Preface

Encyclopaedia of Insect Molecular Biology and Biochemistry focuses on insect infection and insect immune systems. Under continual attack from both microbial pathogens and multicellular parasites, insects must cope with immune challenges every day of their lives. However, this has not prevented them from becoming the most successful group of animals on the planet. Insects possess highly-developed innate immune systems which have been fine-tuned by an arms race with pathogens spanning hundreds of millions of years of evolutionary history. Recent discoveries are revealing both an unexpected degree of specificity and an indication of immunological memory - the functional hallmark of vertebrate immunity. The study of insect immune systems has accelerated rapidly in recent years and is now becoming an important interdisciplinary field. The book "Insect Infection and Immunity" contains ten chapters. An annotation tool for identifying immune genes in insect genomes has been discussed in first chapter. We review the current evidence for behavioral immunity in insects, present a framework for investigating such behavior, and emphasize that behavioral immunity in second chapter. The purpose of third chapter is to determine insecticide resistance in bed bug eggs and first instars. The viral counter defense x antiviral immunity in plants has been focused in fourth chapter. The chemical cues for malaria vectors oviposition site selection have been discussed in fifth chapter. We summarize the current state of comparative and evolutionary genomics of insect innate immune defense in sixth chapter. The objective of seventh chapter is to report all identified insect vectors and give some information about their biology. In eighth chapter, we discuss the influences of plant traits on immune responses of specialist and generalist herbivores. We develop a dedicated analysis tool based on open access libraries in ninth chapter that we facilitate the use of the faecal analysis technique for the Drosophila community. The synthesis, depletion and cell-type expression of a protein from the male accessory glands of the dengue vector mosquito aedes aegypti have been described in last chapter.