



A C-type lectin fold gene from Japanese scallop *Mizuhopecten yessoensis*, involved with immunity and metamorphosis

X.B. Bao¹, C.B. He¹, C.D. Fu¹, B. Wang¹, X.M. Zhao², X.G. Gao¹ and W.D. Liu¹

¹Liaoning Key Laboratory of Marine Fishery Molecular Biology, Liaoning Ocean and Fisheries Science Research Institute, Dalian, China

²School of Food Science and Technology, Dalian Polytechnic University, Dalian, China

Corresponding author: W.D. Liu
E-mail: cnliu51@126.com

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ABSTRACT. C-type lectins are a superfamily of Ca²⁺-dependent carbohydrate-recognition proteins that are well known for their participation in pathogen recognition and clearance. In this study, a putative C-type lectin fold (MyCLF) gene was identified from the Japanese scallop *Mizuhopecten yessoensis*. The full-length of MyCLF was 645 bp, encoding a polypeptide of 167 amino acids. MyCLF carried a signal peptide of 20 amino acid residues, and a single carbohydrate recognition domain, having relatively high amino acid sequence conservation with C-type lectins reported for other bivalves. The expression of MyCLF mRNA transcripts in adult tissues, after bacterial challenge and during different developmental stages was determined using real-time quantitative RT-PCR. MyCLF was mainly distributed in the mantle, gill, and kidney. The expression of MyCLF clearly increased 3 h after *Vibrio anguillarum* challenge, and dropped to a minimum level after 9 h compared to the control group. During

embryonic development, the expression level increased in the gastrulae, trochophore and early D-shaped larvae, decreased in D-shaped larvae, and then increased hundreds of times in metamorphosing larvae. The results suggested that MyCLF was involved in an immune response and it may play important roles during the metamorphosis phase of *M. yessoensis*.

Key words: C-type lectin fold; Cloning; Metamorphosis; *Mizuhopecten yessoensis*; mRNA expression