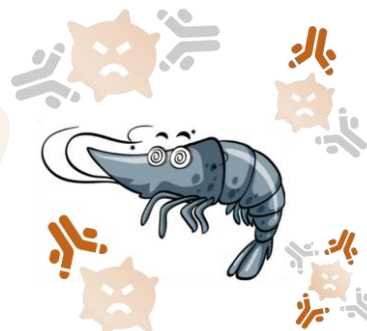




MOLECULAR CHARACTERIZATION OF A NOVEL PROTEIN ISOLATED FROM MICROSPORIDIAN ENTEROCYTOZON HEPATOPENAEI (EHP)

What is EHP?

EHP was first reported in 2004 from hepatopancreas of *P. monodon* and classified as an intracellular parasite in the microsporidia group. It causes hepatopancreatic microsporidiosis in shrimp.



BACKGROUND:

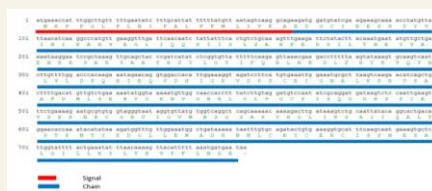
EHP induces growth retardation and the size disparity in farmed shrimps. The horizontal transmission of EHP from infected shrimp to naïve shrimp occurs through dispersal of EHP spores in rearing water. However, deep molecular analysis of spore based EHP infection remains to be investigated. Comparative analysis based on genomic and transcriptome approaches revealed that the EHP virulence mechanism is conserved among the microsporidian species. Polar tube proteins (PTPs), ATPase enzymes and spore wall proteins (SWPs) are the examples of the virulence associated proteins that have been identified to date.

OBJECTIVE:

To determine the novel protein of EHP and its localization

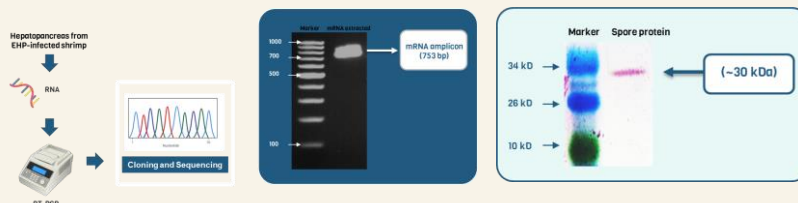
RESULT

Prediction of deduced amino acid sequence for novel protein



This gene encodes 250 amino acids, containing a signal peptide of 21 amino acids at the N-terminus. An estimated molecular weight of 27.7 kDa and a predicted pI of 5.25.

RT-PCR and western blot analysis of the novel EHP protein



mRNA is expressed in EHP-infected shrimp. Detection of protein by western blot analysis showed that antibody could detect a single target band (~30 kDa) in total spore protein preparation

Localization on EHP spore

Immunofluorescence microscopy demonstrated the localization of protein on the spore wall and extruded polar tube of EHP spores.

