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Characterization of Crustin from Litopenaeus vannamei

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Abstract : A crustin gene, LV-SWD1, previously found in the hemocyte cDNA library of Litopenaeus vannamei, contains the open reading frames of 288 bp encoding a putative protein of 96 amino acid residues. The putative signal peptides of the LV-SWD1 were identified using the online SignalP 3.0 with predicted cleavage sites between Ala24-Val25, resulting in 72 residue mature protein with calculated molecular mass of 7.4 kDa and predicted pI of 8.5. This crustin contains a Arg-Pro rich region at the amino-terminus and a single whey acidic protein (WAP) domain at the carboxyl-terminus. In order to characterize their properties and biological activities, the recombinant crustin protein was produced in the Escherichia coli expression system. Antimicrobial assays showed that the growth of Bacillus subtilis was inhibited by this recombinant crustin with MIC of about 25-50 µM.

 $\textbf{Keywords:} \ crustin, \ single \ whey \ acidic \ protein, \ Litopenaeus \ vannamei, \ antimic robial \ activity$

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