

Silencing Pacific white shrimp *Litopenaeus vannamei* LvRab7 reduces mortality in brooders challenged with white spot syndrome virus

White spot syndrome virus (WSSV) is a major threat for farmed shrimp worldwide. RNA interference (RNAi) is the most recent tool against viral diseases. Rab7 silencing effectively inhibited virus infections in juvenile shrimp, but the antiviral effect in brooders remains unknown. This study found a homologue *Penaeus monodon* Rab7 gene in *Litopenaeus vannamei* brooders from Mexico. Sequence identity was >99% to a Thai LvRab7 sequence and >94% to Rab7 sequences from *P. monodon* or *Marsupenaeus japonicus*. Animals treated with a partial (494 bp) or a complete (618 bp) LvRab7 dsRNA sequences and challenged 48 h post treatment (hpt) with a high WSSV dose showed 80–88% mortality respectively. Shrimp treated with 4 or 20 µg LvRab7 dsRNA and challenged with a WSSV high dose had 80% mortality each, but it was reduced to 33% and 40%, respectively, with a low dose. Efficacy of dsRNA to reduce shrimp mortality was dependent on virus dose used regardless of dsRNA concentration. A significant reduction in LvRab7 mRNA levels was observed at 120 hpt. In conclusion, silencing LvRab7 in brooders showed a mild antiviral effect against a WSSV challenge at 48 hpt.