

## COMPARISON OF RAPID IDENTIFICATION OF *CAMPYLOBACTER JEJUNI* DIRECTLY FROM STOOL SAMPLES USING SMART CYCLER AND ABI7700 SEQUENCE DETECTION SYSTEM (POSTER)

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**Background:** A Developed *ceuE*-Based fluorogenic PCR assay has been reported as an efficient diagnostic tool to detect and differentiate both *Campylobacter jejuni* (CJ) and *Campylobacter coli* (CC). The assays based on the detection of amplification signals using ABI7700 Sequence Detection System (PE Biosystem, CA) where sensitive detection and quantitation of the pathogen could be performed within 2 hours. Besides ABI7700, Smart Cyclor where PCR reactions can be completed portable thermal cyler where PCR reactions can be completed in 45 min, is an attractive instrument for field – site operation. We reported here the comparison between the performance of Smart Cyclor and ABI7700 in the detection of CJ directly from stool samples.

**Methods:** Stool samples were collected from U.S. troops deployed to Thailand during Cobra Gold 2001 Exercise where the prevalence of CJ infection was reported in 40% of diarrhea cases by standard culture method. DNA template was prepared from fresh stool at field-site by direct boiling method. An aliquot of boiled feces was transported under freezing condition to reference laboratory in Bangkok (The detection of CJ by *ceuE*-based PCR assay using Smart Cyclor at field-site and ABI7700 at reference laboratory was performed.

**Results:** From 142 stool samples, 51 were positive for CJ by ABI7700, while 48 samples were positive by Smart Cyclor. The calculated percent sensitivity and specificity of Smart Cyclor were 94% mild PCR inhibitors determined by spiking experiment, while the other one possessed rather low concentration of CJ. Those two false negatives could be turned to be positives after further purification of DNA template. Among the PCR positives, Smart Cyclor showed 96% correlation of Ct values with the mean of 31.6 cycles which is 5.6 cycles later than those obtained from ABI7700.

**Conclusion:** Smart Cyclor exhibited an acceptable accuracy in the detection of CJ at field-site. PCR inhibitors in stool samples showed slightly more effects in the reactions of Smart Cyclor than ABI7700 but this could be eliminated by removal of the inhibitors.

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