

Multicenter Clinical Evaluation of AnaSelect Oxyrase for Broth

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Background and Objective: AnaSelect Oxyrase for broth is a new proprietary selective agent (Oxyrase Inc., Mansfield, OH) which, when added to broth medium, creates anaerobic conditions and suppresses the growth of facultative anaerobic organisms. Since most specimens sent for anaerobic culture contain a mixture of obligate anaerobes and facultative anaerobes, AnaSelect supplement has the potential to suppress facultative organisms, allowing greater recovery of obligate anaerobes. We conducted a multicenter study to evaluate this medium in the clinical laboratory setting by comparing AnaSelect broth with traditional anaerobic primary plating medium and enrichment broth.

Methods: BHI AnaSelect Broth was prepared by adding 5 drops of AnaSelect Oxyrase reagent to 5 ml of BHI broth. The tubes were stored up to 5 days at 4-8° C. before being inoculated. Clinical specimens submitted for anaerobic culture were randomly selected in each participating laboratory. Each specimen was inoculated to routine PRAS primary plating media, a tube of enrichment broth (either chopped meat broth with carbohydrate or thioglycollate broth) and a tube of BHI AnaSelect broth. The plates were incubated under anaerobic conditions with the method used in the participating laboratories (Anaerobic chamber at Norton Healthcare, Oxyplates at MidMichigan and Kettering and Anoximat at Piedmont) and the tubes were incubated in air at 35° C. The routine enrichment and AnaSelect broth tubes were subcultured to PRAS Brucella agar with blood after 48 hours incubation. Results of each culture were recorded and the results of primary plates, routine enrichment broth and AnaSelect broth were compared.

Results: A total of 191 specimens were cultured in the study. Of these, 85 (45%) cultured on primary plates had no growth, 68 (36%) cultured on standard enrichment broth showed no growth and 95 (50%) cultured on AnaSelect showed no growth. Facultative anaerobes were isolated from 97 (50%) of specimens cultured on primary plates, 117 (61%) of specimens cultured in standard enrichment broth and 79 (41%) of specimens cultured in AnaSelect broth. Statistical analysis showed that these were significantly different. Obligate anaerobes were recovered from 22 specimens. Thirteen (7%) specimens cultured on primary plates, 10 (5%) specimens cultured in standard enrichment broth and 20 (10%) specimens cultured in AnaSelect broth yielded obligate anaerobes. A separate statistical analysis showed a significant difference between these numbers. Of the 22 specimens from which anaerobes were recovered, 13 (59%) were cultured on primary plates, 10 (45%) were cultured in standard enrichment broth and 20 (91%) were cultured in AnaSelect broth.

Conclusion: These data suggest that AnaSelect broth significantly suppresses the growth of facultative anaerobes and allows a significantly greater number of obligate anaerobes to be recovered. AnaSelect broth appears to improve the recovery of obligate anaerobes from clinical specimens.