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Evaluation of effects of high incubation temperatures on results of protozoal culture and real-time PCR testing for Tritrichomonas foetus inoculated in a commercially available self-contained culture media system.

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Abstract

OBJECTIVE: To evaluate effects of high incubation temperatures on results of protozoal culture and real-time PCR testing for Tritrichomonas foetus inoculated in a commercially available self-contained culture media system.

DESIGN: In vitro experimental study.

SAMPLE: 2 strains of T foetus (1 field isolate from the University of California-Davis and 1 field isolate from the Texas Veterinary Medical Diagnostic Laboratory).

PROCEDURES: 2 sets of 36 dual-chamber media pouches were inoculated with T foetus (36 sample pouches/strain) and incubated at temperatures of 37.0°C (98.6°F), 46.1°C (115.0°F), or 54.4°C (130.0°F) for 1, 3, 6, or 24 hours. Six uninoculated media samples in pouches stored at 37.0°C for the entire treatment period were used as negative controls. Pouches were removed from incubators and stored at 22.2°C (72.0°F) until all treatments were complete. Samples were submitted to a diagnostic laboratory for protozoal culture and real-time PCR testing.

RESULTS: T foetus was detectable microscopically in inoculated pouches incubated at 37.0°C regardless of exposure time, whereas those incubated at 46.1°C yielded T foetus after 1 and 3 hours only, and those incubated at 54.4°C yielded T foetus after 1 hour only. Testing via real-time PCR assay yielded positive results for all inoculated media samples and negative results for all uninoculated control samples.

CONCLUSIONS AND CLINICAL RELEVANCE: Samples collected into the self-contained culture media system for T foetus testing via culture alone should be protected from high temperatures. Realtime PCR amplification may be a more reliable method for identification of the organism if storage and transport temperatures cannot be controlled.