Supplementary Tables

Supplementary Table 1: List of model reactions (numbered r1-r14)

Model Reactions	
Glucose transport (r1)	Glucose external $\Leftrightarrow$ Glucose
Hexokinase (r2)	Phosphates in Glycosome + Glucose $\xrightarrow{\text{ATPgly,ADPgly}}$ Glucose 6-phosphate
Glucose-phosphate isomerase (r3)	Glucose 6-phosphate $\Leftrightarrow$ Fructose 6-phosphate
Phosphofructokinase (r4)	Phosphates in Glycosome + Fructose 6-phosphate $\xrightarrow{\text{ATPgly}}$ Fructose 1,6-bisphosphate
Aldolase (r5)	Fructose 1,6-bisphosphate $\xleftrightarrow{\text{DHAP gly.,ATP gly.,ADP gly.}}$ Glyceraldehyde 3-phosphate + Dihydroxyacetone phosphate
Triosephosphate isomerase (r6)	Dihydroxyacetone phosphate $\xleftrightarrow{\text{DHAP gly.}}$ Glyceraldehyde 3-phosphate
Glyceraldehyde 3-phosphate dehydrogenase (r7)	Glyceraldehyde 3-phosphate + NAD $\Leftrightarrow$ NADH + 1,3-bisphosphoglycerate
Glycerol 3-phosphate dehydrogenase (r8)	Dihydroxyacetone phosphate + NADH $\xleftrightarrow{\text{DHAP gly.,Gy3P g.}}$ NAD + Glycerol 3-phosphate
Glycerol 3-phosphate oxidase (r9)	Glycerol 3-phosphate $\xrightarrow{\text{Gy3P c.}}$ Dihydroxyacetone phosphate
Pyruvate transport (r10)	Pyruvate $\longrightarrow$ Pyruvate external
Phosphoglycerate kinase (r11)	1,3-bisphosphoglycerate $\xleftrightarrow{\text{3-PGA g.,ATP gly.,ADP gly.}}$ 3-PGA 2-PGA PEP + Phosphates in Glycosome
Pyruvate kinase (r12)	3-PGA 2-PGA PEP $\xrightarrow{\text{PEP c.,ADPcyt.,ATPcyt.}}$ Phosphates cytosol + Pyruvate
ATPase (r13)	Phosphates cytosol $\xrightarrow{\text{ADPcyt.,ATPcyt.}}$ $\emptyset$
Glycerol kinase (r14)	Glycerol 3-phosphate $\xleftrightarrow{\text{Gy3P g.,ATP gly.,ADP gly.}}$ Phosphates in Glycosome + Glycerol

Abbreviations: ADPcyt: ADP in the cytosol, ADPgly: ADP in the glycosome, ATPcyt: ATP in the cytosol, ATPgly: ATP in the glycosome, DHAP gly.: Dihydroxyacetone phosphate in the glycosome, Gy3P c.: Glycerol 3-phosphate in the cytosol, Gy3P g.: Glycerol 3-phosphate in the glycosome, 3-PGA g.: 3-phosphoglycerate in the glycosome, PEP c.: Phosphoenolpyruvate in the cytosol

Supplementary Table 2: List of model kinetic rates (numbered v1-v14)

Model Kinetic Rates
$v1 = \dfrac{\frac{tot_{cell}}{Vt} \cdot Vm1 \cdot (GlcE - GlcI)}{K1Glc + GlcE + GlcI + \frac{afac \cdot GlcE \cdot GlcI}{K1Glc}}$

$$v2 = \frac{\frac{tot_{cell}}{Vt} \cdot Vm2 \cdot GlcI \cdot ATPg}{K2ATPg + K2GlcI \cdot \left(1 + \frac{Glc6P}{K2Glc6P} + \frac{GlcI}{K2GlcI}\right) \cdot \left(1 + \frac{ATPg}{K2ATPg} + \frac{ADPg}{K2ADPg}\right)}$$

$$v3 = \frac{\frac{\frac{tot_{cell}}{Vt} \cdot Vm3 \cdot \left(\frac{Glc6P}{K3Glc6P} - \frac{Fru6P}{K3Fru6P}\right)}{1 + \frac{Glc6P}{K3Glc6P} + \frac{Fru6P}{K3Fru6P}}}{glycosome}$$

$$v4 = \frac{\frac{\frac{tot_{cell}}{Vt} \cdot Vm4 \cdot K4i1Fru16BP \cdot Fru6P \cdot ATPg}{K4ATPg \cdot K4Fru6P \cdot (K4i1Fru16BP + Fru16BP)\left(1 + \frac{Fru16BP}{K4i1Fru16BP} + \frac{Fru6P}{K4Fru6P}\right) \cdot \left(1 + \frac{ATPg}{K4ATPg}\right)}}{glycosome}$$

$$v5 = \frac{\frac{tot_{cell}}{Vt} \cdot \left(\frac{Vm5f \cdot Fru16BP}{0.009 \cdot \left(1 + \frac{ATPg}{0.68} + \frac{ADPg}{1.51} + \frac{sumAg - (ATPg + ADPg)}{3.65}\right)} - \frac{Vm5r \cdot GAP \cdot DHAPg}{K5DHAP \cdot K5GAP}\right)}{1 + \frac{GAP}{K5GAP} + \frac{DHAPg}{K5DHAP} + \frac{GAP \cdot DHAPg}{K5DHAP \cdot K5GAP} + \frac{Fru16BP}{0.009 \cdot \left(1 + \frac{ATPg}{0.68} + \frac{ADPg}{1.51} + \frac{sumAg - (ATPg + ADPg)}{3.65}\right)} + \frac{Fru16BP \cdot GAP}{K5GAPi \cdot 0.009 \cdot \left(1 + \frac{ATPg}{0.68} + \frac{ADPg}{1.51} + \frac{sumAg - (ATPg + ADPg)}{3.65}\right)}}$$

$$v6 = \frac{\frac{tot_{cell}}{Vt} \cdot TPIact \cdot Vm6 \cdot \left(\frac{DHAPg}{K6DHAPg} - \frac{5.7 \cdot GAP}{K6GAP}\right)}{\left(1 + \frac{GAP}{K6GAP} + \frac{DHAPg}{K6DHAPg}\right)}$$

$$v7 = \frac{\frac{tot_{cell}}{Vt} \cdot Vm7 \cdot \frac{Vm7f \cdot \left(GAP \cdot \frac{NAD}{K7GAP \cdot K7NAD} - \frac{Vm7r}{Vm7f} \cdot \frac{BPGA13 \cdot NADH}{K7BPGA13 \cdot K7NADH}\right)}{\left(1 + \frac{GAP}{K7GAP} + \frac{BPGA13}{K7BPGA13}\right) \cdot \left(1 + \frac{NAD}{K7NAD} + \frac{NADH}{K7NADH}\right)}}{glycosome}$$

$$v8 = \frac{\frac{tot_{cell}}{Vt} \cdot Vm8 \cdot Vm8f \cdot \left(\frac{NADH \cdot DHAPg}{K8DHAPg \cdot K8NADH} - \frac{Vm8r \cdot NAD \cdot Gly3Pg}{K8Gly3Pg \cdot K8NAD \cdot Vm8f}\right)}{\left(1 + \frac{NAD}{K8NAD} + \frac{NADH}{K8NADH}\right) \cdot \left(1 + \frac{DHAPg}{K8DHAPg} + \frac{Gly3Pg}{K8Gly3Pg}\right)}$$

$$v9 = \frac{\frac{\frac{tot_{cell}}{Vt} \cdot Vm9 \cdot Gly3Pc}{K9Gly3Pc \cdot 1 + Gly3Pc}}{tot_{cell}}$$

$$v10 = \frac{\frac{\frac{tot_{cell}}{Vt} \cdot Vm10 \cdot Pyr}{K10Pyr}}{1 + \frac{Pyr}{K10Pyr}}$$

$$v11 = \frac{\frac{tot_{cell}}{Vt} \cdot Vm11 \cdot Vm11f \cdot \left(\frac{-Vm11r \cdot PGAg \cdot ATPg}{K11ATPg \cdot K11PGA3 \cdot Vm11f} + \frac{BPGA13 \cdot ADPg}{K11ADPg \cdot K11BPGA13}\right)}{\left(1 + \frac{BPGA13Gly}{K11ADPg} + \frac{PGAg}{K11PGA3}\right) \cdot \left(1 + \frac{ATPg}{K11ATPg} + \frac{ADPg}{K11ADPg}\right)}$$

$$v12 = \frac{\frac{tot_{cell}}{Vt} \cdot Vm12 \cdot \left(\frac{PEPc}{0.34 \cdot \left(1 + \frac{ADPc}{0.57} + \frac{ATPc}{0.64}\right)}\right)^{n12} \cdot ADPc}{K12ADP}}{\left(1 + \left(\frac{PEPc}{0.34 \cdot \left(1 + \frac{ADPc}{0.57} + \frac{ATPc}{0.64}\right)}\right)^{n12}\right) \cdot \left(1 + \frac{ADPc}{K12ADP}\right)}$$

$$v13 = \frac{\frac{tot_{cell}}{Vt} \cdot K13 \cdot ATPc}{\frac{ADPc}{cytosol}}$$

$$v14 = \frac{\frac{tot_{cell}}{Vt} \cdot Vm14 \cdot \left(\frac{Vm14f \cdot ADPg \cdot Gly3Pg}{K14ADPg \cdot K14Gly3Pg} - \frac{Gly \cdot Vm14r \cdot ATPg}{K14ATPg \cdot K14Gly}\right)}{\left(1 + \frac{Gly}{K14Gly} + \frac{Gly3Pg}{K14Gly3Pg}\right) \cdot \left(1 + \frac{ATPg}{K14ATPg} + \frac{ADPg}{K14ADPg}\right)}$$

Abbreviations: afac: α factor, a constant describing the symmetry of the glucose transporter, cytosol: cytosolic volume, glycosome: glycosomal volume, tot_{cell} and Vt: total cell volume (all volumes in µL per mg protein).
Note: Variable parameters used in the model are shown in **blue**, constants and metabolite concentrations are shown in **black**. Vm values indicate maximum reaction rates (v_{max} values), distinguishing between forward (f) and reverse (r) direction for reversible reactions. K values indicate Michaelis-Menten constants (K_M values) for the various substrates. Metabolite concentrations are distinguished by subscripts for cytosolic (c) and glycosomal (g) pools, where appropriate.

Supplementary Table 3: Summary of parameter values with their associated uncertainty retrieved from literature for the trypanosome case study

Reaction	Name*	Value	Units	SD	Error	Reference
Glucose transport (r1)	K1Glc	2	mM	NaN	Multiplicative	Ter Kuile, B.H. et al. (1991) J. Biol. Chem. 266:857-62
	Vm1	106.2	nM/min	NaN	Multiplicative	Ter Kuile, B.H. et al. (1991) J. Biol. Chem. 266:857-62
Hexokinase (r2)	K2ADPg	0.126	mM	NaN	Multiplicative	Nwagwu, M. et al. (1982) Acta Trop. 39:61–72
	K2ATPg	0.116	mM	NaN	Multiplicative	Nwagwu, M. et al. (1982) Acta Trop. 39:61–72
	K2Glc6P	12	mM	NaN	Multiplicative	Bakker, B. M. et al. (1999) J. Biol. Chem. 274:14551–14559
	K2GlcI	0.1	mM	NaN	Multiplicative	Bakker, B. M. et al. (1997) J. Biol. Chem. 272:3207–3215
	Vm2	1929	nM/min	116	Additive	Misset, O. et al. (1984) Eur J Biochem. 144:475-83.
Glucose-phosphate isomerase (r3)	K3Fru6P	0.12	mM	0.045	Additive	Marchand, M., et al. (1989) Eur J Biochem. 184(2):455-64
	K3Glc6P	0.4	mM	NaN	Multiplicative	Helfert, S. et al (2001) Biochem. J. 357:117–125
	Vm3	1305	nM/min	115	Additive	Misset, O., et al. (1986) Eur J Biochem. 157(2):441-53.
Phosphofructokinase (r4)	K4ATPg	0.026	mM	NaN	Multiplicative	Cronin, C.N. et al. (1985) Biochem J. 227(1):113-24.
	K4Fru6P	0.82	mM	NaN	Multiplicative	Cronin, C.N. et al. (1985) Biochem J. 227(1):113-24.
	K4i1Fru16BP	15.8	mM	NaN	Multiplicative	Cronin, C.N. et al.(1987) Biochem J. 245(1):13-8.
	K4i2Fru16BP	10.7	mM	NaN	Multiplicative	Cronin, C.N. et al. (1987) Biochem J. 245(1):13-8.
	Vm4	1708	nM/min	299	Additive	Albert, M.A. et al. (2005) J. Biol. Chem. 280:28306-28315
Aldolase (r5)	K5DHAP	0.015	mM	NaN	Multiplicative	Callens, M. et al. (1991) Mol

						Biochem Parasitol. 47(1):1-9.
	K5GAP	0.067	mM	NaN	Multiplicative	Callens, M. et al. (1991) Mol Biochem Parasitol. 47(1):1-9.
	K5GAPi	0.098	mM	NaN	Multiplicative	Callens, M. et al. (1991) Mol Biochem Parasitol. 47(1):1-9.
	Vm5f	560	nM/min	153	Additive	Albert, M.A. et al. (2005) J. Biol. Chem. 280:28306-28315
	Vm5r	219.555	nM/min	NaN	Multiplicative	Albert, M.A. et al. (2005) J. Biol. Chem. 280:28306-28315
Triosephosphate isomerase (r6)	K6DHAPg	1.2	mM	0.1	Additive	Lambeir, A.M., et al. (1987) Eur J Biochem. 168(1):69-74.
	K6DHAPg	0.62	mM	0.01	Additive	Krietsch, W.K.G. et al. (1970) Eur J Biochem. 14: 289-300.
	K6DHAPg	0.6	mM	0.02	Additive	Krietsch, W.K.G. et al. (1970) Eur J Biochem. 14: 289-300.
	K6GAP	0.25	mM	0.05	Additive	Lambeir, A.M. et al. (1987) Eur J Biochem. 168(1):69-74.
	K6GAP	0.32	mM	0.02	Additive	Krietsch, W.K.G. et al. (1970) Eur J Biochem. 14: 289-300.
	K6GAP	0.32	mM	0.01	Additive	Krietsch, W.K.G. et al. (1970) Eur J Biochem. 14: 289-300.
	Vm6	1000	nM/min	NaN	Multiplicative	Albert, M.A. et al. (2005) J. Biol. Chem. 280:28306-28315
Glyceraldehyde 3-phosphate dehydrogenase (r7)	K7BPGA13	0.10	mM	0.06	Additive	Lambeir et. al. (1991) Eur J Biochem. 198(2):429-35.
	K7GAP	0.15	mM	0.06	Additive	Lambeir et. al. (1991) Eur J Biochem. 198(2):429-35.
	K7GAP	0.17	mM	0.01	Additive	Lambeir et. al. (1991) Eur J Biochem. 198(2):429-35.
	K7NAD	0.45	mM	0.18	Additive	Lambeir et. al. (1991) Eur J Biochem. 198(2):429-35.
	K7NADH	0.02	mM	0.009	Additive	Lambeir, A.M. et al. (1991), Eur. J. Biochem. 198, 429-435
	Vm7r	161	nM/min	27.7	Additive	Albert, M.A et al. (2005) , J. Biol. Chem. 280:28306-28315
	Vm7f	710	nM/min	288	Additive	Albert, M.A et al. (2005) , J. Biol. Chem. 280:28306-28315
Glycerol 3-phosphate dehydrogenase (r8)	K8DHAPg	0.1	mM	NaN	Multiplicative	Marché, S. et al. (2000) Mol Biochem Parasitol. 106(1):83-91.
	K8DHAPg	0.12	mM	NaN	Multiplicative	Marché, S. et al. (2000) Mol Biochem Parasitol. 106(1):83-91.
	K8DHAPg	0.22	mM	NaN	Multiplicative	Ostro, M.J. et al. (1977) J. Biol. Chem. 252(15):5575-5583
	K8Gly3Pg	2.25	mM	NaN	Multiplicative	Marché, S. et al. (2000) Mol Biochem Parasitol. 106(1):83-91.
	K8Gly3Pg	1.7	mM	NaN	Multiplicative	Marché, S. et al. (2000) Mol Biochem Parasitol. 106(1):83-91.
	K8Gly3Pg	0.18	mM	NaN	Multiplicative	Ostro, M.J. et al. (1977) J. Biol. Chem. 252(15):5575-5583
	K8NAD	0.32	mM	NaN	Multiplicative	Marché, S. et al. (2000) Mol

						Biochem Parasitol. 106(1):83-91.
	K8NAD	0.42	mM	NaN	Multiplicative	Marché, S. et al. (2000) Mol Biochem Parasitol. 106(1):83-91.
	K8NAD	0.012	mM	NaN	Multiplicative	Ostro, M.J. et al. (1977) J. Biol. Chem. 252(15):5575-5583
	K8NADH	0.01	mM	NaN	Multiplicative	Marché, S. et al. (2000) Mol Biochem Parasitol. 106(1):83-91.
	K8NADH	0.024	mM	NaN	Multiplicative	Marché, S. et al. (2000) Mol Biochem Parasitol. 106(1):83-91.
	K8NADH	0.008	mM	NaN	Multiplicative	Ostro, M.J. et al. (1977) J. Biol. Chem. 252(15):5575-5583
	Vm8f	465	nM/min	21	Additive	Misset, O. et al. (1984) Eur J Biochem. 144:475-83.
	Vm8r	130.2	nM/min	NaN	Multiplicative	Unpublished data from P.A.Michels
Glycerol 3-phosphate oxidase (r9)	Vm9	3.68E+02	nM/min	NaN	Multiplicative	Albert, M.A. et al. (2005) J. Biol. Chem. 280:28306-28315
	K9Gly3Pc	1.72	mM	0.08	Additive	Fairlamb, A.H. et al. (1977) Exp. Parasitology 43:353-36.
Pyruvate transport (r10)	K10Pyr	1.96	mM	0.28	Additive	Wiemer, E.A. et al. (1992) Biochem Biophys Res Commun. 184(2):1028-34.
	Vm10	200	nM/min	NaN	Multiplicative	Wiemer, E.A. et al. (1995) Biochem J. 312 (Pt 2):479-84.
Phosphoglycerate kinase (r11)	K11ADPg	0.1	mM	NaN	Multiplicative	Bakker, B. M. et al. (1997) J. Biol. Chem. 272:3207–3215
	K11ATPg	0.29	mM	0.15	Additive	Misset, O. et al. (1987) Eur J Biochem. 162(3):493-500.
	K11BPGA13	0.003	mM	NaN	Multiplicative	Teusink, B. et al. (2000) Eur J Biochem. 267(17):5313-29.
	K11PGA3	1.62	mM	1.1	Additive	Misset, O. et al. (1987) Eur J Biochem. 162(3):493-500.
	Vm11f	2862	nM/min	119	Additive	Albert, M.A. et al. (2005) J. Biol. Chem. 280:28306-28315
	Vm11r	1358	nM/min	254	Additive	Albert, M.A. et al. (2005) J. Biol. Chem. 280:28306-28315
Pyruvate kinase (r12)	K12ADP	0.114	mM	0.013	Additive	Barnard, J.P. et al. (1988) Mol Biochem Parasitol. 31(2):141-7.
	Vm12	1020	nM/min	221	Additive	Albert, M.A. et al. (2005) J. Biol. Chem. 280:28306-28315
	n12	2.5	mM	NaN	Multiplicative	Barnard J.P. et al. (1988) Mol Biochem Parasitol. 31(2):141-7.
ATPase (r13)	K13	50	mM	NaN	Multiplicative	Bakker, B. M. et al. (1997) J. Biol. Chem. 272:3207–3215
Glycerol kinase (r14)	K14ADPg	0.56	mM	0.02	Additive	Králová, I. et al. (2000) Eur J Biochem.267(8):2323-33.
	K14ATPg	0.24	mM	0.09	Additive	Králová, I. et al. (2000) Eur J Biochem.267(8):2323-33.
	K14Gly	0.44	mM	0.09	Additive	Králová, I. et al. (2000) Eur J Biochem.267(8):2323-33.

	K14Gly3Pg	3.83	mM	1.15	Additive	Králová, I. et al. (2000) Eur J Biochem.267(8):2323-33.
	Vm14f	200	nM/min	NaN	Multiplicative	Hammond, D.J. et al. (1985) J Biol Chem. 260(29):15646-54.
	Vm14r	33400	nM/min	NaN	Multiplicative	Hammond, D.J. et al. (1985) J Biol Chem. 260(29):15646-54.

*Parameter names are as used in the published model.

Supplementary Table 4: Weighting scheme used to assess the plausibility of parameter values found for reactions in glycolysis pathway

Categories	Subcategories	Description	Weight value
Method	*In vivo*	Parameter value was measured *in vivo* – the ideal condition for our modelling system	2
	In vitro	Parameter value was measured *in vitro*, and does not match our modelling system, but the values are still useful.	1
Organism	Identical	In the ideal case, the characterized enzyme was obtained from *Trypanosoma brucei*, our model organism.	4
	Related	Enzymes from other protozoan organisms (i.e. from the same phylum)	2
	Unrelated	Enzymes from all other organisms	1
Protein/ Enzyme	Identical	Parameter value is measured for a protein/ enzyme catalyzing the same reaction as in the model	4
	Related	Parameter value is measured for a reaction from a related enzyme class (shared three leading digits of the EC number)	2
	Different	Parameter value is measured for a different protein/ enzyme class	1
Experimental Conditions	Identical	Ideally, the pH and temperature of the assay matches the modelling conditions – pH 7.0 and 37°C.	4
	Similar or within range	Only partial information is available, but the reported information matches the ideal modelling condition (e.g., temperature information missing, but pH 7.0 is reported, or pH information is missing, but 37°C is reported). Also applied when the pH is within ± 1 of pH 7 and temperature reported is within ± 2°C of 37°C.	2
	Out of range	The parameter value is measured in conditions that differ more extremely from the modelling conditions.	1

Supplementary Table 5: Summary of parameter values and assignment of weights for case study

Reaction	Parameter	Value	SD	Method	Organism	Protein	Condition	Total weight
r6	K6DHAPg	1.2	0.1	1	4	4	2	32
	K6DHAPg	0.62	0.01	1	1	4	2	8/2*
	K6DHAPg	0.6	0.02	1	1	4	2	8/2*
	K6GAP	0.25	0.05	1	4	4	2	32

	K6GAP	0.32	0.02	1	1	4	2	8/2*
	K6GAP	0.32	0.01	1	1	4	2	8/2*
r7	K7GAP	0.17	0.01	1	4	4	2	32/2*
	K7GAP	0.15	0.06	1	4	4	2	32/2*
r8	K8DHAPg	0.22	NaN	1	1	4	2	8
	K8DHAPg	0.1	NaN	1	4	4	2	32
	K8DHAPg	0.12	NaN	1	1	4	2	8
	K8Gly3Pg	2.25	NaN	1	4	4	2	32
	K8Gly3Pg	1.7	NaN	1	1	4	2	8
	K8Gly3Pg	0.18	NaN	1	1	4	2	8
	K8NAD	0.32	NaN	1	4	4	2	32
	K8NAD	0.42	NaN	1	1	4	2	8
	K8NAD	0.012	NaN	1	1	4	2	8
	K8NADH	0.01	NaN	1	4	4	2	32
	K8NADH	0.024	NaN	1	1	4	2	8
	K8NADH	0.008	NaN	1	1	4	2	8

*If more than one parameter value (for the same parameter) is retrieved from the same publication, the total weight of each of the values is divided by the total number of values used from this specific publication. This avoids inflating the influence of a single study.

Supplementary Table 6: Input matrices

Input matrix	Parameter	Value	Uncertainty	Weight	Uncertainty type
1 (r6)	K6DHAPg	1.2	0.1	32	0
	K6DHAPg	0.62	0.01	4	0
	K6DHAPg	0.6	0.02	4	0
2 (r6)	K6GAP	0.25	0.05	32	0
	K6GAP	0.32	0.02	4	0
	K6GAP	0.32	0.01	4	0
3 (r7)	K7BPGA13	0.013	0.0035	8	0
	K7BPGA13	0.01	0.06	32	0
4 (r7)	K7GAP	0.17	0.01	16	0
	K7GAP	0.15	0.06	16	0
5 (r8)	K8DHAPg	0.1	NaN	32	1
	K8DHAPg	0.12	NaN	8	1
	K8DHAPg	0.22	NaN	8	1
6 (r8)	K8Gly3Pg	2.25	NaN	32	1
	K8Gly3Pg	1.7	NaN	8	1
	K8Gly3Pg	0.18	NaN	8	1
7 (r8)	K8NAD	0.32	NaN	32	1
	K8NAD	0.42	NaN	8	1
	K8NAD	0.012	NaN	8	1
8 (r8)	K8NADH	0.01	NaN	32	1

	K8NADH	0.024	NaN	8	1
	K8NADH	0.008	NaN	8	1

Supplementary Table 7: Summary of log-normal distribution properties for parameters in the trypanosome glycolysis pathway

Reaction	Parameter Name	Mode	Spread	mu	sigma	x_{min}	x_{max}
r1	K1Glc	1.9909	1.21	0.72369	0.18732	1.6454	2.409
r1	Vm1	105.72	1.21	4.6959	0.18732	87.371	127.92
r2	K2ADPg	0.12543	1.21	-2.0409	0.18732	0.10366	0.15177
r2	K2ATPg	0.11547	1.21	-2.1236	0.18732	0.095433	0.13972
r2	K2Glc6P	11.946	1.21	2.5155	0.18732	9.8724	14.454
r2	K2GlcI	0.099547	1.21	-2.272	0.18732	0.08227	0.12045
r2	Vm2	1925.5	1.1277	7.5772	0.11931	1707.5	2171.4
r3	K3Fru6P	0.11236	2.0657	-1.8138	0.61011	0.054393	0.2321
r3	K3Glc6P	0.39819	1.21	-0.88574	0.18732	0.32908	0.48181
r3	Vm3	1300	1.1923	7.2001	0.17329	1090.3	1550
r4	K4ATPg	0.02587	1.21	-3.6196	0.18732	0.02138	0.031302
r4	K4Fru6P	0.81628	1.21	-0.1679	0.18732	0.67462	0.9877
r4	K4i1Fru16BP	15.728	1.21	2.7906	0.18732	12.999	19.031
r4	K4i2Fru16BP	10.652	1.21	2.4008	0.18732	8.8029	12.888
r4	Vm4	1683.9	1.4155	7.5374	0.32945	1189.6	2383.5
r5	K5DHAP	0.014932	1.21	-4.1692	0.18732	0.012341	0.018068
r5	K5GAP	0.066696	1.21	-2.6725	0.18732	0.055121	0.080703
r5	K5GAPi	0.097556	1.21	-2.2922	0.18732	0.080625	0.11804
r5	Vm5f	540.2	1.7102	6.5228	0.48043	315.87	923.86
r5	Vm5r	218.56	1.21	5.4221	0.18732	180.63	264.46
r6	K6DHAPg	1.1352	1.35	0.20821	0.28537	0.843	1.528
r6	K6GAP	0.2618	1.39	-1.2435	0.31118	0.1889	0.3628
r6	Vm6	1000	1.1	6.9168	0.0949	909	1100
r7	K7BPGA13	0.1	1.67	-2.0885	0.4627	0.06	0.167
r7	K7GAP	0.15	2.5	-1.373	0.7239	0.06	0.375
r7	K7NAD	0.45	2.5	-0.2744	0.7239	0.18	1.125
r7	K7NADH	0.02	2.22	-3.4832	0.6549	0.009	0.0444
r7	Vm7r	236.7	2.47	5.9811	0.7172	95.8	584.65

r7	Vm7f	710	2.47	7.0796	0.7172	287.45	1.7537e+03
r8	K8DHAPg	0.1055	1.355	-2.1648	0.291	0.07786	0.1428
r8	K8Gly3Pg	2.11	2.54	1.279	0.73209	0.829	5.33
r8	K8NAD	0.3184	3.5	-0.34533	0.89394	0.091	1.113
r8	K8NADH	0.01	1.44	-4.4868	0.3441	0.0069	0.0144
r8	Vm8f	465	3.6	6.9655	0.9075	129.16	1674
r8	Vm8r	130.2	1.1	4.8781	0.0949	118.36	143.2
r9	Vm9	368	1.1	5.9103	0.0476	334.5455	404.8
r9	K9Gly3Pc	1.72	1.1	0.5446	0.0476	1.5636	1.892
r10	K10Pyr	1.96	1.1	0.6752	0.0476	1.7818	2.156
r10	Vm10	200	1.1	5.3006	0.0476	181.8182	220
r11	K11ADPg	0.099547	1.21	-2.272	0.18732	0.08227	0.12045
r11	K11ATPg	0.25821	2.648	-0.78322	0.75549	0.097512	0.68374
r11	K11BPGA13	0.002986	1.21	-5.7786	0.18732	0.002468	0.0036135
r11	K11PGA3	1.3444	3.4264	1.0785	0.88462	0.39236	4.6064
r11	Vm11f	2859.5	1.0867	7.9653	0.082836	2631.4	3107.4
r11	Vm11r	1334.9	1.449	7.3186	0.34936	921.23	1934.2
r12	K12ADP	0.11327	1.2552	-2.1288	0.22185	0.090234	0.14218
r12	Vm12	996.87	1.5348	7.0621	0.3968	649.53	1530
r12	n12	2.4899	1.21	0.94731	0.18732	2.0577	3.0127
r13	K13	49.773	1.21	3.9426	0.18732	41.135	60.226
r14	K14ADPg	0.55964	1.074	-0.57538	0.071223	0.52108	0.60107
r14	K14ATPg	0.22513	2.0657	-1.1189	0.61011	0.10898	0.46504
r14	K14Gly	0.43107	1.4992	-0.69882	0.3777	0.28754	0.64625
r14	K14Gly3Pg	3.6682	1.7997	1.5674	0.51736	2.0383	6.6016
r14	Vm14f	199.09	1.21	5.3289	0.18732	164.54	240.9
r14	Vm14r	33249	1.21	10.447	0.18732	27478	40231