BacterioScan is a life-threatening condition; current methods of antimicrobial susceptibility testing (AST) require 24-48 hours once blood cultures are positive. Reducing turnaround time is critical for effective treatment. The present study utilized a novel method of narrow-angle forward laser scatter to estimate bacterial growth directly from a positive BACTEC™ blood culture bottle, and applied this technology to determine minimum inhibitory concentration (MIC) in 180 to 300 minutes.

**METHODS**

**Bacterial samples**

Enterococcus faecalis (ATCC 29212), Staphylococcus aureus (ATCC 29213) and Escherichia coli (ATCC 25922) were seeded in BACTEC bottles and inoculated at 25°C to achieve a 5x10^5 CFU/ml concentration measured by the BacterioScan 216R. Samples were exposed to a range of antibiotic concentrations (w/oopronoxacin) spanning the expected MIC, and evaluated using the BacterioScan 216R.

**RESULTS**

Bacterial concentration measurements demonstrated MIC values within the CLSI Quality Control ranges for these organisms. E. faecalis, S. aureus and E. coli at 4x10^5 cfu/ml, respectively. The data was analyzed at 0.12 – 0.5 ug/ml for the various antibiotic susceptibility testing (AST) agents.

**CONCLUSIONS**

The BacterioScan 216R is an accelerated platform to detect and measure bacterial growth at initial concentrations two logs below traditional methods. The technique employed was viable for the detection of bacterial growth in a variety of patient samples, including those with low MIC values. The results demonstrated that the BacterioScan 216R technology is a promising tool for rapid AST evaluation in clinical settings.