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Molecular cloning of a C-type lectin from *Portunus trituberculatus*, which might be involved in the innate immune response

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Abstract

C-type lectin plays an important role in the innate immune response of crustaceans including *Portunus trituberculatus* which is an important marine species. In the present study, we cloned the full length of a C-type lectin (designated as PtCTL4) from *P. trituberculatus* via 3'RACE. The full length of the nucleic acid sequence had a length of 654 bp including an open reading frame (ORF) of 480 bp. PtCTL4 possesses conserved CTL features, while containing a CRD domain with Ca^{2+} binding site 2 and six conserved cysteine residues. qRT-PCR analysis showed that PtCTL4 expression level was highest in the hepatopancreas, while it was relatively low in other tissues such as hemocytes, eyestalk, muscle, and gonad. The expression level of PtCTL4 reached a maximum at 3 h after challenge with *Vibrio alginolyticus*, then decreased to the lowest level at 12 h, and returned to normal level at 48 h. Hemagglutination analysis showed that the recombinant PtCTL4 (rPtCTL4) can agglutinate rabbit erythrocyte. The rPtCTL4 can agglutinate