Mosquito pericardial cells constitute a cellular defense system against microorganism including malaria parasites.

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Innate immunity is a widespread and important defense against microbial attack in insects. Tissues such as the fat body, gut and hemocytes are recognized as important components of the immune system. The dorsal vessel (DV) plays a role as a vascular pump helping hemolymph circulation. In close contact with the DV, the pericardial cells (PC) performs detoxification of the hemolymph, as well as osmoregulatory functions. Preliminary evidence indicates that pericardial cells could also play an important role in the mosquito immune system. Important markers of the immune response (STAT, *Sp22D*, TEP-I, and SRPN10) has been reported to be presents in mosquito pericardial cells. We are thus interested in understanding the roles of the DV and PC in the mosquito immune response. Using biochemical, cellular, ultrastructural and mass spectrometric approaches, we analyzed the response of *Anopheles albimanus* PC after challenge with *Plasmodium vivax* and other microorganisms. Our observations suggest that the PC play a role in the clearance of invading pathogens.