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| --- | --- | --- | --- | --- |
| **Enzyme** | **Parameter** | **Value** | **Unit** | **Ref.** |
| G6PDH | *Vmax,c/g* | 8.4 | nmol · min−1 · mg protein−1 | [1,2] |
|  | *Keq* | 5.02 | dimensionless | [3]*a* |
|  | *Km,Glc-6-P* | 0.058 | mM | [4] |
|  | *Km, 6-PGL* | 0.04 | mM | [5]*b* |
|  | *Km, NADP+* | 0.0094 | mM | [4] |
|  | *Km, NADPH* | 0.0001 | mM | [5]*b* |
| PGL | *Vmax,g* | 5 | nmol · min−1 · mg protein−1 | [1,6] |
|  | *Vmax,c* | 28 | nmol · min−1 · mg protein−1 | [1,6] |
|  | *Keq* | 20000 | dimensionless | [7]*a* |
|  | *Km,6-PGL* | 0.05 | mM | [8]*c* |
|  | *Km,6-PG* | 0.05 | mM | *d* |
|  | *k* | 0.055 | min−1 | [9] |
| 6PGDH | *Vmax,c/g* | 10.6 *e* | nmol · min−1 · mg protein−1 | [1] |
|  | *Keq* | 47 | dimensionless | [10] |
|  | *Km,6-PG* | 0.0035 | mM | [11] |
|  | *Km,Rul-5-P* | 0.03 | mM | [11] |
|  | *Km,NADP+* | 0.001 | mM | [11] |
|  | *Km,NADPH* | 0.0006 | mM | [11] |
| PPI | *Vmax,c/g* | 72 *e* | nmol · min−1 · mg protein−1 | [1] |
|  | *Keq* | 5.6 | dimensionless | [12] |
|  | *Km,Rul5P* | 4 | mM | [8]*c* |
|  | *Km,Rib5P* | 1.4 | mM | [8]*c* |
| TR | *Vmax* | 252 | nmol · min−1 · mg protein−1 | [13]*f* |
|  | *Keq* | 434 | dimensionless | [14]*g* |
|  | *Km,TS2* | 0.0069 | mM | [15] |
|  | *Km,TSH2* | 0.0018 | mM | *h* |
|  | *Km,NADPH* | 0.00077 | mM | [15] |
|  | *Km,NADP* | 0.081 | mM | *h* |
| TOX | *k* | 2-200 | μl · min−1 · mg protein−1 | Varies depending on oxidative stress |
| NADPHu | *kc/g* | 2 | μl · min−1 · mg protein−1 | *i* |
| G6PP | *Vmax* | 21 | nmol · min−1 · mg protein−1 | This paper |
|  | *Keq* | 263 | dimensionless | [16] |
|  | *Km,Glc-6-P* | 5.6 | mM | [17]*j* |
|  | *Km,Glc* | 5.6 | mM | [17]*d,j* |
| ATP:ADP | *Vmax* | 1.5 | nmol · min−1 · mg protein−1 | *k* |
| antiporter | *Keq* | 1 | dimensionless | *k* |
|  | *Km,ATPc/g* | 0.02 | mM | *k* |
|  | *Km,ADPc/g* | 0.02 | mM | *k* |
| RK | *Vmax,g* | 5 | nmol · min−1 · mg protein−1 | *l* |
|  | *Keq* | 0.0036 | dimensionless | [18] |
| *Km,Rib-5-P* | 0.39 | mM | This paper |
| *Km,Rib* | 0.51 | mM | This paper |
|  | *Km,ADP* | 0.25 | mM | This paper |
|  | *Km,ATP* | 0.24 | mM | This paper |
| FruT | *Vmax* | 69.1 | nmol · min−1 · mg protein−1 | [19] |
|  | *Km,Fru* | 3.91 | mM | [19] |
|  | α | 0.75 | dimensionless | *m* |
| HXK(Fru) | *Vmax,c* | 1775 | nmol · min−1 · mg protein−1 | *n* |
|  | *Vmax,g* | 154 | nmol · min−1 · mg protein−1 | *n* |
|  | *Keq* | 631 | dimensionless | [20] |
|  | *Km,Fru* | 0.35 | mM | [21] |
|  | *Km,Fru-6-P* | 12 | mM | *n* |
|  | *Km,ATP* | 0.116 | mM | *n* |
|  | *Km,ADP* | 0.126 | mM | *n* |
|  | *Ki,Glc* | 0.1 | mM | *o* |
|  | *Ki,Glc-6-P* | 12 | mM | *o* |
| HXK(Glc) | *Ki,Fru* | 0.35 | mM | *o* |
|  | *Ki,Fru-6-P* | 12 | mM | *o* |

*a:* Corrected to pH 7 and/or 25 ºC*.*

*b:* Parameter derived from human red blood cells. *Km* values for Glc-6-P and NADP+ are in the same range for *T. brucei* and RBCs. Calculations can be found on SilicoTryp wiki (http://silicotryp.ibls.gla.ac.uk/wiki/).

*c:* Parameter derived from *Trypanosoma cruzi*.

*d:* No value available. The affinity is assumed to be similar for the substrate and the product.

*e:* No reliable localization data available, assumed to be distributed equally in glycosome and cytosol.

*f:* Corrected from activity per number of cells to activity per mg cell protein by using 1.94 · 108 cells · mg cell protein−1, as used by [22].

*g:* Calculated from redox potential of trypanothione.

*h:* Ratio of *Km* values of reduced and oxidized trypanothione are assumed to be similar to the ratio of *Km* values of reduced and oxidized glutathione for glutathione reductase.

*i:* Fitted to result in a total PPP flux of 1.2 nmol · min−1 · mg protein−1, which is the average PPP flux in *T. cruzi* and *L. mexicana* without induced oxidative stress [23,24]. The PPP flux is assumed to be distributed equally between cytosol and glycosome when no additional oxidative stress is present (*kTOX* = 0).

*j:* The average of the two types of acid phosphatases in *T. rhodesiense* were used as a first estimate.

*k:* The hypothetical ATP:ADP antiporter was given arbitrary kinetic constants. The *Keq* of 1 reflects the assumption of facilitated transport, i.e. not driven by an external source of Gibbs free energy.

*l:* Attempts to measure the intracellular ribokinase activity in cellular lysates were unsuccessful, as other enzymes present in the cell extracts confounded the results. The ribokinase *Vmax*-value was therefore sampled from a wide range.

*m:* No value available, assumed to be similar to glucose transporter.

*n:* No value measured for fructose (6-phosphate). Assumed to be similar to the value for glucose (6-phosphate).

*o:* Competitive inhibitor, Ki is identical to Km.

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