

**Fig. S1.** Effect of *dsLacZ* injection on the total number of hemocyte and hemocyte populations of *A*. *gambiae* susceptible G3 mosquitoes (ns = not statistical difference, T-test).



**Fig. S2.** *Cactus* expression levels in mosquitoes that received cells or cell-free hemolymph from *Cactus*-silenced donors, relative to control donors injected with dsLacZ (ns = not statistical difference, T-test).



**Fig. S3.**Tep1 expression in *cactus*-silenced mosquitoes compared to *dsLacZ* controls at 3d postdsRNA injection. Error bars indicate SEM. \*\*, p < 0.01, \*, p < .05



**Fig. S4.** Proportions of granulocyte, oenocytoid and prohemocyte populations in S and R *A. gambiae* during the first 12 days post-emergence.(p>0.05 for all groups, ANOVA).



**Fig. S5.** Effect of *P. berghei* infection on the proportion of oenocytoid and total number of hemocytes during the first 12 days post-infection in the S strain or R strain. Error bars indicate SEM, \*, p<.05



**Fig. S6**. Effect of *P. yoelii* or *P. falciparum* infection on the proportion of oenocytoid during the first 12 days post-infection. Error bars indicate SEM, \*, p<.05



Fig. S7. An. gambiae immune signaling pathways targeted for RNAi-based silencing.