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Tran Vinh Phuong

Tran Vinh Phuong (https://www.worldaquaculturereconference.com/speaker/tran-vinh-phuong)

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Title : Cloning and expression of the LvCTL4 encoding gene c-type lectin from white leg shrimp (Litopenaeus vannamei) (https://www.worldaquaculturereconference.com/program/scientific-program/2023/cloning-and-expression-of-the-lvctl4-

encoding-gene-c-type-lectin-from-white-leg-shrimp-litopenaeus-vannamei)

Abstract:

C-type lectins (CTLs) is a protein superfamily of glycan binding receptors, they have play important role in the host defense against pathogens and the maintenance of immune homeostasis of crustacea and higher animals even to against bacterial infection by serving as pattern recognition receptors. Especially, shrimp which is species with only innate immunity, no specific immunity. So, CTLs as a complement protein to increase phagocytosis. This study aimed to cloning and expression of LvCTL4 encoding gene from white leg shrimp (*Litopenaeus vannamei*) in *Escherichia coli*. The result showed that LvCTL4 gene had 417 nucleotides in length, the rate of 99,52 % similar to the published LvCTL4 gene (with code KM387560). The deduced polypeptide sequence has 138 amino acids, which is 100% similar to the reference sequence (AKA64754). Characterization of predicted LvCTL4 protein showed that they only have one domain (C-type lectin domain) from amino acid position 1 to 137 based on inferred sequence. Predicted LvCTL4 protein has a molecular 15.75 kDa in weight, point of Isoelectric was 4.58. The gene was cloned into the expression vector pET200 - TOPO. The resulting plasmid containing LvCTL4 was transformed into the bacterial strain *E. coli* BL21 (DE3) and sucessfully expression. Recombinant LvCTL4 will be agglutinate *Vibrio parahaemolyticus* bacterial causing acute hepatopancreatic necrosis disease (AHPND) in shrimp. In addition, the CTLs recombinant protein has the potential to be added to aquatic feeds to increase the innate immune response though immunity factor such as: phenoloxidase (PO), phagocytic activity and total hemocyte count (THC) and prevent and treat shrimp diseases in the future.

Keyword: C-type lectin, gene encoding, *LvCTL4* gene, white leg shrimp

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Biography:

Mr Tran Vinh Phuong studied Aquaculture at University of Agriculture and Forestry, Hue University, Vietnam and graduated as Bachelor in 2008 and MS in 2012. Now I am studying PhD student in Aquaculture at the same University. Prof Nguyen Ngoc Phuoc who works at Hue University is my advisor. Beside that I still was supported by Prof Nguyen Quang Linh. I then joined the research group of Prof. Linh at the Hue University, Vietnam since 2012 to now for aquaculture project. I have published more than 15 research articles, in which only 6 international journals (3 papers (Scopus/WoS) and 3 other international journals) and domestic journal is remaining.

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