

Accepted Manuscript

Identification and characterization of a B-type mannose-binding lectin from Nile tilapia (*Oreochromis niloticus*) in response to bacterial infection

Xiaoxue Yin, Liangliang Mu, Yuan Li, Liting Wu, Yanjian Yang, Xia Bian, Bingxi Li, Shaoan Liao, Yutao Miao, Jianmin Ye



PII: S1050-4648(18)30616-8

DOI: [10.1016/j.fsi.2018.09.072](https://doi.org/10.1016/j.fsi.2018.09.072)

Reference: YFSIM 5593

To appear in: *Fish and Shellfish Immunology*

Received Date: 14 March 2018

Revised Date: 31 August 2018

Accepted Date: 25 September 2018

Please cite this article as: Yin X, Mu L, Li Y, Wu L, Yang Y, Bian X, Li B, Liao S, Miao Y, Ye J, Identification and characterization of a B-type mannose-binding lectin from Nile tilapia (*Oreochromis niloticus*) in response to bacterial infection, *Fish and Shellfish Immunology* (2018), doi: <https://doi.org/10.1016/j.fsi.2018.09.072>.

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.

Identification and characterization of a B-type mannose-binding lectin from Nile Tilapia (*Oreochromis niloticus*) in response to bacterial infection

ABSTRACT

Lectins are a group of carbohydrate-binding proteins, which play an important role in innate immune system against pathogen infection. In this study, a B-type mannose-binding lectin (OnBML) was identified from Nile tilapia (*Oreochromis niloticus*), and characterized at expression patterns against bacterial infection and capability to promote phagocytosis by macrophages. The open reading frame of *OnBML* is 354 bp of nucleotide sequence encoding polypeptides of 117 amino acids. The deduced protein is highly homologous to other teleost BMLs, containing two repeats of the conserved mannose-binding motif QXDXNXVXY. Expression of *OnBML* was widely exhibited in all examined tissues, with the most abundance in spleen and following gill, peripheral blood, and head kidney. The *OnBML* expressions were significantly up-regulated following two major bacterial infections including a Gram-positive bacterium (*Streptococcus agalactiae*) and a Gram-negative bacterium (*Aeromonas hydrophila*) *in vivo* and *in vitro*. Recombinant OnBML protein possessed capacities of mannose-binding and calcium-dependent agglutination to *S. agalactiae* and *A. hydrophila*, and promoted the phagocytosis by macrophages. Taken together, the present study indicated that OnBML is likely to get involved in host defense against bacterial infection in Nile tilapia.

Download English Version:

<https://daneshyari.com/en/article/11019427>

Download Persian Version:

<https://daneshyari.com/article/11019427>

[Daneshyari.com](https://daneshyari.com)