

# DNA Detection of Low Levels of *Chlamydia trachomatis* Genotypes in Urine

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# Background

Nucleic acid amplification tests have been designed and evaluated for their ability to detect all *C. trachomatis* genotypes in clinical specimens. However, the stability of individual genotypes and concomitant effects of urine storage/transport has received little attention.

# Methods

*C. trachomatis* genotypes B, D, E, F, G and J were grown in BGMK cells and standardized for urine inoculation. Two volunteers, who were not infected with *C. trachomatis*, provided urine specimens. These specimens were inoculated with the individual *C. trachomatis* genotypes at approximately 100 inclusion forming units and two-fold dilutions prepared in duplicate with one set being treated with DNA/RNA Protect (Sierra Diagnostics).

Six aliquots of each dilution were removed in order to test the effect of storage temperature (4°C, 22°C and 37°C) and time (24h, 48h and 1 week) on DNA stability. Samples were tested, in triplicate, for the presence of *C. trachomatis*-specific DNA using LCR (Abbott Laboratories) and the results recorded as the highest dilution reading positive in the test.

# Results

All genotypes were more stable in urine 1, regardless of time, temperature and DNA/RNA Protect, than in the other (urine 2).

Genotype E was the most stable in urine 2 stored at different times and temperatures while detection of genotype F dropped after 24h for the three temperatures. A decrease in detection was also noted for genotype G following 48h at 37°C but not at the other temperatures.

In contrast, DNA/RNA Protect enhanced the stability of *C. trachomatis* in urine 2, especially at the higher temperatures.

# Conclusions

The six genotypes examined in this study did not demonstrate a consistent pattern of detection in spiked urine specimens.

The differences in stability of *C. trachomatis* DNA by genotype demonstrated in this study in urine may confound the diagnosis of certain low-grade infections and skew molecular epidemiologic studies.

DNA/RNA Protect enhanced the stability of *C. trachomatis* in urine.