

FIGURE S1. LEfSe conducted based on bacterial community in unfed female ticks.

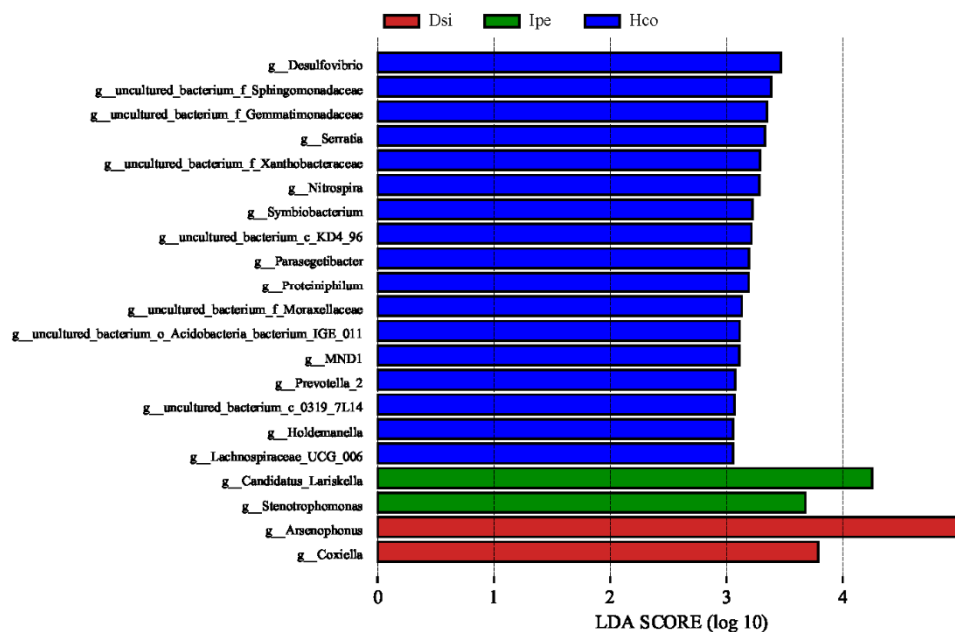


FIGURE S2. LEfSe conducted based on bacterial community in engorged female ticks.

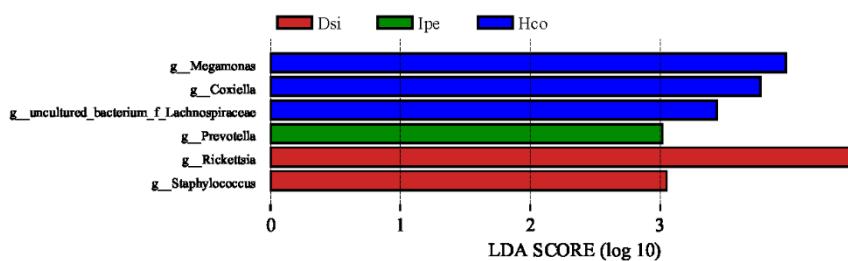
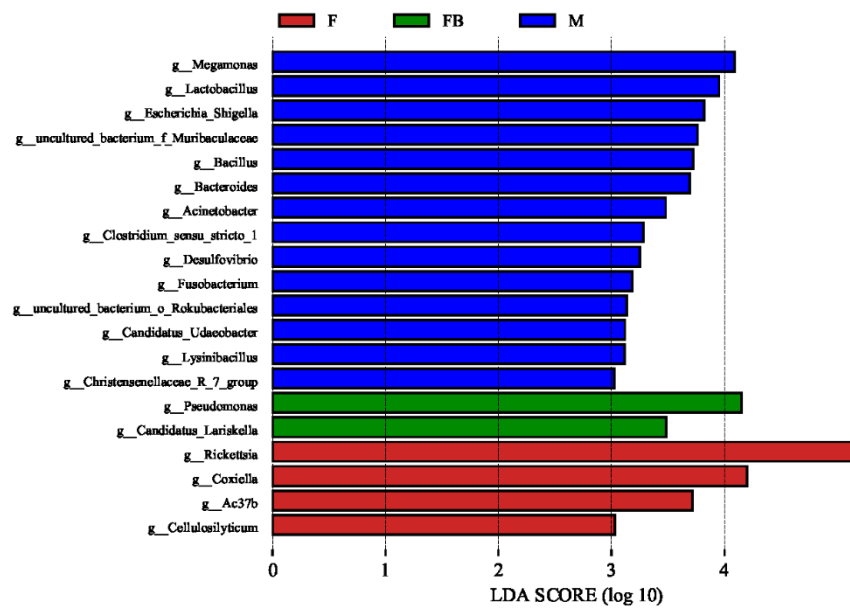


FIGURE S3. LEfSe conducted based on bacterial community in male ticks.





**FIGURE S4.** LEfSe conducted based on bacterial community in *Dermacentor silvarum*.

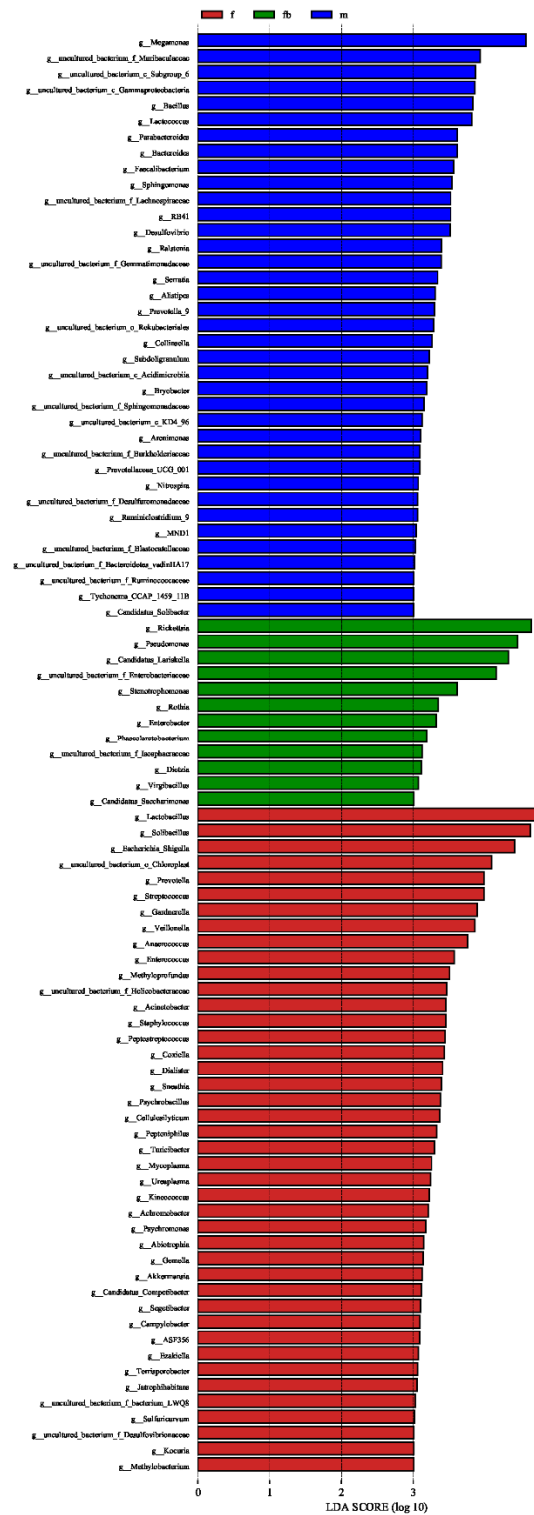
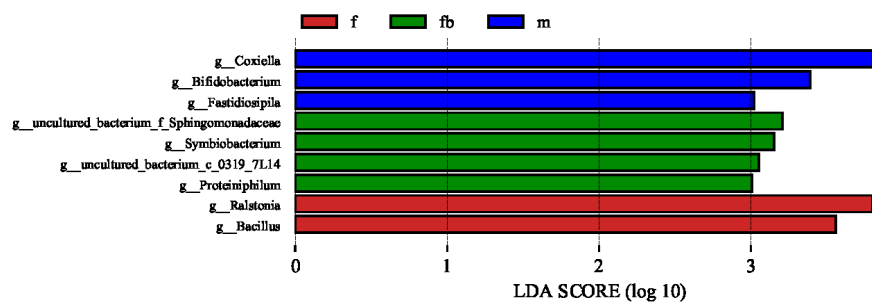


FIGURE S5. LEfSe conducted based on bacterial community in *Ixode persulcatus*



**FIGURE S6.** LEfSe conducted based on bacterial community in *Haemaphysalis concinna*

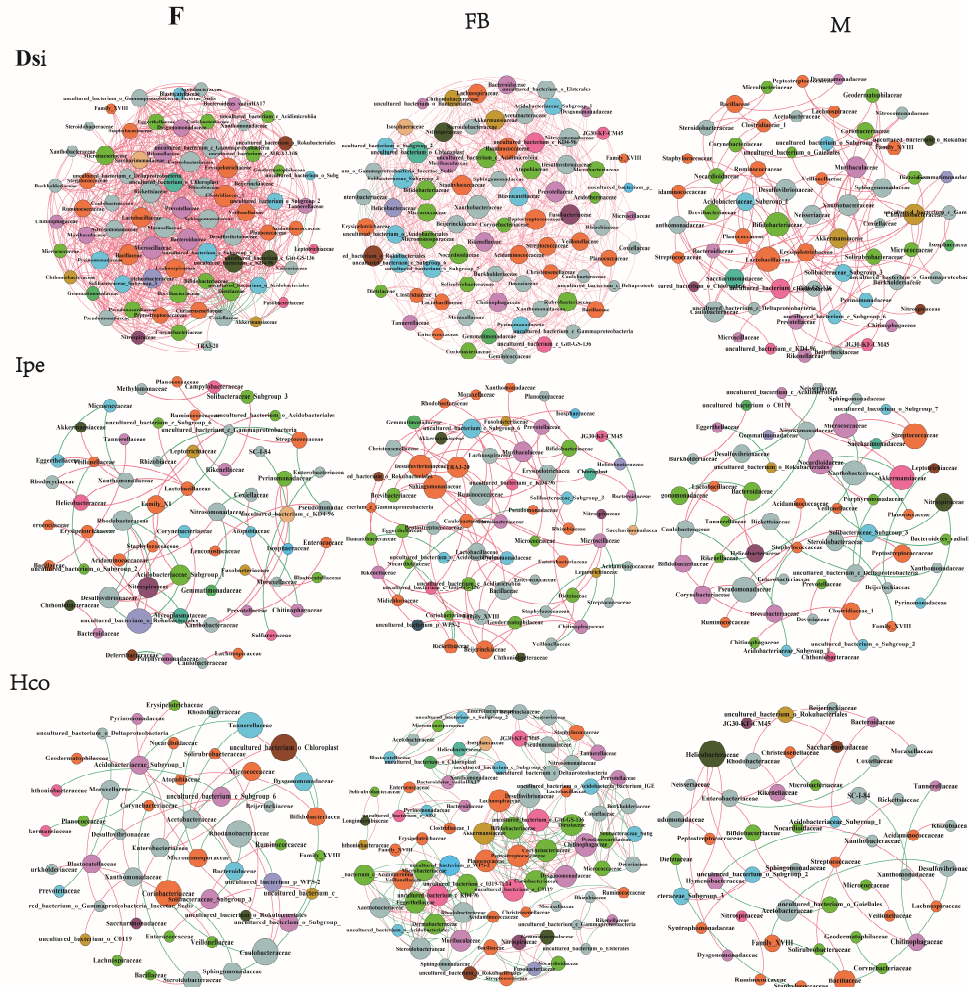
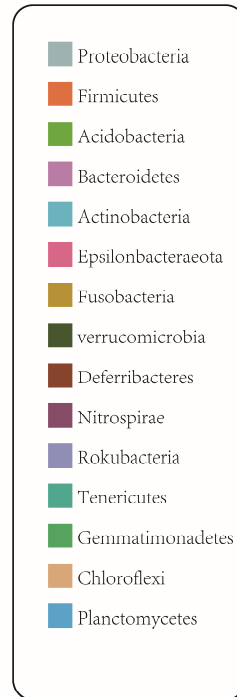


Figure S7. Microbial interaction networks within ticks