# White shrimp *Litopenaeus vannamei* following long-term culture at pH 6.8 shows reduction in activation and innate immunity

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## Abstract

The activation of immunity and innate immune parameters were examined in white shrimp *Litopenaeus vannamei* following long-term culture at pH 6.8 and 8.1. Results of shrimp haemocytes incubated with either lipopolysaccharide or β-1,3-glucan showed that phenoloxidase activity and respiratory bursts were significantly lower in the haemocytes of shrimp reared at pH 6.8 than in the haemocytes of shrimp reared at pH 8,1. The immune parameters of pH 6.8 shrimp were significantly lower than in pH 8.1 shrimp. In another experiment, shrimp following long-term culture at pH 6.8 and pH 8.1 were challenged with *Vibrio alginolyticus.* The resistance, phagocytosis, and clearance to *V. alginolyticus* were significantly lower in pH 6.8 shrimp. It is concluded that shrimp following long-term culture at low pH showed reductions of immunity and immune parameters, and decreased resistance against *V. alginolyticus*.

KEYWORDS:

*Litopenaeus vannamei*; Low pH; Activation of immunity; Immune parameter; Phagocytosis; *Vibrio alginolyticus*

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