Title: DETECTION OF CHLAMYDIA TRACHOMATIS BY PLASMID GAP-LCR-ELISA

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OBJECTIVE: To establish a highly sensitive and specific method (plasmid Gap-LCR-ELISA) to detect Chlamydia Trachomatis (CT).

DESIGN: Four oligonucleotides probes were designed and labeled for plasmid Gap-LCR-ELISA, which were derived from CT cryptic plasmid. Gap-LCR was conducted in six standard serovars of CT and other bacteria frequently causing genitourinary tract infections. PCR was performed with the same plasmid primers as the methodology control. All the amplified products were detected by ELISA to decide the sensitivity and specificity of plasmid Gap-LCR-ELISA.

RESULTS: The DNA from six CT serovars all presented positive results while the C psittaci D34 and other common urogenital pathogens had negative results. The detectable level to EB of CT serovar B-TW-5 was above 2.5, while PCR-ELISA which used the same genetically conservative primers, could only identify those with more than 25 EBs. It showed that the detectable level of Gap-LCR-ELISA to CT was ten times as sensitive as PCR-ELISA.

CONCLUSIONS: Plasmid Gap-LCR-ELISA possesses not only very high specificity, which could detect only CT serovars, without false positives from other chlamydiae species or from common urogenital pathogens, but also with high sensitivity of detecting 2.5EBs. Its ability is comparable to Abbott IMxTm System (U.S.A) so that it is a very promising and efficient method which may be used in identifying CT infections in urogenital tract for the asymptomatic patients in grass-root medical units.