

Mosquito physiology: what are the potential targets to control mosquito and malaria?

Yeon Soo Han

Department of Agricultural Biology, Chonnam National University

Malaria, a mosquito-borne parasitic disease, is a major cause of morbidity and mortality in human populations throughout the world, particularly in tropical and subtropical regions. Mosquitoes play a crucial role in malaria transmission. Approximately 500 species of anopheline mosquitoes have been identified but only about 20 species act as important vectors in malaria transmission. Why only certain species of anopheline mosquitoes are good malaria vectors remains to be answered?

Deciphering the mechanisms underlying vectorial competence depends on understanding both mosquito physiology and behavioral ecology. A prerequisite for the success of malaria control through manipulation of vector competence is the understanding of mosquito-parasite interactions, and identification of target gene(s) or gene products at the vulnerable points of the parasite's life cycle in the mosquito vector. In addition, comparative functional studies with other blood-sucking insects will be useful in designing control strategies of mosquito population and designing vaccine protecting human and animals.