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Small and large animal models for melioidosis and glanders

There are many new and emerging diseases that are yet to be understood in regards to host-pathogen interactions, which makes effective treatment against these diseases still far in the future. Two emerging diseases that fall into this category are caused by *Burkholderia pseudomallei* and *B. mallei*, which are responsible for the diseases melioidosis and glanders, respectively. Although these two organisms are closely related, they exhibit differences in inducing the host innate immune response and interaction with specific hosts. For the past few years, we have been assessing different small and large animals to establish a model for melioidosis and glanders that would be suitable for evaluating candidate vaccines and therapeutic countermeasures against these two diseases. We have been examining the more sensitive BALB/c mouse and more resistant C57BL/6 mouse to their susceptibility to be infected by different strains of the pathogens. In addition, we have also been evaluating several species of nonhuman primates that could potentially serve as large animal models for melioidosis and glanders. We will discuss the possible benefits of selecting the small and large animal models for these two emerging diseases for evaluating future candidate vaccines and therapeutic countermeasures.

Biography

Kei Amemiya is a Principal Investigator in the Bacteriology Division at the US Army Medical Research Institute of Infectious Diseases. He has been at USAMRIID since 1999 and has been involved in developing vaccine candidates against plague, glanders and melioidosis. His interest is in studying the host's immune response to the pathogen and vaccines in small and large animal models. Before coming to USAMRIID, he was at the National Institutes of Health and Georgetown University, where he was studying the host response to bacterial and viral pathogens or autoimmune diseases in humans.

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