Interactions between penaeus monodon cell surface receptors and white spot syndrome virus structural proteins / 曲君平

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ABSTRACT

White spot syndrome virus (WSSV; genus Whispovirus, family Nimaviridae) is a widely occurring virus which attacks cultured shrimp and many other crustaceans and has caused severe mortalities and huge economic losses for the global shrimp farming industry. Currently, no effective method is available for treating this disease caused by WSSV infection. However, recent studies have reported host cell proteins related to WSSV infection. This study, cloned full length of gene. Furthermore, pmgC1qR (penaeus monodon C1q receptor) and other 2 cell surface receptors, including pmRab7 (P. monodon Rab7 protein) and Lamr (laminin receptor) interacted with WSSV structural proteins, were globally analyzed using on a WSSV structural protein yeast two-hybrid library. Yeast two-hybrid screening revealed that the pmgC1qR, pmRab7 and Lamr interacted with 19, 24, and 42 viral structure proteins, respectively. Co-immunoprecipitation assays confirmed the interactions of pmgC1qR with WSSV VP52A, VP19 and VP26; between pmRab7 with WSSV VP52B and VP56; and Lamr with WSSV VP31, VP264C and VP26. The study results may contribute to clarifying the mechanism of WSSV infection and the developing an anti-viral strategy. Key Words: White spot syndrome virus, Receptor, Penaeus monodon, virus-host interaction, protein-protein interaction

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Table of Contents

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