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A novel ready-to-use dry-reagent polymerase chain reaction for detection of *Escherichia coli* & *Shigella* species

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***Background & objectives*: Polymerase chain reaction (PCR) has wide acceptance for rapid identification of pathogens and also for diagnosis of infectious conditions. However, because of economic and expertise constraints, a majority of small or peripheral laboratories do not use PCR. The objective of the present study was to develop a dry-reagent PCR assay as an alternative to conventional PCR to assess its applicability in routine laboratory practice using *malB* gene for identification of *Escherichia coli* as a model.**

***Methods*: A total of 184 isolates were selected for the study comprising clinical isolates of *E. coli* and non-*E. coli* including *Shigella* sp. and a few other control strains. The DNA was isolated from all the isolates. The isolated DNA as well as the overnight grown bacterial cultures were subjected to both conventional wet PCR and dry-reagent PCR.**

***Results*: The genomic DNA isolated from *E. coli* showed amplification of *malB* gene in both conventional wet and dry-reagent PCR and the band was observed at 491 bp. In dry-reagent PCR, the overnight grown *E. coli* cells also showed positive result. The non-*E. coli* strains other than *Shigella* sp. showed negative in both conventional wet and dry-reagent PCR. *Shigella* sp. showed positive in both conventional wet and dry-reagent PCR.**

***Interpretation & conclusions*: Considering the elimination of genomic DNA isolation step, and similar results with the conventional wet PCR, dry-reagent PCR may be a good alternative for the conventional wet PCR.**

Key words ABC transporter - dry-reagent PCR - *Escherichia coli* - *malB* gene - maltose/maltodextrin transporter ATP-binding gene - pathogens - *Shigella* sp.

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