

INFLUENCE OF ENRICHMENT BROTHS ON MULTIPLEX PCR DETECTION OF TOTAL COLIFORM BACTERIA, *ESCHERICHIA COLI* AND *CLOSTRIDIUM PERFRINGENS*, IN SPIKED WATER SAMPLES

S Worakhunpiset and P Tharnpoophasiam

Department of Social and Environmental Medicine, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand

Abstract. Although multiplex PCR amplification condition for simultaneous detection of total coliform bacteria, *Escherichia coli* and *Clostridium perfringens* in water sample has been developed, results with high sensitivity are obtained when amplifying purified DNA, but the sensitivity is low when applied to spiked water samples. An enrichment broth culture prior PCR analysis increases sensitivity of the test but the specific nature of enrichment broth can affect the PCR results. Three enrichment broths, lactose broth, reinforced clostridial medium and fluid thioglycollate broth, were compared for their influence on sensitivity and on time required with multiplex PCR assay. Fluid thioglycollate broth was the most effective with shortest enrichment time and lowest detection limit.

Correspondence: Suwalee Worakhunpiset, Department of Social and Environmental Medicine, Faculty of Tropical Medicine, Mahidol University, 420/6 Ratchawithi Road, Bangkok 10400, Thailand.

Tel: +66 (0) 2354 9100 ext 1560; Fax: +66 (0) 2354 9167

E-mail: tmstw@mahidol.ac.th