# Supporting Information

## Forsyth et al. 10.1073/pnas.1101315108

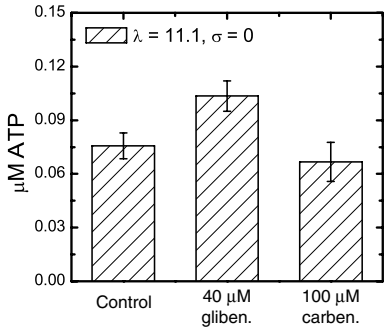


**Fig. S1.** ATP release control values, in an experiment with zero shear, following drug incubation; $\lambda = 11.1$, ATP release (μM), converted from $I_o$ using standard ATP calibration curves, for physiological salt solution controls, 40 μM glibenclamide, and 100 μM carbenoxolone. Error bars $= \pm 1$ SEM; $N = 6$–8.

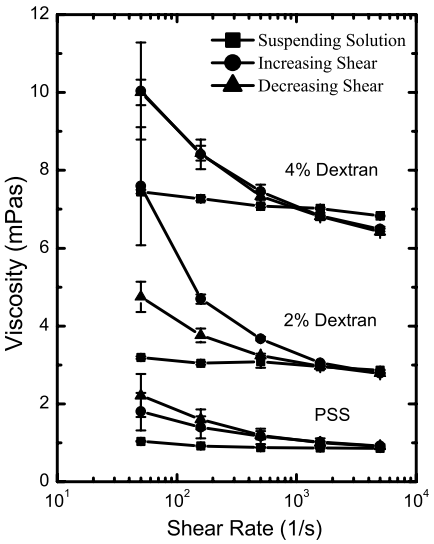


**Fig. S2.** Flow curve hysteresis as a metric for RBC aggregation. Solution viscosity versus shear rate for physiological salt solution ($\lambda = 11.1$), 2 ($\lambda = 3.8$), and 4% dextran ($\lambda = 1.6$) RBC solutions. Each solution has a flow curve for the control viscosity for the suspending media, increasing shear (50 to 50–5,000 $s^{-1}$) of the RBC solution, and decreasing shear (5,000–50 $s^{-1}$) of the RBC solution. Hysteresis is the difference between the increasing and decreasing shear curves, and can be described physically by the breakup of rouleaux which contributes to shear thinning. Error bars $= \pm 1$ SEM; $N = 3$.

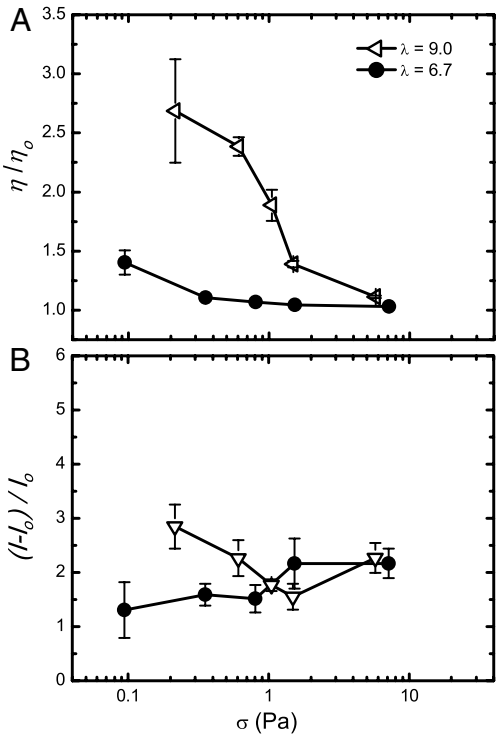


**Fig. S3.** Supporting evidence for the link between viscosity and ATP release. (*A*) The viscosity parameter $\eta/\eta_o$ versus shear stress for RBCs in $\lambda = 9.0$ (5% vol/vol glycerol) and $\lambda = 6.7$ (12.5% wt/vol albumin) solutions. (*B*) Relative ATP release versus shear stress. An increase in ATP release is found when the effective viscosity values approach one. The decreasing ATP release for the glycerol data at lower shear stress is thought to be the result of metabolic activity. Error bars $= \pm 1$ SEM; $N = 3$–6.