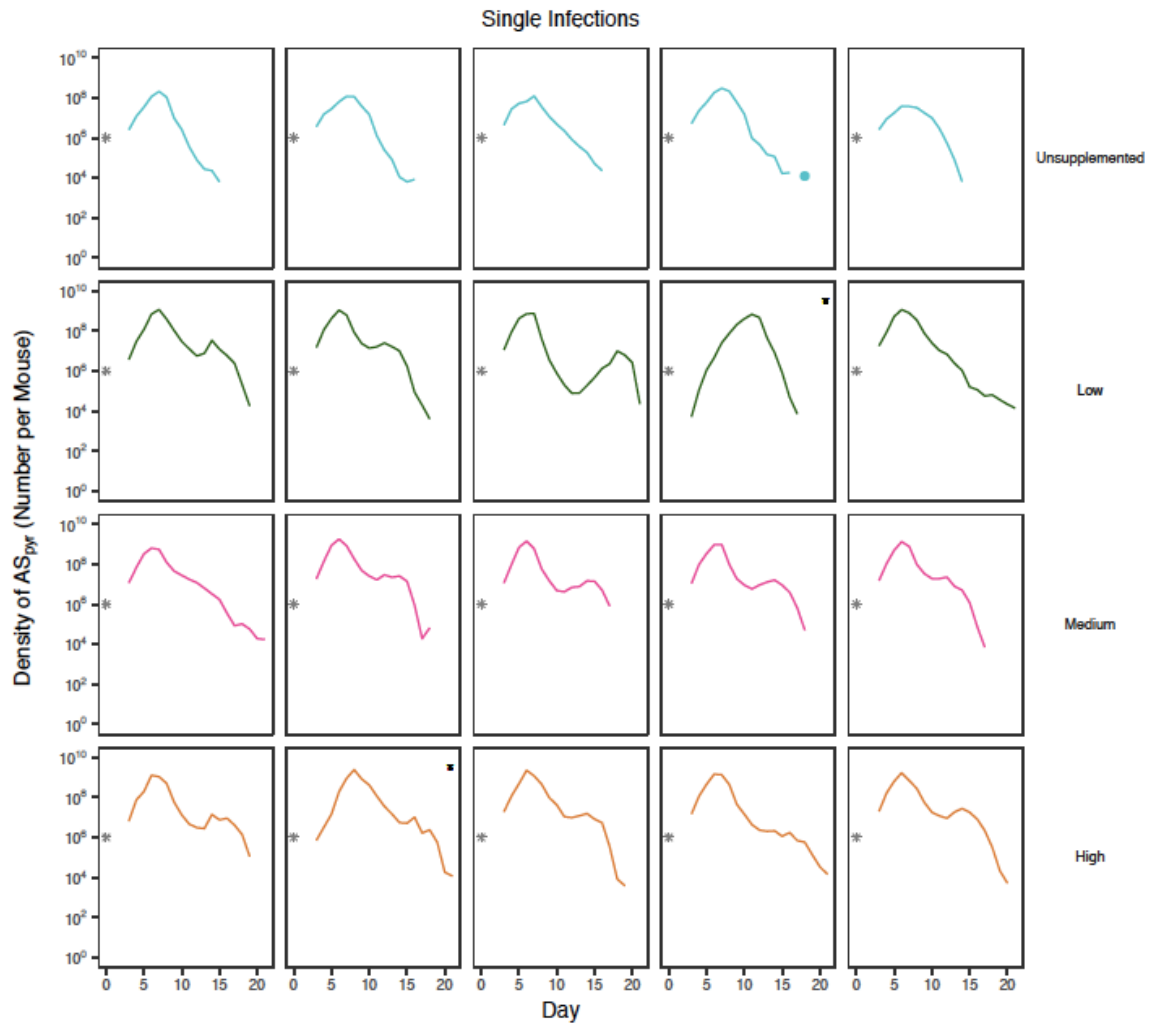
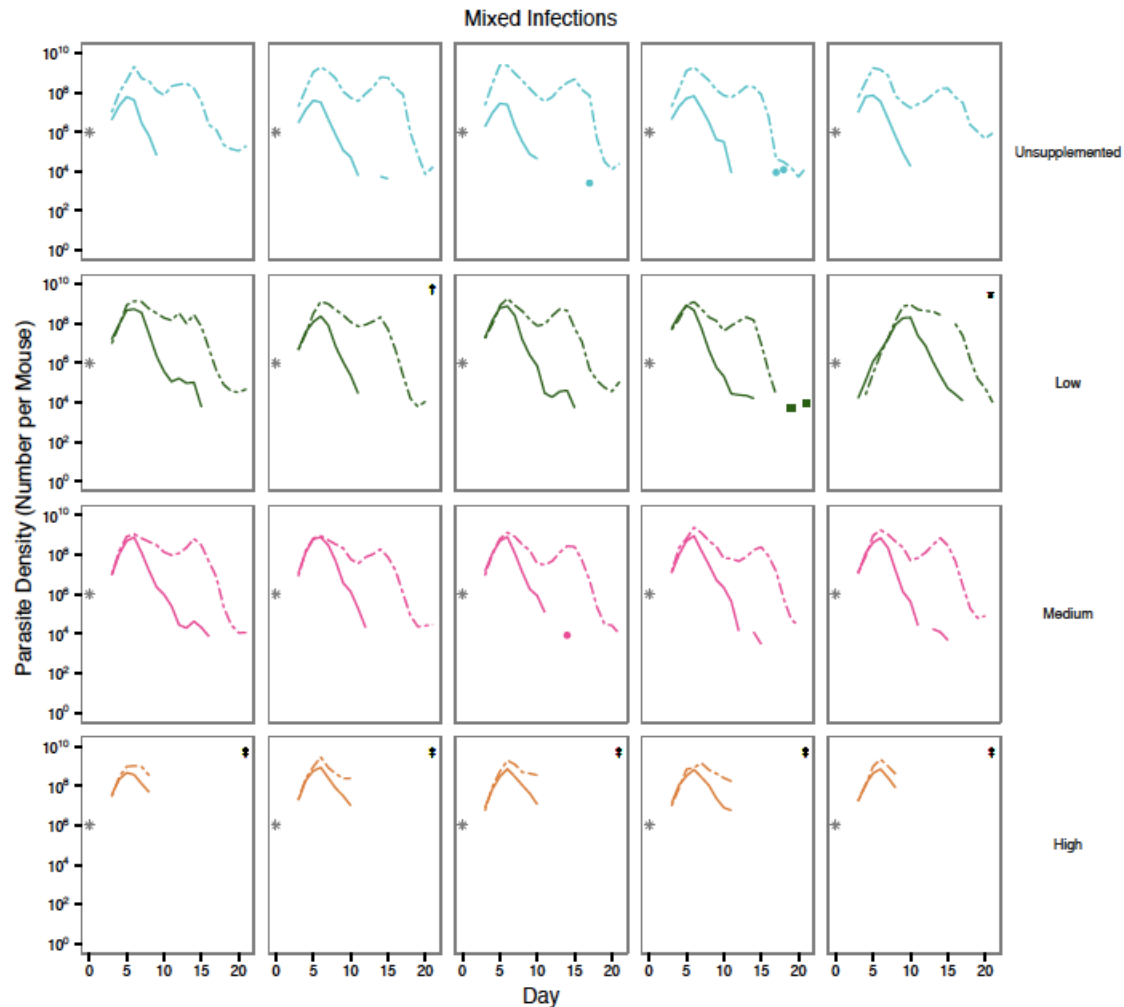


**Supplementary Material for Wale, N., Sim, D., & Read, A.F. (2017). A nutrient mediates intraspecific competition between rodent malaria parasites in vivo. Proceedings of the Royal Society of London Series B 284: 20171067.**

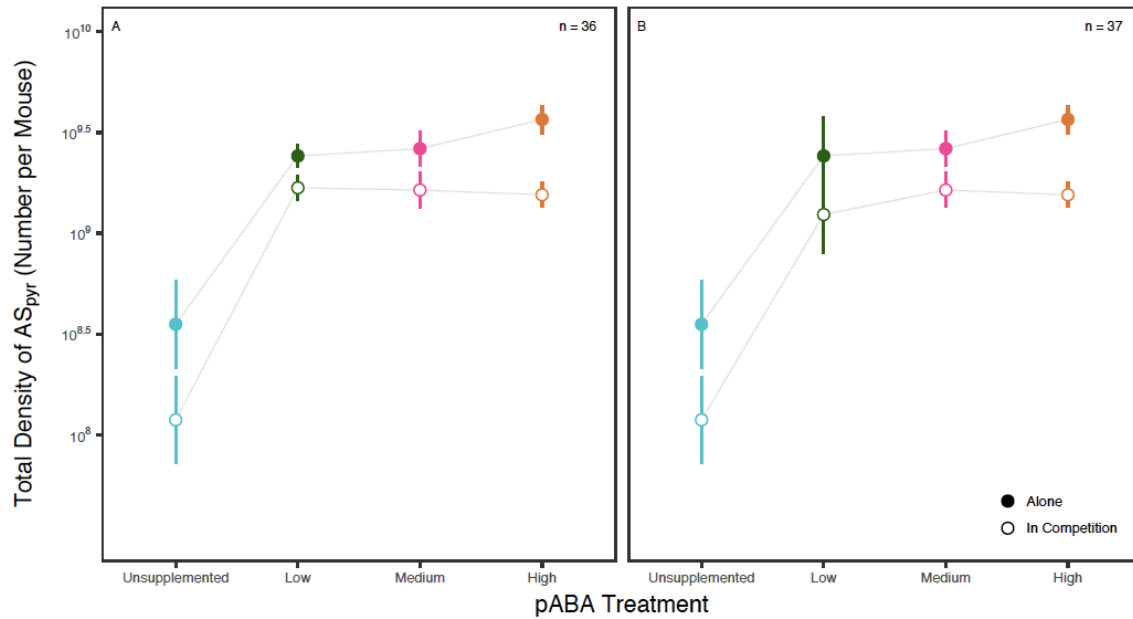
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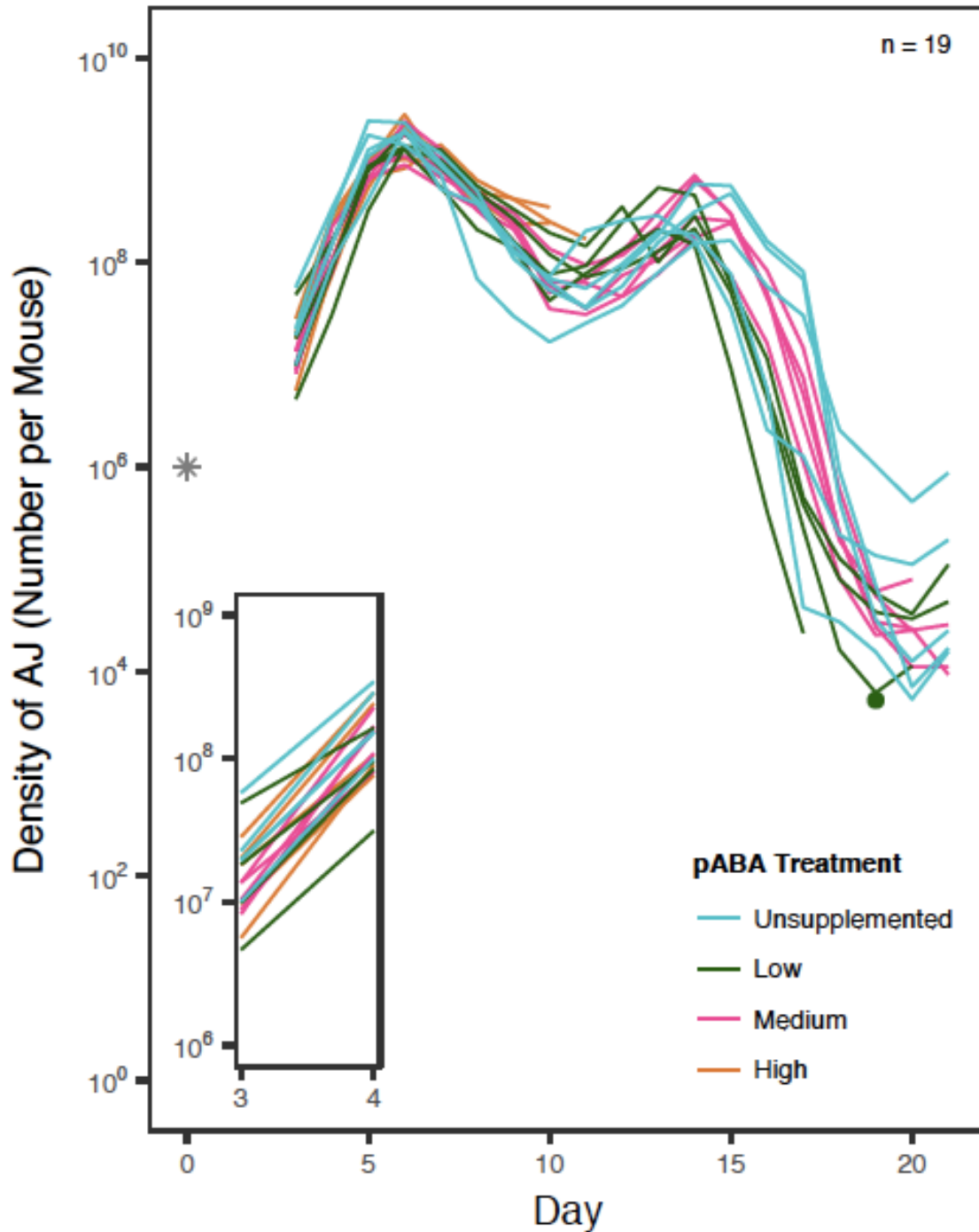
**Figure S1: Dynamics of single infections in individual mice** - Dynamics of AS<sub>pyr</sub> in mice given unsupplemented water (blue lines) or low (green lines), medium (pink lines) and high (orange lines) concentrations of pABA. Stars represent the number of parasites inoculated and the time at which they were administered; the dot the density of parasites detected in an instance when parasites were not detected the day before or after. A black asterisk indicates that the mouse was inoculated with less parasites than was intended and was excluded from all analyses.



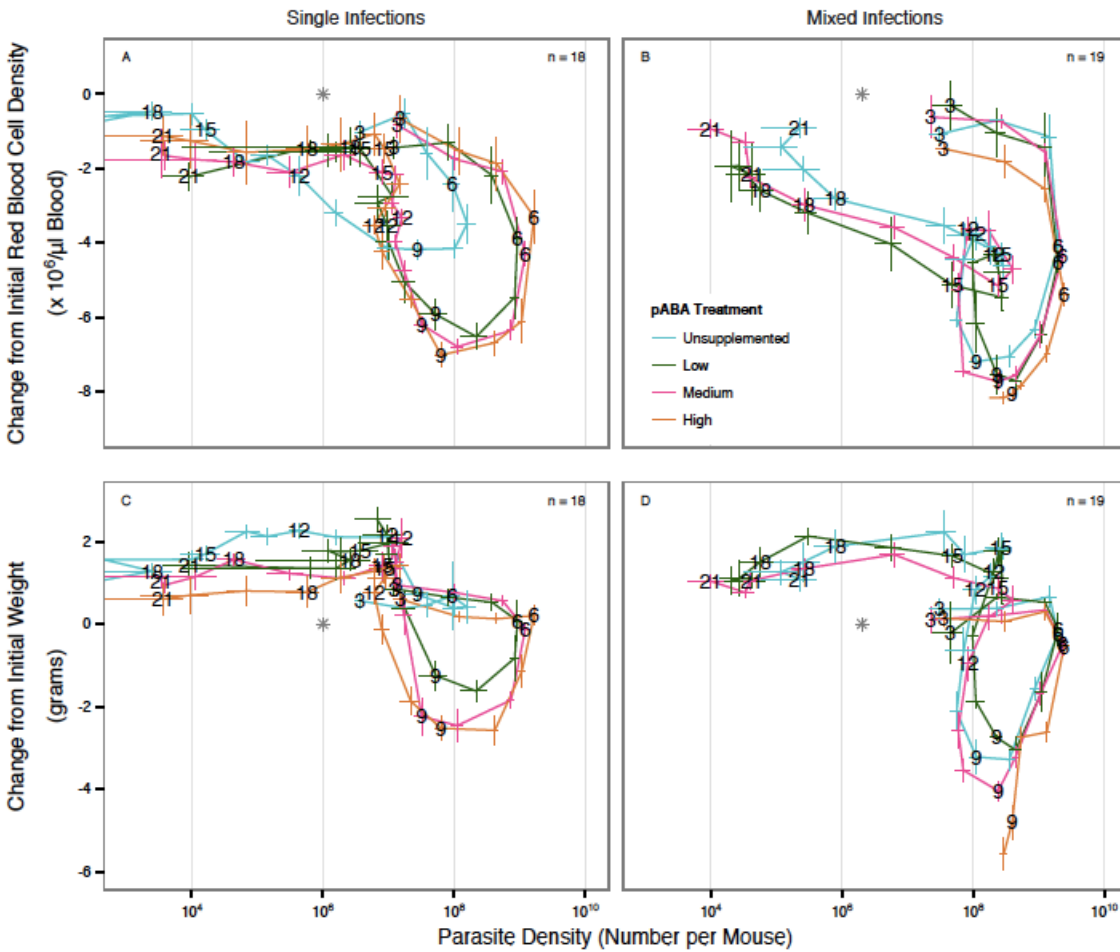
**Figure S2: Dynamics of mixed infections in individual mice** - Dynamics of ASpyr (solid lines) and AJ (dashed lines) in mixed infections of mice given unsplemented water (blue lines) or low (green lines), medium (pink lines) and high (orange lines) concentrations of pABA, as drinking water. Stars represent the number of parasites of each strain that were inoculated and the time at which they were administered. Dots and squares represent the density of ASpyr and AJ parasites, respectively, detected on a particular day, in instances where parasites were not detected the day before or after. A black asterisk indicates that the mouse was inoculated with less parasites than was intended and was excluded from all analyses. A double dagger indicates that the mice died during the experiment. A cross indicates that the mice had a strong impact on the significance of the effect of pABA on the intensity of competition, as measured by the change total infection size in mixed vs. single infections (see Fig. S3).



**Figure S3: The impact of pABA treatment on infection size in single and mixed infections** - Total density of *ASpyr* during the first eight days of infection, when all mice were alive, in single (filled circles) and mixed (open circles) infections. Plotted are the means and 95% confidence intervals estimated from an analysis of the data with one mouse in the low pABA treatment, which received fewer parasites than was intended (Fig. S2, cross) excluded (A) and included (B), using a model with pABA, competition and their interaction included as terms.



[Figure S4: In mixed infections, pABA treatment has a minimal impact on the growth of AJ](#) - Dynamics of AJ in mixed infections in unsupplemented (blue), low (green), medium (pink) and high (orange) pABA treatments. Each line represents the dynamics of infection in a single mouse. n specifies the number of mice plotted and included in the analysis. The star represents the number of parasites that were inoculated and the time at which they were administered.



**Figure S5: The impact of pABA supplementation on the relationship between pathogen burden & disease in single and mixed infections** - The relationship between parasite density and red blood cell density (A, B) and parasite density and weight (C, D) through time in mice infected with ASpyr alone (A, C) or with both ASpyr and AJ (B, D) and given unsupplemented (blue) water or supplemented with a low (green), medium (pink) and high (orange) concentration of pABA. Means and standard errors on each day, in each treatment, are connected by straight lines to form the trajectory. Numbers indicate the day of infection. Stars represent where in parasite-health space mice were on day 0. Parasite density is the sum of all parasites, irrespective of strain. n specifies the number of mice plotted.