



भाकृअनुप – केन्द्रीय खारा जलजीव पालन अनुसंधान संस्थान

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Nested PCR kit for detection of the microsporidian *Enterocytozoon hepatopenaei* (EHP) in shrimp

Introduction

Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (EHP) has been a growing concern in Indian shrimp farming industry since 2015. The disease is fast emerging to wider geographical regions in India often associated with severe growth retardation and/or white faeces syndromes in farmed shrimp. *Enterocytozoon hepatopenaei* infects the tubule epithelial cells of the hepatopancreatic tissue of shrimp causing severe growth retardation and considerable economic loss to shrimp aquaculture. Horizontal transmission of *E. hepatopenaei* occurs very rapidly among shrimp in rearing ponds due to thorough mixing and distribution spores released through faeces. Recently, few cases of EHP in post larvae have been recorded in hatcheries also. As a result, fast, accurate detection is extremely important to ensure biosecurity in shrimp hatcheries and farms.

About the diagnostic kit

PCR is the preferred method for detection of *E. hepatopenaei* due to the minute size of the characteristic spores (~1 µm), when looked for under a light microscope. Many commercial kits are currently available abroad and CIBA also has developed an indigenous and cost effective diagnostic kit for detection of EHP by nested PCR based on the sequence of 18s small subunit rRNA (SSU rRNA) gene of the EHP isolates in India. This kit is designed for the specific and sensitive detection of *E. hepatopenaei* as low as 10 copies of parasite DNA in sample. This kit is cost effective, user friendly and can be performed consistently with minimum laboratory skills. The kit contains all the essential materials and reagents for DNA isolation and PCR, and packaged as single or double tube format to suite the diagnostic laboratories. An inbuilt reaction control using a house keeping gene (β -actin gene) will ensure perfectness of nucleic acid extraction and the PCR reaction.

Who are the potential customers for EHP-PCR KIT?

- PCR testing laboratories in aquaculture
- Shrimp hatcheries in India and overseas
- Department of Fisheries of state governments
- Teaching and R & D institutions of state and central Governments.

Cost of production: Production cost is expected to be Rs. 10,000 per 100 reaction kit and has the potential to be sold at MRP Rs. 30,000-40000.

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