Legends for Supplementary Figures

Figure S1: Plot of Peak Parasitemia I_{PK} versus Integrated Parasitemia I_{INT} for certain subsets of simulated infections. (A) All simulated infections for model *P. vivax* parasite (p = 16, $\mathbf{R_0}$ = 15) with severe dyserythropoiesis. (B) All simulated infections for model *P. falciparum* parasite (p = 16, $\mathbf{R_0}$ = 15) with fixed RBC rate of production. (C) All simulated infections for model *P. falciparum* parasite (p = 32, $\mathbf{R_0}$ = 15) with fixed RBC rate of production. (A) All simulated infections for model *P. falciparum* parasite (p = 32, $\mathbf{R_0}$ = 30) with compensatory erythropoiesis.

Figure S2: Plot of RBC Deficit ΔRBC versus Integrated Parasitemia I_{INT} for certain subsets of simulated infections. (A) All simulated infections for model *P. vivax* parasite (p = 16, $\mathbf{R_0}$ = 15) with compensatory erythropoiesis (black points) and moderate dyserythropoiesis (gray points).(B) All simulated infections for model *P. falciparum* parasite (p = 16, $\mathbf{R_0}$ = 15) with fixed RBC rate of production (black points) and moderate dyserythropoiesis (gray points).(C) All simulated infections for model *P. falciparum* parasite (p = 32, $\mathbf{R_0}$ = 15) with fixed RBC rate of production (black points) and with moderate dyserythropoiesis (gray points).(D) All simulated infections for model *P. falciparum* parasite (p = 32, $\mathbf{R_0}$ = 30) with fixed RBC rate of production (black points) and with severe dyserythropoiesis (gray points).

Figure S3: Plots Illustrating the Effects of Differing Paroxysm Response Targets upon the Parasitemia: The illustrated results are from simulated infections with no antibody response and fixed RBC rate of production. The paroxysm response targets either the early trophozoites (black curves) or the late trophozoites-schizonts (gray curves), with $\xi = 1\ \mu l\ hr^{-1}$ and $A_{th} = 5\mu l^{-1}$. T_{INF} is time since primary release. For the model *P. falciparum* p = 32, $\mathbf{R_0}$ = 15, and for *P. vivax,* p = 16, $\mathbf{R_0}$ = 15. For both parasites, the standard deviation of the IBC stage is 4.8 hours. (A) Time series of infected blood cells for the first 32 days since primary release. (B) Plot of time series for the merzoites.for the same time period as (A). For both the *P. vivax* and *P. falciparum* infections, I_{INT} after a full year was $2.84x10^5\ \mu l^{-1}$ and $2.70x10^5\ \mu l^{-1}$ respectively if early trophozoites are targeted by the paroxysm response, and 3.38x104 μl^{-1} and $3.34x10^4\ \mu l^{-1}$.respectively if late trophozoites-schizonts are targeted instead.

Figure S4: Plots Illustrating the Effects of the Erythropoietic Response upon Integrated Parasitemia I_{INT}. (A) Plot of I_{INT} for each simulated infection for model *P. falciparum* parasite (p = 32, $\mathbf{R_0}$ = 15) with fixed RBC rate of production (horizontal axis, "I_{INT} Fx")

versus I_{INT} for the corresponding simulated infection with the moderate dyserythropoiesis (vertical axis, "I_{INT} Dys"). Simulations for which the host died during the one year of simulated infection for either choice of erythropoeitic response are not included. (B) Same as for (A), except the vertical coordinates are I_{INT} values for simulations with compensatory erythropoiesis ("I_{INT} Comp"). (C) Same as for (A), except the vertical coordinates are I_{INT} values for simulations with severe dyserythropoiesis ("I_{INT} Dys"). (D) Plot of I_{INT} for each simulated infection for model *P. falciparum* parasite (p = 32, $\mathbf{R_0}$ = 30) with fixed RBC rate of production (horizontal axis) versus I_{INT} for the corresponding simulated infection with the severe dyserythropoiesis (vertical axis, "I_{INT} Dys"). As for (A), (B), and (C), simulations for which the host died during the one year of simulated infection for either choice of erythropoeitic response are not included

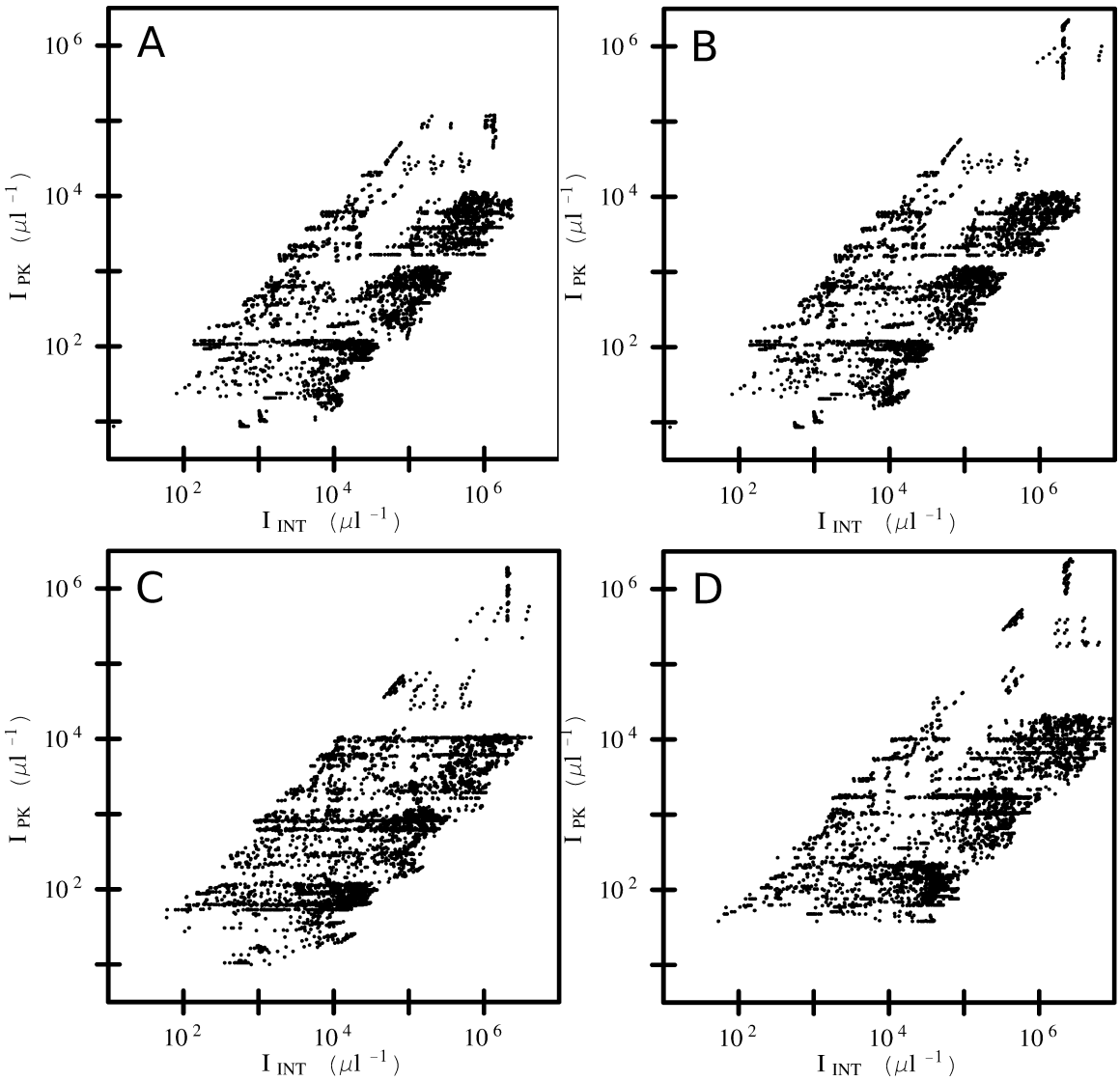

Figure S1

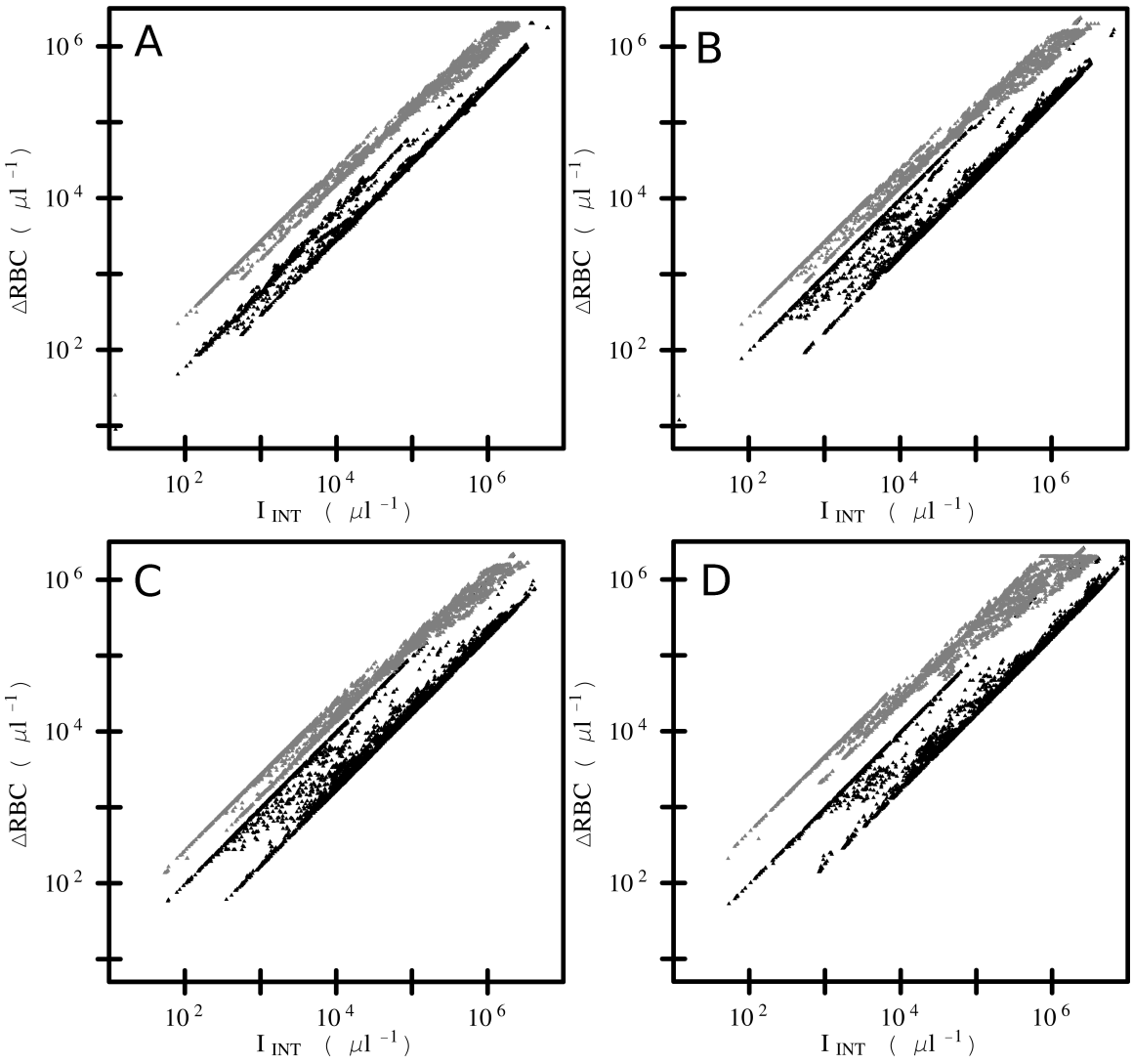

Figure S2

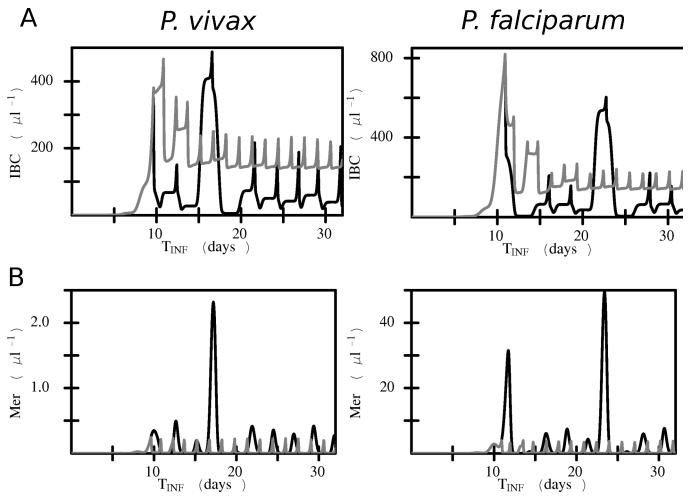
A
P. vivax
P. falciparum
IBC (μl⁻¹)
400
200
800
400
10
20
30
T_INF (days)
B
Mer (μl⁻¹)
2.0
1.0
40
20

Figure S3

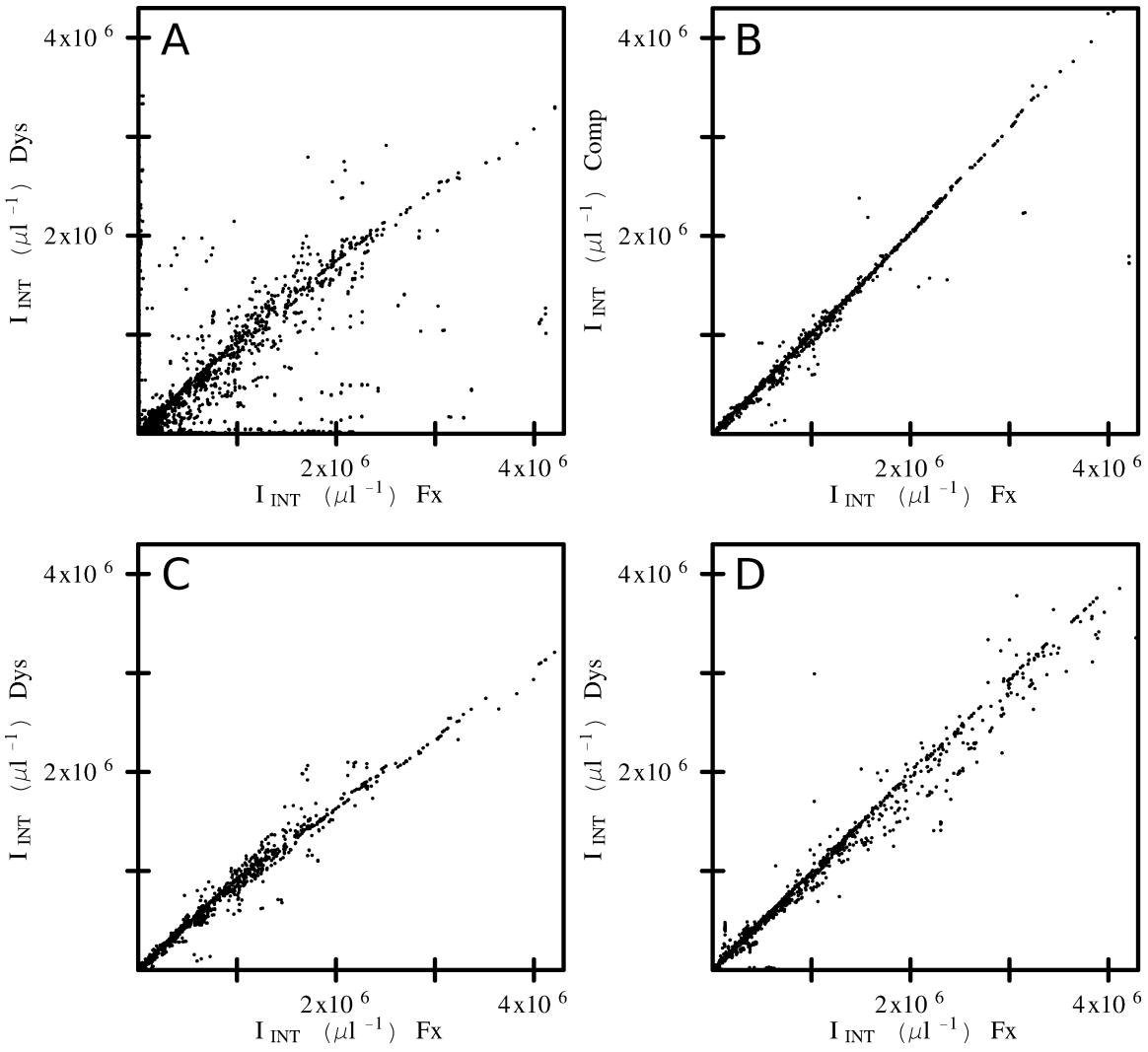

Figure S4