

Expression of an NFκB homologue in cultured haemocytes from the South African abalone *Haliotis midae*

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Haliotis midae is an important marine gastropod that is commercially farmed in South Africa. Mass mortalities and loss of production due to infectious diseases are a constant threat to abalone farmers. Consequently, a monitoring system for assessing the health status of farmed abalone is vital for effective disease mitigation. This study investigated whether nuclear factor κB (NFκB), a potential biomarker of bacterial infection of abalone, is differentially expressed in primary cultured *H. midae* haemocytes exposed to a heat killed bacterium.

NFκB is a transcription factor that participates in processes such as cell proliferation, apoptosis and the immune response. In invertebrate innate immunity, NFκB homologues regulate the activation of anti-microbial peptides in response to Gram-negative and Gram-positive bacterial, fungal and yeast infections. Two amplified fragments of an NFκB homologue were identified in *H. midae* and found to be closely related to the *Haliotis diversicolor supertexta* NFκB homologue. An *in vitro* 'challenge' experiment was performed to assess the response of haemocytes to heat killed FITC labelled *Vibrio anguillarum* 5676. In comparison to a control haemocyte group, phagocytic activity of the *V. anguillarum* treated haemocytes increased significantly from 2 hpi, while NFκB mRNA levels were significantly up-regulated at 6 hpi.

It was concluded that cultured haemocytes will be a useful tool for studying aspects of the *H. midae* immune response and that NFκB has potential as a biomarker of infection in farmed *H. midae*.