ABSTRACT

Invertebrates like Drosophila possessing simpler body organisation can elucidate a complex immune response. This response can be pathogen-specific and can be mediated through different routes such as humoral immunity and cellular immunity. Cellular immunity components are constitutively expressed which mainly function in encapsulation and phagocytosis of pathogens. However, humoral immune components are specifically induced in response to specific pathogenic molecule. This study uses populations of Drosophila melanogaster selected against a gram negative bacteria Pseudomonas entomophila. Having found no differences in the humoral immunity genes, this study addresses the possibility of evolution of other components of innate immunity. We tested this hypothesis by assaying the activity of crystal cells by monitoring wound healing response. Our results suggest that selected populations have not evolved for wound healing. Therefore, the involvement of other immunity components can explain the increased survivorship in selected populations. This was studied by looking at the differential expression of the genes using RT-PCR.