

Multiplex qPCR based diagnostic kit for identification and differentiation of gastrointestinal parasites- *Giardia lamblia*, *Entamoeba* spp. (*Entamoeba histolytica*, *Entamoeba moshkovskii*, *Entamoeba dispar*) and *Cryptosporidium* spp.

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About the Technology:

A multiplex TaqMan probe-based qPCR diagnostic assay for the simultaneous detection of major gastrointestinal protozoan pathogens, including *Giardia lamblia*, *Cryptosporidium* spp., and the *Entamoeba* species complex. The technology uniquely enables species-level differentiation of *E. histolytica*, *E. moshkovskii*, and *E. dispar* in a single test, providing rapid, sensitive, and accurate diagnosis while reducing diagnostic time and laboratory workload.

EoI ref. ID: ICMR/EoI/PM/18/Multiplex qPCR for Gastrointestinal Parasites Detection/2026

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Technology Domain: Diagnostics

IP Filing:

Indian Patent Application: 202611064892

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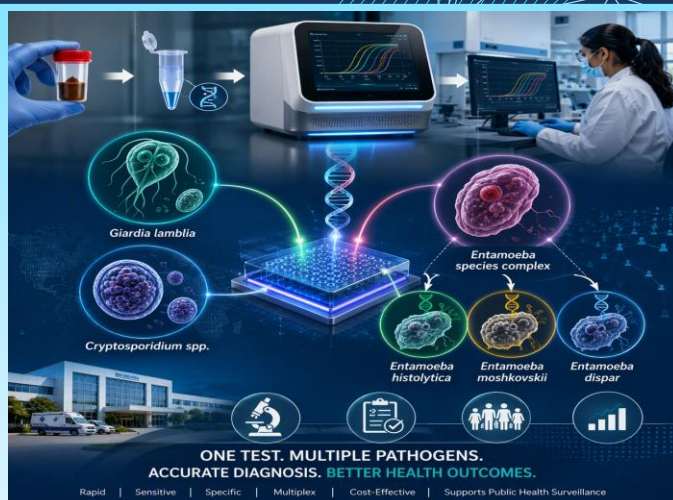
EoI Deadline: 4th September 2026

Need and utility of the Technology from Public health perspective:

Enables rapid, accurate, and multiplex detection of major gastrointestinal parasites, supporting timely treatment and improved disease surveillance. Its cost-effective and manpower-efficient design makes it suitable for large-scale deployment in public health and resource-limited settings.

Technology Readiness level (TRL):

TRL-5: Validated in third party set-up



Validation Status and Study Outcome:

- Validated on 50 clinical stool samples for multiplex detection of *Giardia*, *Cryptosporidium*, and *Entamoeba* spp. at 2 different labs.
- Bose Institute** : 100% sensitivity and 100% specificity.
- KMC Manipal**: 95% sensitivity and 96% specificity, confirming satisfactory assay performance.

Market Potential:

The technology addresses the need for rapid, accurate, and multiplex diagnosis of gastrointestinal parasitic infections in hospitals, diagnostic laboratories, and public health settings. Its cost-effective format offers strong commercialization potential for routine testing, disease surveillance, and outbreak monitoring.

Unmet Need:

Current diagnostics cannot reliably detect multiple enteric parasites and differentiate *Entamoeba* species in a single test. A rapid, accurate, and cost-effective multiplex assay is needed to improve diagnosis, treatment decisions, and disease surveillance.

Publication: NA