

Table S1. Strains, plasmids, and primers used in amplification of the individual *g6pd* and *6pgl* regions of the fused *g6pd::6pgl* gene from *Giardia lamblia*.

Bacterial strains	
Strain	Characteristics
Top10F'	<i>Escherichia coli</i> competent cells.
BL21(DE3) Δ <i>zwf::kan^r</i>	<i>Escherichia coli</i> BL21(DE3) Δ <i>zwf::kan^r</i> cells with knout of the endogenous <i>zwf</i> gene.
Plasmids	
Plasmid	Characteristics
pJET1.2/blunt- <i>g6pd</i>	pJET1.2/Blunt containing the <i>g6pd</i> region of fused <i>g6pd::6pgl</i> gene from <i>Giardia lamblia</i> with ampicillin resistance.
pJET1.2/blunt- <i>6pgl</i>	pJET1.2/Blunt containing the <i>6pgl</i> region of fused <i>g6pd::6pgl</i> gene from <i>Giardia lamblia</i> with ampicillin resistance.
pET3a-HisTEVP/ <i>g6pd::6pgl</i>	pET3a-HisTEVP containing the fused <i>g6pd::6pgl</i> gene from <i>Giardia lamblia</i> encoding the fused G6PD::6PGL protein. Plasmid with ampicillin resistance.
pET3a-HisTEVP- <i>g6pd</i>	pET3a-HisTEVP containing the <i>g6pd</i> region of fused <i>g6pd::6pgl</i> gene from <i>Giardia lamblia</i> encoding the individual G6PD protein. Plasmid with ampicillin resistance.
pET3a-HisTEVP- <i>6pgl</i>	pET3a-HisTEVP containing the <i>6pgl</i> region of fused <i>g6pd::6pgl</i> gene from <i>Giardia lamblia</i> encoding the individual 6PGL protein. Plasmid with ampicillin resistance.
Oligonucleotides	
Cloning oligonucleotides	Sequence
<i>g6pd</i> Fw	5'-GCGTCATATGTTCAAGCCTTCCTGC-3'
<i>g6pd</i> Rv	5'-CTGGGGATCCTTAATTGAACACTGG-3'
<i>6pgl</i> Fw	5'-GCCGGGATCCTTAGTATATGATGGGCTT-3'
<i>6pgl</i> Rev	5'-GCGCCATATGAATAATAGCTTTGACATA-3'

Table S2. Purification of fused G6PD::6PGL protein.

Step	Total protein (mg)	Specific activity ($\mu\text{mol}\cdot\text{min}^{-1}\cdot\text{mg}^{-1}$)	Total activity (IU)	Yield (%)
Crude extract	1638.0	0.00071	1.170	100.0
Q-Sepharose	386.4	0.00072	0.279	23.9
2'5 ADP-Sepharose	0.87	0.1217	0.010	0.9

Table S3. Purification of the individual G6PD protein.

Step	Total protein (mg)	Specific activity ($\mu\text{mol}\cdot\text{min}^{-1}\cdot\text{mg}^{-1}$)	Total activity (IU)	Yield (%)
Crude extract	432.6	0.68	297.38	100
Ni-Sepharose	2.8	11.51	32.22	11

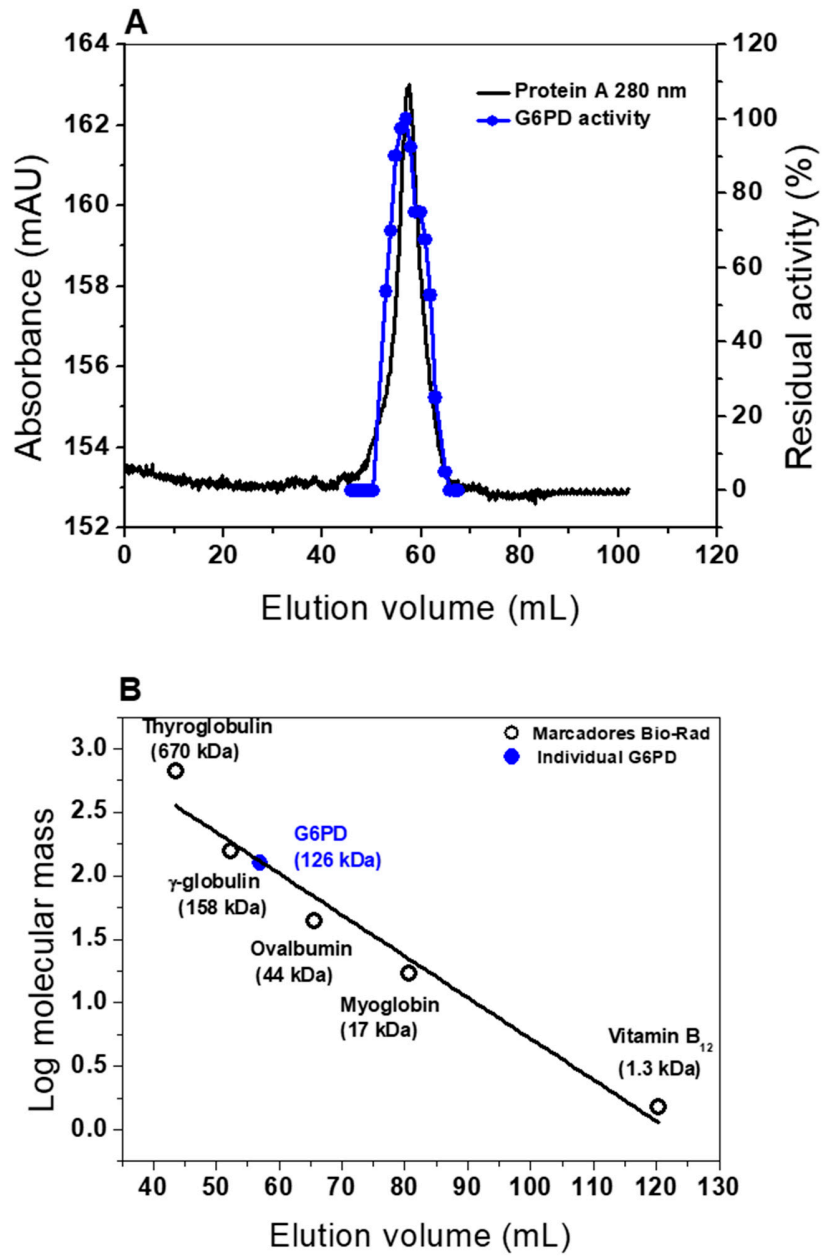


Figure S1. Native status of the individual G6PD protein (A). Size exclusion chromatography of individual G6PD protein. Black line indicates the individual G6PD purified protein, and the blue line represents the G6PD activity. (B) Calibration curve showing the elution volumes versus the log of the molecular weight (MW) of the Bio-Rad gel filtration standard (o). MW of the individual G6PD protein (•).