## **Accepted Manuscript**

Enhancement of immune response and resistance against *Vibrio parahaemolyticus* in kuruma shrimp (*Marsupenaeus japonicus*) by dietary supplementation of  $\beta$ -1,4-mannobiose

Gehad E. Elshopakey, Engy F. Risha, Osama A. Abdalla, Yo Okamura, Vu Duc Hanh, Masahisa Ibuki, Raja Sudhakaran, Toshiaki Itami

PII: \$1050-4648(17)30777-5

DOI: 10.1016/j.fsi.2017.12.036

Reference: YFSIM 5021

To appear in: Fish and Shellfish Immunology

Received Date: 15 September 2017
Revised Date: 10 December 2017
Accepted Date: 21 December 2017

Please cite this article as: Elshopakey GE, Risha EF, Abdalla OA, Okamura Y, Hanh VD, Ibuki M, Sudhakaran R, Itami T, Enhancement of immune response and resistance against *Vibrio parahaemolyticus* in kuruma shrimp (*Marsupenaeus japonicus*) by dietary supplementation of β-1,4-mannobiose, *Fish and Shellfish Immunology* (2018), doi: 10.1016/j.fsi.2017.12.036.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## ACCEPTED MANUSCRIPT

1	Enhancement of Immune Response and Resistance against Vibrio
2	parahaemolyticus in Kuruma Shrimp (Marsupenaeus japonicus) by Dietary
3	Supplementation of β-1,4-Mannobiose
4	Gehad E. Elshopakey <sup>1,2</sup> , Engy F. Risha <sup>2</sup> , Osama A. Abdalla <sup>3</sup> , Yo Okamura <sup>1</sup> , Vu Duc Hanh <sup>4</sup> ,
5	Masahisa Ibuki <sup>5</sup> , Raja Sudhakaran <sup>6</sup> and Toshiaki Itami <sup>1</sup> ,*
6 7	<sup>1</sup> Department of Marine Biology and Environmental Science, University of Miyazaki, Miyazaki, Japan.
8 9	<sup>2</sup> Department of Clinical Pathology, Faculty of Veterinary Medicine, Mansoura University, Mansoura, Egypt.
10 11	<sup>3</sup> Department of Clinical Pathology, Faculty of Veterinary Medicine, Suez Canal University, Ismailia, Egypt.
12 13	<sup>4</sup> Faculty of Veterinary Medicine, Vietnam National University of Agriculture, Hanoi, Vietnam.
14	<sup>5</sup> Product manager, Fuji Oil Co., Ltd., Osaka, japan
15 16	<sup>6</sup> Aquaculture Biotechnology Laboratory, School of Bio Sciences and Technology, VIT University, India.
17	Running Title: Protective effect of $\beta$ -1, 4-Mannobiose as a dietary supplementation of shrimp
18 19 20 21 22 23 24	* Corresponding author:  Dr. Toshiaki ITAMI  Department of Marine Biology and Environmental Science, Faculty of Agriculture, University of Miyazaki, Japan.  Tel: +81-985-58-7229; Fax: +81-985-58-2818. E-mail: itamit@cc.miyazaki-u.ac.jp.

## Download English Version:

## https://daneshyari.com/en/article/8498649

Download Persian Version:

https://daneshyari.com/article/8498649

<u>Daneshyari.com</u>