L-DOPA treatment of adult female *Aedes albopictus* mosquitoes suggests a relationship between blood-feeding activity and dopamine level

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Dopamine (DA) acts as a behavior-modulating neurotransmitter in the insect nervous system. Here, we treated adult female *Aedes albopictus* mosquitoes with L-DOPA to determine whether elevation of the DA level reduces blood-feeding activity. The mosquitoes were separated into two groups, the DA group given a 3% sucrose containing 0.07% L-DOPA and control group that received only 3% sucrose after adult emergence (AAE). The attracting rate (AR; No. of mosquitoes biting anesthetized mice for 30 min/total No.) was measured as blood-feeding activity. This study was performed once a day for 6 days AAE. HPLC was used to measure the DA levels in the heads of 50 adult mosquitoes. The AR showed a gradual increase over the 6-day experimental period in the control group. The DA level of control mosquitoes decreased over this period. In contrast, there was no such increase in AR in the DA group. Therefore, the AR of the DA group was significantly lower than that of the controls between day 3 and day 6 AAE. During the 6-day experimental period AAE, the DA level in L-DOPA-fed mosquitoes remained higher than that in controls. These observations suggest that DA plays a role in modulating blood-feeding activity of *Ae. albopictus*.