THE INFLUENCE OF MIDGUT BACTERIAL MICROBIOTA OF *ANOPHELES AQUASALIS* ON SUSCEPTIBILITY TO *PLASMODIUM VIVAX* – PRELIMINARY DATA

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The intestinal microbiota of mosquitoes is an important factor in vector competence, with microorganisms capable of blocking or enhancing susceptibility to pathogens. The *Anopheles aquasalis* was colonized under laboratory conditions for studies of interaction with the *Plasmodium vivax*, as it has high infection rates, ranging from 45 to 90%. Recent work at the Insectary of the Leônidas and Maria Deane Institute showed a drastic reduction in the infection rate of this mosquito with *P. vivax* (5%), leading the research group to hypothesize that the composition of the bacterial microbiota could be influencing susceptibility. To investigate this influence, 4 groups of adult female mosquitoes were formed, with 3 groups fed for 3 days with a 5% sugar solution + antibiotic (Group 1: Kanamycin + Carbenicillin; Group 2: Carbenicillin; Group 3: Kanamycin), and the fourth group was fed only 10% sucrose (Control). On day 4, all groups were fed with a 10% sugar solution. On the fifth day, the females were fed with blood infected with *P. vivax*, using the artificial membrane feeding system. After seven days of feeding, the midguts of the females were dissected and stained for oocyst counting. Five intestines from each group were placed in 3 ml of TSB broth and cultivated in an incubator at 37°C for 24 h. The grown colonies were plated on different culture for isolation. Preliminary results showed that the females that were fed with Kanamycin and Carbenicillin separately had infection rates of 75% and 80%, respectively; the group treated with the two antibiotics had 10%, and the control group had 5%. These results indicate that bacteria that are part of the colony microbiota and are susceptible to Kanamycin and Carbenicillin may be inhibiting the development of the parasite. Further experiments will allow us to identify the bacteria that influence the infection and that could be targeted for controlling/blocking malaria transmission.

Supported By FIOCRUZ: PROGRAMA INOVA - Chamada Nº04/2022; FAPEAM: Programa de Apoio à Fixação de Jovens Doutores no Brasil - Chamada FAP/CNPq Nº 003/2022; PROEP – ILMD.

Keywords: Malaria, *Anopheles aquasalis*, Intestinal microbiota.