



Molecular characteristic and expression analysis of collagenolytic serine protease from the Chinese mitten crab *Eriocheir sinensis* with defense response to *Vibrio anguillarum* challenge

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ABSTRACT. A novel collagenolytic serine protease (CLSP) was cloned from the hemocytes of the Chinese mitten crab *Eriocheir sinensis* (Es-CLSP). The full-length cDNA of Es-CLSP contains 990 nucleotides. It encodes a 270-amino acid-long peptide with the mature peptide containing 221 amino acids. It contains the conserved catalytic triad (H, D, and S). Similarity analysis shows that Es-CLSP shares high identity with CLSPs from the fiddler crab *Uca pugilator*. Es-CLSP mRNA expression in *E. sinensis* is a) tissue-related with the highest expression in hemocytes and widely distributed, b) highly responsive to *Vibrio anguillarum* challenge in hemocytes, and c) a different response to the intruding pathogens. The results of this study demonstrate the successful isolation of Es-CLSP and indicate that Es-CLSP is an immune-related gene, and show the possible role of CLSP in the invertebrate innate immune system.

Key words: Collagenolytic serine protease; *Eriocheir sinensis*; Innate immunity