## **Supporting Information**



**Figure S1.** Parasite dynamics of individual mice in untreated infections with clone R alone (top row), or mixed clone infections of clone R + AJ (second row), clone R + AT (third row), clone R + CB (fourth row), clone R + AJ + AT (fifth row), clone R + AJ + CB (sixth row), clone R + AT + CB (seventh row) and clone R + AJ + AT + CB (bottom row). Parasite densities for clone R are shown in solid red, for clone AJ in solid black, for clone AT in dashed blue and for clone CB in dotted green. Single- and double-clone infections started out with 5 mice, three-clone infections started with 7 mice and four-clone infections with 9 mice; only surviving mice are shown (Table 1).



**Figure S2.** Parasite dynamics of individual mice in drug-treated infections with clone R alone (top row), or mixed clone infections of clone R + AJ (second row), clone R + AT (third row), clone R + CB (fourth row), clone R + AJ + AT (fifth row), clone R + AJ + CB (sixth row), clone R + AT + CB (seventh row) and clone R + AJ + AT + CB (bottom row). Parasite densities for clone R are shown in solid red, for clone AJ in solid black, for clone AT in dashed blue and for clone CB in dotted green. Drug treatment was given on days 6-9 post-infection, as indicated by the shaded area. Each treatment group consisted of 5 mice (Table 1).



**Figure S3.** Geometric mean daily parasite density of clone R in drug treated (solid black line) and untreated (dashed red line) infections, when competing with one other clone (AJ, AT, or CB, upper graph), or two other clones (AJ and AT, AJ and CB, or AT and CB; lower graph). Data are means (± standard error) of up to six mice. The untreated mixed infection with CB only consisted of only two surviving mice.



## Asexual densities - untreated

**Figure S4.** Selection dynamics on the asexual parasite density of clone R for each mouse in all untreated mixed infections (plot titles). Lines are the mean selection dynamics with blue segments denoting times when selection is not statistically different from zero, red segments times when selection is statistically less than zero (i.e. being selected against), and green segments times when selection is greater than zero (i.e. being up-selected). Selection could be calculated up to the last day that both clone R and at least one of the susceptible clones were above detection threshold, which varied between mice.



## Asexual densities - drug treatment

**Figure S5.** Selection dynamics on the asexual parasite density of clone R for each mouse in all drug treated mixed infections (plot titles). Lines are the mean selection dynamics with blue segments denoting times when selection is not statistically different from zero, red segments times when selection is statistically less than zero (i.e. being selected against), and green segments times when selection is greater than zero (i.e. being up-selected). Selection could be calculated up to the last day that both clone R and at least one of the susceptible clones were above detection threshold, which varied between mice. Drug treatment rapidly eliminated clone CB from the infection; therefore, the selection dynamics for the dual infection of clone R with CB are very short.