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Nutraceuticals based treatment of *Vibrio anguillarum* infection in *Macrobrachium rosenbergii*

John Thomas, Natrajan Chandrasekaran, Amitava Mukherjee and Thanigaivel S
VIT University, India

Vibrio species are the most prevalent pathogens in the aquatic ecosystem. It causes huge mortality. *V. anguillarum* and *V. vulnificus*, both exhibit extensive virulence in marine vertebrates and invertebrates. *Vibrios* remain prominently opportunistic but none the less they are largely primary and secondary pathogenic invaders of shrimps present in farms across the globe. This study aims at identifying the pathogenicity of *V. anguillarum* species in *Macrobrachium rosenbergii* and developing an effective treatment against the infection. The pathogenicity of *M. rosenbergii* to *V. anguillarum* was confirmed by intramuscular injection. The clinical symptoms such as lethargy, reddish and green coloration on the body surface were observed. The highest concentration of *V. angularum* caused 100% mortality within 98 hours of post inoculation when injected intramuscularly. However, the lower concentrations of *V. angularum* caused 45% and 40% mortality, after 120 and 96 hours of post injection respectively. The LD₅₀ value of *V. angularum* for intramuscular route was found to be 2.4×10^{-4} at 120 hours of post injection. The present study revealed that 25 μ l of ethanolic extract of *Ocimum tenuiflorum* was effective in treating the infection. This can be incorporated in to the feed and can be used for treating the infection as an alternative to antibiotics. Resistance to the antimicrobial agents used in aquaculture has increased in many countries in recent years. Medicinal plants are potential and promising sources of pharmaceutical agents against pathogens in aquaculture.

Biography

John Thomas has completed his PhD from Thiruvalluvar University, Tamil Nadu, India. He was awarded as the Young Scientist Award by the Department of Science and Technology, Government of India. Currently, he is working as an Assistant Professor in Centre for Nanobiotechnology, VIT University, India. He has published more than 25 papers in peer reviewed international journals and also has 2 patents to his credit and two book chapters.

john.thomas@vit.ac.in

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