

Comparison of Carrot Broth- and Selective Todd-Hewitt Broth-Enhanced PCR Protocols for Real-Time Detection of *Streptococcus agalactiae* in Prenatal Vaginal/Anorectal Specimens[▽]

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Received 3 July 2008/Returned for modification 2 September 2008/Accepted 5 September 2008

The reporting of accurate *Streptococcus agalactiae* screening results in a short time frame is of tremendous clinical benefit. A total of 203 consecutive primary vaginal/anorectal specimens were cultured in selective Todd-Hewitt broth (LIM broth) and with the StrepB carrot broth kit (carrot broth). One-day broth cultures were subjected to both centrifugation and clarification of a 500- μ l aliquot prior to sample lysis (protocol A) and direct lysis of a 50- μ l aliquot (protocol B). The lysates were subsequently analyzed by the BD GeneOhm StrepB assay. The results were compared to the carrot broth culture results derived from visualization of pigment on day 1 or from a subculture of carrot broth. Thirty-four carrot broth cultures (16.7%) generated diagnostic pigment following overnight incubation; an additional 26 (12.8%) were positive for *S. agalactiae* upon subculture. Carrot broth-enhanced PCR by the use of either protocol A or protocol B trended toward a higher rate of positive results (33.0%) than the rate observed by either the LIM broth-enhanced PCR (30.5%) or full carrot broth culture analysis (29.6%). In the context of the result on day 1, both carrot broth- and LIM broth-enhanced PCRs generated more true-positive results ($P < 0.001$) than carrot broth culture visualization. The predictive values for both protocols of carrot broth- or LIM broth-enhanced PCR were $\geq 95.4\%$. Whereas protocol A resolved the results for 99.8% of the specimens in the evaluation upon initial testing, a 5.7% initial unresolved rate and a 1.5% final unresolved rate were determined by the use of protocol B. The use of carrot broth within a rapid and highly accurate molecular reflex testing algorithm can limit follow-up testing to cultures without evidence of pigmentation.