.5	0.7	0.8	1.0	1.1	1.2	1.3	1.4	1.4	1.4	1.4
Glycine	-0.3	-0.3	-0.2	-0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Histidine	-0.4	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Isoleucine	-1.3	-1.2	-1.1	-0.9	-0.8	-0.6	-0.5	-0.4	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1
Leucine	-2.1	-1.9	-1.7	-1.5	-1.3	-1.1	-0.9	-0.8	-0.6	-0.6	-0.5	-0.4	-0.4	-0.4
Lysine	-1.3	-1.1	-1.0	-0.9	-0.8	-0.8	-0.7	-0.6	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5
Methionine	-0.8	-0.7	-0.6	-0.6	-0.5	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Phenylalanine	-0.7	-0.6	-0.5	-0.5	-0.4	-0.3	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
Proline	2.8	2.9	3.0	3.2	3.4	3.6	3.7	3.8	4.0	4.0	4.1	4.1	4.1	4.1
Serine	-2.3	-2.1	-1.9	-1.8	-1.6	-1.5	-1.4	-1.3	-1.2	-1.1	-1.1	-1.0	-1.0	-1.0
Threonine	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.2
Tryptophan	-0.4	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1
Tyrosine	-0.9	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	0.0	0.0	0.1	0.1	0.1	0.1
Valine	-1.7	-1.6	-1.4	-1.2	-1.1	-0.9	-0.7	-0.6	-0.5	-0.4	-0.4	-0.3	-0.3	-0.3
Carbohydrates	-0.4	-0.4	-0.5	-0.6	-0.7	-0.9	-1.0	-1.1	-1.1	-1.2	-1.2	-1.3	-1.3	-1.3
DNA	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
RNA	-0.2	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Lipids	-0.1	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.4
Proteins	-5.9	-6.6	-7.6	-9.1	-10.9	-12.7	-14.2	-15.5	-16.6	-17.4	-18.0	-18.4	-18.5	-18.5
G6P-F6P	47.7	46.8	45.7	44.5	43.0	41.6	40.3	39.2	38.2	37.3	36.6	36.0	35.6	35.3
F6P-GAP	47.7	46.8	45.7	44.5	43.0	41.6	40.3	39.2	38.2	37.3	36.6	36.0	35.6	35.3
GAP-Pyr	95.4	93.6	91.4	88.8	85.9	83.0	80.5	78.2	76.2	74.4	73.0	71.8	70.9	70.3
Pyr-Pyrm	78.8	77.5	75.9	74.0	71.6	69.4	67.3	65.4	63.8	62.4	61.2	60.3	59.5	59.0
Pyrm-AcCm	86.8	83.3	79.2	74.5	69.2	64.2	59.7	55.8	52.5	49.8	47.6	45.9	44.9	44.3
OAA/AcCm-Citm	97.3	92.0	85.9	79.0	71.3	64.0	57.6	52.0	47.3	43.4	40.4	38.2	36.8	36.2
Citm-AKGm	95.2	89.7	83.2	75.7	67.4	59.5	52.6	46.5	41.4	37.3	34.0	31.7	30.2	29.6
AKGm-SuCm	97.2	90.6	82.9	74.1	64.3	55.1	47.0	40.0	34.1	29.3	25.6	22.9	21.3	20.7
SuCm-Fumm	100.7	93.5	85.2	75.6	65.1	55.1	46.3	38.7	32.4	27.2	23.2	20.3	18.6	18.0
Fumm-Malm	102.0	94.5	85.9	76.1	65.2	55.0	46.0	38.2	31.6	26.3	22.2	19.2	17.5	16.9
Malm-OAAm	96.0	91.1	85.3	78.8	71.5	64.6	58.5	53.3	48.8	45.1	42.2	40.1	38.7	38.2
Malm-Pyrm	8.1	5.8	3.3	0.5	-2.4	-5.2	-7.5	-9.6	-11.3	-12.6	-13.6	-14.3	-14.7	-14.7
Citm-Cit	2.1	2.3	2.7	3.2	3.9	4.5	5.0	5.5	5.9	6.2	6.4	6.5	6.6	6.6
Cit-AcC/Mal	2.1	2.3	2.7	3.2	3.9	4.5	5.0	5.5	5.9	6.2	6.4	6.5	6.6	6.6
Mal-Malm	2.1	2.3	2.7	3.2	3.9	4.5	5.0	5.5	5.9	6.2	6.4	6.5	6.6	6.6
G6P-P5P	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
NADH-OP	463.5	436.2	404.4	368.1	327.7	289.5	255.7	226.5	201.8	181.6	165.9	154.5	147.5	144.7
FADH2-OP	105.1	97.2	88.1	77.8	66.3	55.5	45.9	37.7	30.8	25.2	20.9	17.8	16.0	15.4
OP-ATP	1316.5	1236.4	1143.2	1036.9	918.7	806.9	708.3	622.9	550.8	491.9	446.0	413.0	392.7	384.7
ATPwOP	171.9	159.9	144.7	126.4	105.2	85.0	67.3	52.0	39.2	28.9	20.9	15.3	12.0	11.0
ATPtot	1488.4	1396.3	1287.9	1163.3	1023.9	891.9	775.6	674.9	590.1	520.8	467.0	428.4	404.7	395.7
Ala-Pyr	4.9	4.8	4.6	4.4	4.0	3.6	3.3	3.0	2.8	2.6	2.5	2.3	2.3	2.2
Arg-Glu	1.7	1.5	1.3	1.1	0.8	0.6	0.4	0.2	0.0	-0.1	-0.2	-0.2	-0.3	-0.3
Asn-Asp	0.7	0.5	0.4	0.3	0.1	-0.1	-0.2	-0.3	-0.4	-0.5	-0.5	-0.6	-0.6	-0.6
Asp-OAAm	1.3	1.0	0.6	0.2	-0.2	-0.6	-0.9	-1.2	-1.5	-1.7	-1.8	-1.9	-2.0	-2.0
Cys-Pyr	0.4	0.3	0.1	0.0	-0.1	-0.3	-0.4	-0.5	-0.6	-0.6	-0.7	-0.7	-0.7	-0.7
Gln-Glu	0.0	-0.4	-0.7	-1.0	-1.4	-1.6	-1.9	-2.1	-2.3	-2.4	-2.5	-2.6	-2.6	-2.6
Glu-AKGm	2.0	0.9	-0.4	-1.7	-3.1	-4.4	-5.5	-6.5	-7.3	-7.9	-8.4	-8.7	-8.9	-8.9
Gly-Ser	-0.3	-0.5	-0.7	-0.9	-1.2	-1.5	-1.7	-1.9	-2.0	-2.2	-2.3	-2.3	-2.4	-2.3
His-Glu	0.2	0.2	0.1	0.1	0.0	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.3
Ile-AcCm/SuCm	1.1	0.9	0.7	0.5	0.3	0.1	-0.1	-0.3	-0.4	-0.5	-0.6	-0.7	-0.7	-0.7
Leu-AcCm	1.6	1.3	1.0	0.7	0.3	0.0	-0.3	-0.6	-0.8	-1.0	-1.1	-1.2	-1.2	-1.2
Lys-AcCm	0.8	0.6	0.5	0.2	0.0	-0.2	-0.4	-0.5	-0.6	-0.7	-0.8	-0.9	-0.9	-0.9
Met/Ser-SuCm/Cys	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Phe-Tyr	0.5	0.4	0.3	0.1	0.0	-0.1	-0.3	-0.4	-0.4	-0.5	-0.6	-0.6	-0.6	-0.6
Pro-Glu	-3.0	-3.1	-3.3	-3.5	-3.8	-4.1	-4.3	-4.5	-4.6	-4.7	-4.8	-4.9	-4.9	-4.8
Ser-Pyr	0.9	0.6	0.2	-0.2	-0.7	-1.1	-1.5	-1.8	-2.1	-2.3	-2.5	-2.6	-2.6	-2.6
Thr-SuCm	0.5	0.3	0.1	0.0	-0.3	-0.5	-0.6	-0.8	-0.9	-1.0	-1.1	-1.1	-1.1	-1.1
Trp-AcCm/Ala	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Tyr-AcCm/Fumm	1.2	1.0	0.7	0.5	0.2	-0.1	-0.4	-0.6	-0.7	-0.9	-1.0	-1.1	-1.1	-1.1
Val-SuCm	1.4	1.2	0.9	0.7	0.4	0.1	-0.1	-0.3	-0.5	-0.6	-0.7	-0.8	-0.8	-0.8

Table S2 (continued)

90 % confidence intervals (n=4) [µmol/g/h]

	Time [h]	30.3	32.6	34.9	37.3	39.6	41.9	44.3	46.6	48.9	51.2
Extracellular fluxes	**Glucose**	76.9	61.9	49.2	38.4	29.4	22.1	16.3	11.9	8.9	6.5
	Lactate	53.4	49.3	45.2	40.9	36.7	32.5	28.4	24.3	20.4	17.0
	Pyruvate	4.8	4.0	3.5	3.1	2.9	2.8	2.8	2.7	2.6	2.4
	Alanine	3.0	2.9	2.7	2.5	2.4	2.2	2.0	1.7	1.5	1.3
	Arginine	5.8	5.5	5.0	4.5	4.0	3.3	2.6	1.9	1.2	0.7
	Asparagine	1.5	1.4	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2
	Aspartate	4.7	4.1	3.7	3.5	3.7	4.1	4.7	5.4	6.2	6.7
	Cysteine	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Glutamate	0.7	0.5	0.5	0.7	0.9	1.2	1.4	1.7	1.9	2.1
	Glutamine	4.8	4.3	3.8	3.4	3.0	2.8	2.6	2.5	2.4	2.4
	Glycine	7.1	6.7	6.2	5.6	5.0	4.2	3.5	2.8	2.2	2.0
	Histidine	2.5	2.3	2.2	2.0	1.7	1.4	1.1	0.8	0.5	0.3
	Isoleucine	1.9	1.7	1.6	1.6	1.7	1.9	2.1	2.4	2.6	2.8
	Leucine	4.6	4.4	4.3	4.0	3.8	3.5	3.1	2.8	2.4	2.2
	Lysine	9.4	8.9	8.3	7.5	6.5	5.4	4.2	2.8	1.4	0.4
	Methionine	2.1	2.0	1.9	1.7	1.5	1.3	1.1	0.8	0.6	0.3
	Phenylalanine	1.7	1.6	1.5	1.5	1.5	1.4	1.4	1.3	1.3	1.2
	Proline	14.6	14.3	13.4	12.1	10.5	8.5	6.4	4.4	3.8	4.9
	Serine	6.0	5.7	5.3	4.9	4.5	4.0	3.4	2.8	2.2	1.9
	Threonine	1.2	0.8	0.6	0.6	0.8	1.2	1.6	2.0	2.3	2.6
	Tryptophan	1.1	1.0	0.9	0.8	0.7	0.6	0.4	0.3	0.2	0.1
	Tyrosine	4.0	4.4	4.5	4.4	4.2	3.8	3.2	2.4	1.6	0.9
	Valine	2.0	1.7	1.5	1.3	1.3	1.5	1.8	2.3	2.7	3.1
Anabolic fluxes	**Carbohydrates**	1.0	1.1	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	DNA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	RNA	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Lipids	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Proteins	14.7	16.4	17.7	18.6	19.1	19.4	19.4	19.2	18.9	18.5
Intracellular fluxes	**G6P-F6P**	77.3	62.2	49.4	38.5	29.4	22.0	16.2	11.9	8.9	6.7
	F6P-GAP	77.3	62.2	49.4	38.5	29.4	22.0	16.2	11.9	8.9	6.7
	GAP-Pyr	154.6	124.5	98.7	77.0	58.8	44.1	32.4	23.7	17.8	13.4
	Pyr-Pyrm	107.3	81.5	60.6	44.3	32.7	25.4	21.6	19.8	18.4	17.5
	Pyrm-AcCm	95.0	71.7	53.5	40.4	32.3	28.6	27.8	28.2	28.8	28.9
	OAA/AcCm-Citm	83.6	68.8	59.4	54.1	51.4	49.8	48.2	46.1	43.3	40.0
	Citm-AKGm	86.7	72.1	63.0	57.9	55.3	53.6	51.8	49.5	46.3	42.8
	AKGm-SuCm	71.2	58.1	51.4	49.4	49.8	50.7	51.1	50.5	49.0	46.7
	SuCm-Fumm	69.6	57.4	52.0	51.3	52.8	54.5	55.7	55.8	54.9	53.0
	Fumm-Malm	72.5	61.2	55.9	54.8	55.7	57.0	57.8	57.7	56.7	54.5
	Malm-OAAm	83.9	68.7	58.7	52.8	49.5	47.3	45.2	42.6	39.3	35.7
	Malm-Pyrm	16.1	11.8	8.1	5.7	6.1	8.6	11.7	14.9	17.9	20.1
	Citm-Cit	5.2	5.8	6.3	6.6	6.8	6.9	6.9	6.8	6.7	6.6
	Cit-AcC/Mal	5.2	5.8	6.3	6.6	6.8	6.9	6.9	6.8	6.7	6.6
	Mal-Malm	5.2	5.8	6.3	6.6	6.8	6.9	6.9	6.8	6.7	6.6
	G6P-P5P	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.6
	NADH-OP	393.8	302.3	242.2	211.2	202.0	204.2	209.1	212.3	212.3	207.6
	FADH2-OP	66.2	56.0	53.0	54.1	56.8	59.4	60.9	61.4	60.7	58.9
	OP-ATP	1082.0	836.3	680.3	605.6	588.5	598.7	613.6	622.4	621.5	606.8
	ATPwOP	245.3	200.6	167.7	145.5	132.3	125.3	121.5	118.5	114.7	111.2
	ATPtot	1326.4	1034.0	841.4	739.9	706.0	707.5	718.2	723.5	717.9	698.5
	Ala-Pyr	4.3	4.2	4.1	3.9	3.7	3.4	3.1	2.8	2.5	2.1
	Arg-Glu	5.6	5.3	4.9	4.4	3.9	3.3	2.6	1.9	1.3	0.9
	Asn-Asp	1.2	1.2	1.3	1.3	1.3	1.2	1.2	1.1	1.0	0.9
	Asp-OAAm	3.4	2.5	2.2	2.6	3.3	4.1	4.9	5.7	6.5	7.0
	Cys-Pyr	2.0	2.0	1.9	1.8	1.6	1.4	1.2	1.0	0.8	0.7
	Gln-Glu	4.2	3.6	3.1	2.6	2.2	1.9	1.6	1.4	1.3	1.2
	Glu-AKGm	15.6	14.1	12.4	10.7	8.9	7.2	5.8	5.0	5.2	5.9
	Gly-Ser	7.0	6.8	6.4	5.9	5.3	4.7	4.0	3.4	3.0	2.9
	His-Glu	2.4	2.3	2.2	2.0	1.8	1.5	1.3	1.0	0.8	0.7
	Ile-AcCm/SuCm	1.3	1.0	0.9	1.0	1.2	1.5	1.8	2.0	2.3	2.5
	Leu-AcCm	4.1	4.0	4.0	3.8	3.6	3.3	2.9	2.5	2.0	1.6
	Lys-AcCm	9.5	9.1	8.6	7.8	6.9	5.8	4.6	3.4	2.2	1.6
	Met/Ser-SuCm/Cys	2.0	1.9	1.8	1.7	1.5	1.3	1.1	0.8	0.5	0.3
	Phe-Tyr	1.5	1.5	1.5	1.5	1.4	1.4	1.3	1.2	1.1	1.0
	Pro-Glu	14.3	13.9	13.1	11.8	10.1	8.1	6.0	4.0	3.4	4.5
	Ser-Pyr	10.7	10.3	9.8	9.1	8.2	7.1	5.9	4.6	3.4	2.5
	Thr-SuCm	1.0	0.7	0.6	0.8	1.1	1.4	1.7	2.0	2.2	2.4
	Trp-AcCm/Ala	1.1	1.0	0.9	0.8	0.7	0.6	0.4	0.3	0.2	0.1
	Tyr-AcCm/Fumm	3.9	4.4	4.7	4.8	4.7	4.4	3.9	3.2	2.5	1.9
	Val-SuCm	1.6	1.2	0.9	0.8	1.0	1.3	1.7	2.1	2.5	2.7

	Time [h]	53.6	55.9	58.2	60.6	62.9	65.2	67.5	69.9	72.2	74.5	76.9	79.2	81.5	83.8	86.2	88.5	90.8	93.2
Extracellular fluxes	**Glucose**	4.8	3.8	3.7	4.3	5.1	6.0	6.8	7.7	8.5	9.1	9.0	8.4	7.4	6.1	4.8	4.4	5.6	7.3
	Lactate	14.1	11.8	10.0	8.7	7.8	7.5	7.5	8.1	9.0	10.1	11.0	11.8	12.5	13.0	13.4	13.6	13.8	13.6
	Pyruvate	2.3	2.1	2.0	1.8	1.7	1.6	1.4	1.3	1.2	1.2	1.1	1.0	1.0	0.9	0.9	0.8	0.8	0.7
	Alanine	1.2	1.0	0.8	0.7	0.6	0.5	0.5	0.5	0.6	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.8
	Arginine	0.6	0.9	1.3	1.6	1.8	2.0	2.2	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3
	Asparagine	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.2	1.1	1.0	0.8	0.7	0.5
	Aspartate	7.0	7.0	6.9	6.5	6.0	5.3	4.6	4.0	3.5	3.4	3.4	3.4	3.5	3.4	3.3	3.1	3.0	2.9
	Cysteine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Glutamate	2.1	2.1	2.0	1.8	1.7	1.4	1.3	1.2	1.3	1.5	1.6	1.7	1.8	1.7	1.6	1.4	1.2	1.0
	Glutamine	2.4	2.4	2.4	2.4	2.5	2.6	2.7	2.8	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.5	4.7
	Glycine	1.9	2.1	2.2	2.3	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.3	2.4	2.6	2.7	2.9	3.1	3.2
	Histidine	0.4	0.6	0.8	0.9	1.0	1.1	1.2	1.2	1.3	1.3	1.3	1.3	1.2	1.1	1.1	1.0	0.9	0.9
	Isoleucine	2.9	2.9	2.8	2.6	2.4	2.1	1.9	1.7	1.7	1.9	2.0	2.0	2.0	1.9	1.7	1.4	1.1	0.8
	Leucine	2.0	2.0	2.0	2.0	2.1	2.2	2.4	2.5	2.7	2.8	2.9	2.8	2.7	2.5	2.3	2.1	1.9	1.7
	Lysine	1.1	1.9	2.6	3.1	3.4	3.6	3.7	3.7	3.6	3.4	3.2	3.0	2.8	2.6	2.5	2.4	2.4	2.5
	Methionine	0.2	0.2	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9
	Phenylalanine	1.1	1.1	1.0	1.0	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.4	1.3	1.2	1.0	0.9	0.8
	Proline	6.2	7.3	8.0	8.3	8.3	7.8	7.1	6.1	4.7	3.5	2.4	1.6	1.0	0.7	0.8	1.1	1.4	1.7
	Serine	1.7	1.8	2.0	2.3	2.6	2.9	3.2	3.5	3.8	4.0	4.1	4.0	3.8	3.6	3.2	2.9	2.7	2.5
	Threonine	2.7	2.7	2.7	2.5	2.3	2.0	1.8	1.7	1.8	1.9	2.1	2.2	2.2	2.1	1.8	1.5	1.2	1.0
	Tryptophan	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
	Tyrosine	0.5	0.5	0.8	1.1	1.3	1.5	1.6	1.7	1.8	1.9	1.9	1.8	1.7	1.5	1.3	1.2	1.3	1.5
	Valine	3.3	3.3	3.2	3.0	2.7	2.4	2.1	1.9	1.9	2.1	2.3	2.4	2.4	2.3	2.0	1.7	1.3	1.0
Anabolic fluxes	**Carbohydrates**	1.2	1.2	1.1	1.1	1.0	1.0	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.2
	DNA	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	RNA	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
	Lipids	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	Proteins	18.0	17.4	16.7	15.9	15.0	14.2	13.5	13.2	13.2	13.6	14.0	14.5	15.1	15.7	16.3	16.9	17.3	17.0
Intracellular fluxes	**G6P-F6P**	5.3	4.9	5.2	5.8	6.6	7.3	8.1	8.7	9.4	9.8	9.6	9.0	8.0	6.8	5.9	6.0	7.4	9.0
	F6P-GAP	5.3	4.9	5.2	5.8	6.6	7.3	8.1	8.7	9.4	9.8	9.6	9.0	8.0	6.8	5.9	6.0	7.4	9.0
	GAP-Pyr	10.8	10.0	10.6	11.9	13.4	14.9	16.3	17.7	19.0	19.8	19.4	18.1	16.1	13.8	12.1	12.3	15.0	18.3
	Pyr-Pyrm	17.1	17.1	17.4	18.0	18.8	20.0	21.4	23.0	25.0	26.2	26.3	25.5	24.2	22.9	22.7	24.3	27.6	30.9
	Pyrm-AcCm	28.3	27.0	25.3	23.3	21.6	20.7	21.0	23.1	26.8	30.4	32.6	33.3	33.0	32.3	32.3	34.1	38.0	41.7
	OAA/AcCm-Citm	36.5	32.9	29.8	27.6	27.0	28.4	31.8	36.9	43.1	48.4	51.5	52.5	52.3	51.6	51.8	54.2	59.0	63.6
	Citm-AKGm	39.3	35.9	33.0	31.2	30.8	32.3	35.6	40.3	46.2	51.3	54.3	55.5	55.6	55.6	56.5	59.6	64.9	69.5
	AKGm-SuCm	43.8	40.7	37.7	35.5	34.7	35.7	39.0	44.2	51.0	57.2	61.4	63.6	64.5	64.9	66.1	69.2	74.3	78.6
	SuCm-Fumm	50.2	46.8	43.4	40.4	38.7	39.1	42.0	47.4	54.8	61.8	66.5	69.0	69.7	69.7	70.1	72.5	77.1	81.1
	Fumm-Malm	51.4	47.8	44.0	40.9	39.1	39.5	42.6	48.4	56.3	63.6	68.6	71.1	71.8	71.8	72.3	74.8	79.7	84.0
	Malm-OAAm	32.1	28.7	26.0	24.4	24.6	26.6	30.3	35.3	41.1	45.9	48.7	49.6	49.5	49.4	50.3	53.5	59.0	64.1
	Malm-Pyrm	21.2	21.6	21.1	20.2	18.9	17.5	16.5	16.2	17.3	19.1	20.6	21.4	21.5	20.9	19.8	18.3	16.9	15.9
	Citm-Cit	6.4	6.2	5.9	5.6	5.3	5.0	4.8	4.7	4.7	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.1	6.0
	Cit-AcC/Mal	6.4	6.2	5.9	5.6	5.3	5.0	4.8	4.7	4.7	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.1	6.0
	Mal-Malm	6.4	6.2	5.9	5.6	5.3	5.0	4.8	4.7	4.7	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.1	6.0
	G6P-P5P	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
	NADH-OP	198.6	186.4	172.6	159.4	150.0	147.9	156.1	175.1	203.5	230.8	248.6	257.0	258.8	258.0	260.4	272.3	294.6	315.2
	FADH2-OP	55.9	52.2	48.4	45.0	42.9	43.0	45.9	51.6	59.8	67.5	72.8	75.4	76.1	75.7	75.6	77.4	81.5	85.4
	OP-ATP	579.7	543.5	503.0	464.7	437.7	432.4	457.1	513.3	596.6	676.5	728.9	754.2	759.8	757.5	763.5	796.0	858.3	915.5
	ATPwOP	108.0	105.0	102.3	100.1	98.9	99.1	101.0	105.2	111.5	117.8	122.6	126.4	130.1	134.7	141.5	151.4	162.8	169.6
	ATPtot	667.4	628.1	586.0	548.1	523.4	522.0	551.1	612.2	701.3	786.7	843.4	872.5	882.2	885.8	900.6	945.3	1020.4	1084.9
	Ala-Pyr	1.8	1.5	1.3	1.0	0.8	0.7	0.8	0.9	1.1	1.2	1.3	1.4	1.4	1.3	1.3	1.3	1.3	1.3
	Arg-Glu	0.9	1.2	1.5	1.8	2.0	2.2	2.4	2.5	2.6	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.1
	Asn-Asp	0.9	0.8	0.8	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.4	1.4	1.4	1.3	1.3	1.2	1.1	1.0
	Asp-OAAm	7.3	7.3	7.1	6.8	6.3	5.8	5.2	4.7	4.4	4.3	4.4	4.3	4.2	3.8	3.4	2.8	2.2	1.8
	Cys-Pyr	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.7
	Gln-Glu	1.3	1.4	1.6	1.8	2.0	2.3	2.5	2.8	3.1	3.5	3.8	4.1	4.4	4.7	4.9	5.2	5.4	5.6
	Glu-AKGm	6.6	7.1	7.4	7.4	7.3	7.2	7.1	7.1	7.5	8.1	8.7	9.2	9.6	9.8	9.8	9.8	9.7	9.5
	Gly-Ser	2.9	3.0	3.0	3.0	3.0	3.0	2.9	2.9	3.0	3.1	3.3	3.6	3.8	4.1	4.4	4.7	4.9	5.0
	His-Glu	0.7	0.8	1.0	1.1	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.2	1.2
	Ile-AcCm/SuCm	2.5	2.5	2.4	2.3	2.1	1.9	1.7	1.6	1.6	1.8	1.9	1.9	1.9	1.7	1.5	1.3	1.0	0.7
	Leu-AcCm	1.3	1.2	1.3	1.4	1.7	2.0	2.2	2.5	2.8	3.0	3.1	3.2	3.2	3.1	3.1	3.0	3.0	3.0
	Lys-AcCm	1.8	2.3	2.8	3.3	3.6	3.8	3.8	3.8	3.7	3.5	3.4	3.3	3.2	3.1	3.2	3.3	3.5	3.6
	Met/Ser-SuCm/Cys	0.1	0.2	0.4	0.5	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2
	Phe-Tyr	0.9	0.8	0.8	0.8	0.9	0.9	1.1	1.2	1.3	1.5	1.5	1.6	1.5	1.5	1.4	1.3	1.3	1.3
	Pro-Glu	5.9	7.0	7.8	8.1	8.1	7.7	7.0	6.0	4.8	3.6	2.6	1.8	1.2	0.8	0.6	0.7	1.0	1.3
	Ser-Pyr	2.1	2.2	2.6	3.1	3.6	4.1	4.5	4.9	5.3	5.6	5.8	6.1	6.3	6.5	6.7	7.0	7.2	7.3
	Thr-SuCm	2.5	2.5	2.4	2.2	2.0	1.8	1.6	1.5	1.6	1.8	2.0	2.0	2.0	1.9	1.7	1.4	1.1	0.9
	Trp-AcCm/Ala	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
	Tyr-AcCm/Fumm	1.4	1.2	1.1	1.2	1.4	1.6	1.8	2.1	2.4	2.7	2.9	2.9	2.8	2.7	2.6	2.6	2.8	3.1
	Val-SuCm	2.9	2.9	2.8	2.6	2.4	2.1	1.8	1.6	1.6	1.9	2.0	2.1	2.1	2.0	1.8	1.4	1.1	0.8

	Time [h]	95.5	97.8	100.2	102.5	104.8	107.1	109.5	111.8	114.1	116.5	118.8	121.1	123.4	125.8	128.1	130.4
Extracellular fluxes	**Glucose**	8.9	10.2	11.3	12.0	12.4	12.6	12.6	12.4	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.1
	Lactate	13.1	12.4	11.5	10.3	9.0	7.5	6.1	4.8	4.2	4.4	4.9	5.4	5.9	6.2	6.4	6.6
	Pyruvate	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	Alanine	0.8	0.9	1.0	1.1	1.1	1.1	1.1	1.0	1.0	0.9	0.8	0.7	0.6	0.5	0.4	0.3
	Arginine	2.3	2.2	2.2	2.1	2.0	1.8	1.6	1.4	1.1	0.9	0.6	0.4	0.3	0.2	0.1	0.2
	Asparagine	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3
	Aspartate	2.8	2.8	2.6	2.5	2.3	2.0	1.8	1.5	1.2	1.0	1.0	0.9	0.9	0.9	0.8	0.8
	Cysteine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Glutamate	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4
	Glutamine	4.8	5.0	5.0	5.0	5.0	4.9	4.7	4.4	4.1	3.8	3.4	3.1	2.7	2.4	2.2	1.9
	Glycine	3.2	3.2	3.1	2.9	2.7	2.4	2.1	1.7	1.4	1.1	1.0	0.9	0.8	0.7	0.7	0.6
	Histidine	0.9	0.8	0.8	0.8	0.7	0.7	0.6	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.1
	Isoleucine	0.7	0.6	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.5	0.5
	Leucine	1.6	1.6	1.6	1.5	1.5	1.4	1.3	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	0.5
	Lysine	2.5	2.5	2.5	2.4	2.2	2.0	1.7	1.4	1.1	0.8	0.6	0.5	0.4	0.5	0.5	0.6
	Methionine	1.0	1.0	0.9	0.9	0.9	0.8	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2
	Phenylalanine	0.7	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3
	Proline	2.0	2.2	2.4	2.5	2.7	2.7	2.8	2.9	2.9	2.9	2.8	2.6	2.3	2.0	1.6	1.1
	Serine	2.5	2.4	2.4	2.4	2.3	2.2	2.1	1.9	1.7	1.5	1.3	1.1	1.0	0.9	0.8	0.7
	Threonine	0.8	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.5
	Tryptophan	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1
	Tyrosine	1.8	2.0	2.1	2.2	2.2	2.2	2.1	2.0	1.8	1.6	1.4	1.3	1.1	1.0	0.9	0.8
	Valine	0.8	0.7	0.6	0.7	0.7	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.7	0.5
Anabolic fluxes	**Carbohydrates**	1.1	1.0	0.8	0.6	0.4	0.2	0.3	0.6	0.9	1.1	1.2	1.3	1.3	1.3	1.2	1.1
	DNA	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	RNA	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.2	0.4	0.4	0.5	0.5	0.6	0.5	0.5	0.5
	Lipids	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3
	Proteins	15.9	14.2	11.8	8.9	5.6	2.6	4.0	8.2	12.6	16.0	18.2	19.4	19.7	19.2	18.1	16.5
Intracellular fluxes	**G6P-F6P**	10.5	11.7	12.4	12.9	12.9	12.7	12.3	11.7	11.1	10.8	10.7	10.8	10.8	10.9	11.0	11.1
	F6P-GAP	10.5	11.7	12.4	12.9	12.9	12.7	12.3	11.7	11.1	10.8	10.7	10.8	10.8	10.9	11.0	11.1
	GAP-Pyr	21.2	23.5	25.1	25.9	26.0	25.5	24.5	23.2	22.1	21.4	21.3	21.3	21.5	21.7	21.9	22.0
	Pyr-Pyrm	33.3	34.7	34.8	33.8	31.7	28.7	25.1	21.2	18.3	17.7	18.6	20.1	21.4	22.5	23.2	23.7
	Pyrm-AcCm	44.4	45.7	45.3	43.4	39.9	35.1	29.0	22.1	15.8	13.1	13.8	16.0	18.1	19.8	20.8	21.5
	OAA/AcCm-Citm	66.7	67.7	66.6	63.1	57.4	49.7	40.2	29.3	18.6	13.1	14.1	17.5	20.4	22.3	22.9	22.6
	Citm-AKGm	72.3	72.8	70.7	66.2	59.3	50.2	39.1	26.5	14.3	10.3	14.9	20.0	23.7	25.5	25.7	24.7
	AKGm-SuCm	81.0	81.0	78.3	73.1	65.3	55.2	43.0	29.2	15.9	11.2	16.0	21.6	25.5	27.6	27.9	26.8
	SuCm-Fumm	83.3	83.1	80.3	74.7	66.6	56.0	43.3	29.0	15.3	11.4	17.0	22.9	27.0	29.0	29.2	27.8
	Fumm-Malm	86.5	86.4	83.6	78.0	69.7	58.9	45.9	31.1	16.9	11.8	16.8	22.8	26.9	29.0	29.1	27.8
	Malm-OAAm	67.4	68.7	67.6	64.2	58.6	51.0	41.6	30.8	20.2	14.4	14.7	17.6	20.4	22.2	22.9	22.7
	Malm-Pyrm	15.0	14.1	13.1	11.9	10.6	9.2	8.0	7.1	7.0	7.4	8.0	8.3	8.4	8.2	7.8	7.0
	Citm-Cit	5.6	5.0	4.2	3.2	2.0	0.9	1.4	2.9	4.5	5.7	6.4	6.9	7.0	6.8	6.4	5.9
	Cit-AcC/Mal	5.6	5.0	4.2	3.2	2.0	0.9	1.4	2.9	4.5	5.7	6.4	6.9	7.0	6.8	6.4	5.9
	Mal-Malm	5.6	5.0	4.2	3.2	2.0	0.9	1.4	2.9	4.5	5.7	6.4	6.9	7.0	6.8	6.4	5.9
	G6P-P5P	0.6	0.5	0.4	0.3	0.2	0.1	0.1	0.3	0.4	0.6	0.6	0.7	0.7	0.7	0.6	0.6
	NADH-OP	328.1	330.9	322.7	303.4	273.3	233.3	184.4	128.7	74.5	52.0	66.6	88.4	104.9	114.5	117.8	116.1
	FADH2-OP	87.4	86.9	83.8	77.8	69.1	57.9	44.5	29.4	15.3	12.4	18.8	25.1	29.3	31.2	31.2	29.6
	OP-ATP	950.9	957.3	932.1	874.9	786.8	669.9	527.5	365.4	207.7	145.0	191.5	255.8	303.7	330.8	338.8	332.0
	ATPwOP	170.6	165.5	154.3	137.3	114.8	87.4	55.8	21.1	19.6	48.4	69.6	83.4	90.5	91.9	88.4	80.6
	ATPtot	1121.3	1122.5	1085.9	1011.5	900.8	756.3	581.9	384.4	195.1	151.4	238.5	323.5	381.0	410.3	414.7	399.6
	Ala-Pyr	1.2	1.1	1.0	0.9	0.9	0.9	1.1	1.4	1.6	1.8	1.9	1.9	1.9	1.7	1.5	1.3
	Arg-Glu	3.0	2.9	2.8	2.5	2.2	1.8	1.4	0.9	0.5	0.1	0.3	0.6	0.8	0.9	0.9	0.9
	Asn-Asp	0.9	0.8	0.7	0.6	0.5	0.3	0.3	0.3	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.6
	Asp-OAAm	1.5	1.4	1.5	1.6	1.8	1.9	2.0	2.1	2.1	2.1	2.0	1.9	1.8	1.6	1.4	1.1
	Cys-Pyr	1.7	1.6	1.5	1.3	1.1	0.9	0.6	0.2	0.1	0.4	0.6	0.7	0.8	0.9	0.8	0.8
	Gln-Glu	5.7	5.7	5.7	5.5	5.2	4.9	4.4	3.9	3.4	2.8	2.4	2.1	1.8	1.6	1.5	1.4
	Glu-AKGm	9.2	8.7	8.1	7.3	6.4	5.5	4.5	3.6	3.1	3.0	3.3	3.5	3.7	3.7	3.7	3.5
	Gly-Ser	4.9	4.7	4.3	3.8	3.2	2.5	1.7	0.9	0.8	1.3	1.8	2.2	2.4	2.5	2.4	2.3
	His-Glu	1.2	1.1	1.0	0.9	0.8	0.7	0.5	0.4	0.2	0.1	0.2	0.2	0.3	0.3	0.3	0.3
	Ile-AcCm/SuCm	0.5	0.5	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.9	0.9	0.9	0.8	0.8	0.7	0.6
	Leu-AcCm	2.9	2.7	2.5	2.2	1.9	1.5	1.0	0.6	0.5	0.8	1.1	1.4	1.5	1.6	1.5	1.5
	Lys-AcCm	3.6	3.5	3.3	3.0	2.6	2.1	1.5	0.8	0.2	0.5	1.0	1.3	1.5	1.7	1.7	1.7
	Met/Ser-SuCm/Cys	1.2	1.2	1.1	1.1	0.9	0.8	0.6	0.5	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.4
	Phe-Tyr	1.3	1.2	1.1	1.0	0.9	0.8	0.6	0.4	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.5
	Pro-Glu	1.5	1.8	2.1	2.3	2.5	2.7	2.9	3.0	3.1	3.1	3.0	2.9	2.6	2.2	1.9	1.5
	Ser-Pyr	7.2	6.9	6.4	5.7	4.8	3.8	2.6	1.4	0.7	1.4	2.1	2.7	3.0	3.2	3.1	3.0
	Thr-SuCm	0.7	0.6	0.5	0.5	0.6	0.6	0.7	0.8	0.9	0.9	1.0	1.0	0.9	0.9	0.8	0.7
	Trp-AcCm/Ala	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1
	Tyr-AcCm/Fumm	3.3	3.4	3.4	3.4	3.2	2.9	2.6	2.1	1.7	1.2	0.9	0.6	0.5	0.3	0.3	0.2
	Val-SuCm	0.6	0.5	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.1	1.1	1.0	0.8

Table S2 (continued)

90 % confidence intervals (n=4) [µmol/g/h]

	Time [h]	132.8	135.1	137.4	139.7	142.1	144.4	146.7	149.1	151.4	153.7
Extracellular fluxes	Glucose	12.1	12.0	11.9	11.8	11.6	11.3	10.9	10.4	9.8	9.1
	Lactate	6.8	7.0	7.5	8.0	8.3	8.5	8.5	8.3	8.0	7.5
	Pyruvate	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
	Alanine	0.3	0.3	0.4	0.5	0.6	0.6	0.7	0.8	0.8	0.9
	Arginine	0.2	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6
	Asparagine	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Aspartate	0.7	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.6
	Cysteine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Glutamate	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5
	Glutamine	1.7	1.6	1.5	1.4	1.3	1.3	1.3	1.2	1.2	1.2
	Glycine	0.5	0.4	0.5	0.6	0.8	0.9	1.0	1.1	1.1	1.1
	Histidine	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	Isoleucine	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2
	Leucine	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.4
	Lysine	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Methionine	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
	Phenylalanine	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1
	Proline	0.7	0.8	1.3	1.8	2.2	2.5	2.6	2.7	2.6	2.4
	Serine	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
	Threonine	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Tryptophan	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	Tyrosine	0.7	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4
	Valine	0.4	0.3	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4
Anabolic fluxes	Carbohydrates	1.0	0.8	0.6	0.5	0.3	0.2	0.1	0.1	0.2	0.2
	DNA	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	RNA	0.4	0.3	0.3	0.2	0.1	0.1	0.0	0.0	0.1	0.1
	Lipids	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1
	Proteins	14.5	12.0	9.3	6.7	4.5	2.7	1.4	1.4	2.3	3.2
Intracellular fluxes	G6P-F6P	11.1	11.1	11.2	11.3	11.3	11.1	10.8	10.5	10.0	9.3
	F6P-GAP	11.1	11.1	11.2	11.3	11.3	11.1	10.8	10.5	10.0	9.3
	GAP-Pyr	22.1	22.2	22.4	22.5	22.5	22.2	21.7	20.9	19.9	18.7
	Pyr-Pyrm	24.1	24.6	25.7	26.8	27.7	28.2	28.2	27.8	26.8	25.3
	Pyrm-AcCm	22.1	22.9	24.4	26.2	27.6	28.5	28.9	28.8	28.1	26.8
	OAA/AcCm-Citm	21.8	21.0	21.4	22.9	24.6	26.2	27.2	27.7	27.7	27.1
	Citm-AKGm	22.8	20.9	20.3	21.5	23.5	25.4	27.0	28.0	28.4	28.2
	AKGm-SuCm	24.7	22.5	21.3	22.1	23.9	25.7	27.2	28.2	28.6	28.5
	SuCm-Fumm	25.4	22.8	21.4	22.1	23.9	25.9	27.5	28.6	29.1	29.1
	Fumm-Malm	25.3	22.6	21.1	21.9	23.8	25.8	27.6	28.8	29.4	29.4
	Malm-OAAm	22.0	21.3	21.6	22.9	24.5	25.8	26.7	27.2	27.0	26.4
	Malm-Pyrm	6.1	5.0	4.0	3.3	3.1	3.2	3.3	3.5	3.6	3.7
	Citm-Cit	5.1	4.3	3.3	2.4	1.6	1.0	0.5	0.5	0.8	1.1
	Cit-AcC/Mal	5.1	4.3	3.3	2.4	1.6	1.0	0.5	0.5	0.8	1.1
	Mal-Malm	5.1	4.3	3.3	2.4	1.6	1.0	0.5	0.5	0.8	1.1
	G6P-P5P	0.5	0.4	0.3	0.2	0.2	0.1	0.0	0.0	0.1	0.1
	NADH-OP	111.7	108.1	109.8	117.2	125.9	133.5	138.7	141.2	140.8	137.8
	FADH2-OP	26.8	23.6	21.5	21.9	23.7	25.7	27.5	28.8	29.5	29.6
	OP-ATP	316.9	303.4	305.4	325.3	350.1	372.2	388.0	396.1	396.2	388.6
	ATPwOP	69.3	55.8	42.3	35.2	35.8	40.6	46.4	51.6	55.6	58.2
	ATPtot	372.6	345.8	337.5	355.6	384.3	412.4	434.3	447.6	451.7	446.7
	Ala-Pyr	1.0	0.8	0.5	0.4	0.4	0.6	0.7	0.9	1.0	1.1
	Arg-Glu	0.9	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.5
	Asn-Asp	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2
	Asp-OAAm	0.9	0.6	0.4	0.3	0.4	0.6	0.7	0.8	0.9	0.9
	Cys-Pyr	0.7	0.6	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.2
	Gln-Glu	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.1	1.1
	Glu-AKGm	3.2	3.0	2.7	2.6	2.5	2.4	2.3	2.2	2.0	1.7
	Gly-Ser	2.0	1.7	1.4	1.2	1.0	1.0	1.0	1.1	1.1	1.1
	His-Glu	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
	Ile-AcCm/SuCm	0.5	0.4	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	Leu-AcCm	1.3	1.1	0.9	0.7	0.5	0.4	0.3	0.3	0.3	0.4
	Lys-AcCm	1.6	1.4	1.2	1.0	0.8	0.7	0.6	0.5	0.5	0.5
	Met/Ser-SuCm/Cys	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Phe-Tyr	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2
	Pro-Glu	1.2	1.2	1.5	2.0	2.3	2.6	2.7	2.7	2.6	2.4
	Ser-Pyr	2.7	2.3	1.8	1.5	1.3	1.2	1.3	1.4	1.4	1.5
	Thr-SuCm	0.6	0.4	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3
	Trp-AcCm/Ala	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	Tyr-AcCm/Fumm	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.6	0.7
	Val-SuCm	0.7	0.6	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4

Time [h]	156.1	158.4	160.7	163.0	165.4	167.7	170.0	172.4	174.7	177.0	179.3	181.7	184.0	186.3	188.7	191.0	193.3	195.6	198.0	200.3
Glucose	8.3	7.4	6.4	5.4	4.5	3.9	3.3	2.9	2.6	2.3	2.1	1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0
Lactate	6.8	6.2	5.6	5.3	5.4	5.7	6.1	6.4	6.7	6.8	6.8	6.7	6.5	6.0	5.5	5.0	4.4	3.9	3.3	2.9
Pyruvate	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Alanine	1.0	1.1	1.2	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.3
Arginine	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Asparagine	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
Aspartate	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cysteine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Glutamate	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5
Glutamine	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9	0.8	0.7	0.7
Glycine	1.1	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.8
Histidine	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Isoleucine	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.3
Leucine	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Lysine	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Methionine	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Phenylalanine	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
Proline	2.1	1.8	1.4	1.1	1.1	1.2	1.3	1.5	1.6	1.6	1.6	1.6	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.0
Serine	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Threonine	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Tryptophan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tyrosine	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Valine	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Carbohydrates	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5	0.5
DNA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
RNA	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Lipids	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Proteins	4.0	4.6	5.2	5.6	5.8	5.8	5.6	5.2	4.5	3.7	2.8	2.0	1.7	2.7	4.2	5.5	6.5	7.3	7.8	8.0
G6P-F6P	8.6	7.7	6.8	5.9	5.1	4.4	3.9	3.4	3.1	2.7	2.4	2.1	1.8	1.5	1.2	1.0	0.9	0.8	0.8	0.8
F6P-GAP	8.6	7.7	6.8	5.9	5.1	4.4	3.9	3.4	3.1	2.7	2.4	2.1	1.8	1.5	1.2	1.0	0.9	0.8	0.8	0.8
GAP-Pyr	17.2	15.6	13.7	11.8	10.3	9.0	7.9	7.0	6.2	5.5	4.8	4.2	3.6	2.9	2.4	2.0	1.7	1.6	1.6	1.7
Pyr-Pyrm	23.4	21.0	18.3	15.5	13.2	11.3	9.9	8.8	7.9	7.3	6.7	6.3	5.9	5.7	5.6	5.8	6.2	6.6	7.1	7.4
Pyrm-AcCm	25.1	22.9	20.5	18.1	16.1	14.6	13.5	12.5	11.7	11.1	10.5	10.1	9.8	9.8	10.3	11.1	12.0	12.9	13.5	13.9
OAA/AcCm-Citm	26.1	24.6	22.8	21.1	19.7	18.5	17.4	16.4	15.5	14.6	13.9	13.5	13.5	14.2	15.6	17.4	19.0	20.3	21.3	21.7
Citm-AKGm	27.4	26.2	24.6	22.9	21.4	20.0	18.7	17.3	16.0	14.7	13.7	13.1	13.3	14.5	16.5	18.8	21.0	22.6	23.8	24.4
AKGm-SuCm	27.8	26.7	25.2	23.8	22.6	21.4	20.3	19.1	17.9	16.7	15.7	15.1	15.3	16.5	18.6	21.1	23.4	25.2	26.4	27.0
SuCm-Fumm	28.5	27.4	26.1	24.7	23.6	22.5	21.4	20.2	19.0	17.8	16.9	16.4	16.7	18.0	20.4	23.0	25.5	27.4	28.7	29.3
Fumm-Malm	28.8	27.9	26.6	25.3	24.1	23.0	21.9	20.6	19.4	18.1	17.1	16.6	16.9	18.3	20.8	23.6	26.1	28.1	29.4	30.1
Malm-OAAm	25.3	23.8	22.0	20.2	18.9	17.7	16.7	15.8	14.9	14.1	13.5	13.1	13.1	13.7	15.0	16.5	18.1	19.3	20.2	20.6
Malm-Pyrm	3.7	3.7	3.7	3.8	4.0	4.1	4.1	4.1	4.1	4.0	3.9	3.9	4.1	4.4	5.0	5.6	6.1	6.5	6.8	6.9
Citm-Cit	1.4	1.6	1.9	2.0	2.1	2.1	2.0	1.8	1.6	1.3	1.0	0.7	0.6	1.0	1.5	1.9	2.3	2.6	2.8	2.8
Cit-AcC/Mal	1.4	1.6	1.9	2.0	2.1	2.1	2.0	1.8	1.6	1.3	1.0	0.7	0.6	1.0	1.5	1.9	2.3	2.6	2.8	2.8
Mal-Malm	1.4	1.6	1.9	2.0	2.1	2.1	2.0	1.8	1.6	1.3	1.0	0.7	0.6	1.0	1.5	1.9	2.3	2.6	2.8	2.8
G6P-P5P	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3
NADH-OP	132.2	124.6	115.6	107.1	100.2	94.5	89.4	84.5	79.8	75.3	71.4	68.7	68.3	71.2	78.0	86.6	94.9	101.9	106.8	109.4
FADH2-OP	29.1	28.2	27.0	25.8	24.8	23.7	22.7	21.5	20.3	19.2	18.2	17.8	18.2	19.7	22.4	25.2	27.9	29.9	31.3	32.0
OP-ATP	373.9	353.5	329.3	306.2	287.6	271.8	257.4	243.6	229.9	216.9	205.7	198.4	198.0	207.6	228.3	254.2	279.1	299.6	314.0	321.5
ATPwOP	59.5	59.5	58.3	56.2	53.4	49.9	45.5	40.2	34.2	27.4	20.3	14.5	14.2	21.6	32.2	41.9	49.8	55.8	59.8	61.9
ATPtot	433.3	412.6	386.7	360.6	338.0	317.2	297.0	276.7	256.3	236.7	219.9	209.6	210.3	226.1	257.0	293.1	326.6	353.7	372.6	382.5
Ala-Pyr	1.2	1.3	1.4	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.8	1.8	1.9	1.9	1.9
Arg-Glu	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8
Asn-Asp	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.6	0.6
Asp-OAAm	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.6	0.5	0.5	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1
Cys-Pyr	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5
Gln-Glu	1.1	1.1	1.1	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.0
Glu-AKGm	1.5	1.2	1.1	1.2	1.4	1.7	1.9	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.5	2.6	2.7	2.7
Gly-Ser	1.1	1.1	1.1	1.1	1.0	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.6	0.8	1.0	1.3	1.4	1.6	1.6	1.7
His-Glu	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.4
Ile-AcCm/SuCm	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6
Leu-AcCm	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.2
Lys-AcCm	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.0	1.0
Met/Ser-SuCm/Cys	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Phe-Tyr	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5
Pro-Glu	2.1	1.8	1.4	1.2	1.1	1.2	1.3	1.5	1.6	1.6	1.6	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0	0.9
Ser-Pyr	1.5	1.5	1.5	1.4	1.4	1.3	1.2	1.1	0.9	0.8	0.7	0.7	0.9	1.2	1.5	1.8	2.1	2.2	2.3	2.4
Thr-SuCm	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.6	0.6	0.6	0.6
Trp-AcCm/Ala	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tyr-AcCm/Fumm	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.8	0.8
Val-SuCm	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.8	0.8

Time [h]	202.6	205.0	207.3	209.6	212.0	214.3	216.6	218.9	221.3	223.6	225.9	228.3	230.6	232.9
Glucose	0.9	0.8	0.7	0.6	0.6	0.7	0.8	0.9	1.1	1.2	1.4	1.5	1.6	1.6
Lactate	2.6	2.6	2.8	3.4	4.1	4.8	5.5	6.1	6.6	7.1	7.4	7.6	7.7	7.7
Pyruvate	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alanine	1.3	1.3	1.2	1.1	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Arginine	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Asparagine	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Aspartate	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cysteine	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Glutamate	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Glutamine	0.6	0.4	0.3	0.2	0.1	0.2	0.3	0.4	0.4	0.5	0.6	0.6	0.6	0.6
Glycine	0.8	0.7	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4
Histidine	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Isoleucine	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Leucine	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Lysine	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Methionine	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Phenylalanine	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Proline	0.8	0.6	0.4	0.2	0.3	0.6	0.8	1.1	1.3	1.4	1.5	1.6	1.6	1.7
Serine	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Threonine	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Tryptophan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tyrosine	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6
Valine	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Carbohydrates	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
DNA	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RNA	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Lipids	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Proteins	7.9	7.6	7.2	6.6	6.0	5.8	5.8	6.0	6.3	6.6	6.9	7.0	7.0	7.0
G6P-F6P	0.9	0.9	1.0	1.0	1.1	1.2	1.4	1.6	1.7	1.9	2.0	2.1	2.2	2.3
F6P-GAP	0.9	0.9	1.0	1.0	1.1	1.2	1.4	1.6	1.7	1.9	2.0	2.1	2.2	2.3
GAP-Pyr	1.9	2.0	2.1	2.2	2.3	2.6	2.9	3.2	3.5	3.8	4.1	4.3	4.5	4.7
Pyr-Pyrm	7.6	7.7	7.6	7.4	7.0	6.6	6.3	6.1	5.9	5.8	5.7	5.7	5.7	5.7
Pyrm-AcCm	14.1	13.9	13.5	12.8	12.0	11.3	10.9	10.7	10.6	10.6	10.6	10.6	10.7	10.7
OAA/AcCm-Citm	21.7	21.2	20.3	19.0	17.6	16.7	16.2	16.0	16.1	16.4	16.6	16.8	16.9	16.9
Citm-AKGm	24.4	23.8	22.7	21.3	19.7	18.7	18.2	18.2	18.4	18.7	19.0	19.2	19.3	19.3
AKGm-SuCm	27.0	26.4	25.2	23.7	22.1	21.0	20.6	20.6	20.9	21.3	21.6	21.9	22.0	21.9
SuCm-Fumm	29.3	28.5	27.3	25.6	23.9	22.8	22.4	22.5	22.8	23.2	23.6	23.9	24.0	23.9
Fumm-Malm	30.0	29.3	27.9	26.2	24.5	23.4	23.1	23.2	23.6	24.1	24.5	24.8	24.9	24.9
Malm-OAAm	20.6	20.1	19.2	18.0	16.7	15.7	15.2	15.1	15.2	15.4	15.6	15.7	15.8	15.8
Malm-Pyrm	6.8	6.6	6.3	6.0	5.8	5.8	5.9	6.1	6.3	6.5	6.6	6.7	6.7	6.6
Citm-Cit	2.8	2.7	2.5	2.3	2.1	2.0	2.1	2.1	2.3	2.4	2.4	2.5	2.5	2.5
Cit-AcC/Mal	2.8	2.7	2.5	2.3	2.1	2.0	2.1	2.1	2.3	2.4	2.4	2.5	2.5	2.5
Mal-Malm	2.8	2.7	2.5	2.3	2.1	2.0	2.1	2.1	2.3	2.4	2.4	2.5	2.5	2.5
G6P-P5P	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NADH-OP	109.6	107.4	103.2	97.3	91.0	86.7	84.7	84.5	85.2	86.4	87.5	88.4	88.8	88.7
FADH2-OP	31.9	31.1	29.7	27.9	26.0	24.9	24.5	24.6	25.0	25.4	25.9	26.2	26.3	26.2
OP-ATP	321.8	315.1	302.3	285.0	266.3	253.8	248.2	247.6	250.0	253.6	257.2	259.8	260.9	260.5
ATPwOP	62.2	60.7	57.9	54.1	50.4	48.6	48.7	49.9	51.7	53.5	55.0	56.0	56.4	56.3
ATPtot	383.4	375.4	359.9	338.9	316.6	302.2	296.5	297.1	301.1	306.4	311.5	315.1	316.7	316.1
Ala-Pyr	1.9	1.8	1.8	1.7	1.6	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Arg-Glu	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.6
Asn-Asp	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
Asp-OAAm	1.1	1.1	1.1	1.0	1.0	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Cys-Pyr	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
Gln-Glu	0.9	0.8	0.7	0.5	0.4	0.2	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.5
Glu-AKGm	2.7	2.6	2.5	2.4	2.4	2.4	2.5	2.5	2.6	2.7	2.8	2.8	2.8	2.8
Gly-Ser	1.6	1.6	1.4	1.3	1.2	1.1	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2
His-Glu	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Ile-AcCm/SuCm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
Leu-AcCm	1.2	1.1	1.1	1.0	1.0	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0
Lys-AcCm	1.0	0.9	0.9	0.8	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8
Met/Ser-SuCm/Cys	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Phe-Tyr	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Pro-Glu	0.8	0.7	0.5	0.4	0.5	0.8	1.0	1.2	1.4	1.5	1.6	1.7	1.7	1.8
Ser-Pyr	2.3	2.2	2.0	1.8	1.6	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.6	1.6
Thr-SuCm	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Trp-AcCm/Ala	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tyr-AcCm/Fumm	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.9	1.0	1.1	1.1	1.1	1.1	1.1
Val-SuCm	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9