

Identification of *P. aeruginosa* and *A. baumannii* causing nosocomial infection by using microarray-based assay

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Infection by nosocomial pathogenic bacteria is increasingly becoming a major threat to the patients in the hospital. Among the nosocomial pathogens, *Pseudomonas aeruginosa* has emerged in recent years as one of the most important pathogenic bacteria and a leading cause of bacteremia having morbidity and mortality rate ranging from 25-50%¹⁾. *Acinetobacter baumannii* is an etiological agent of bacteremia and nosocomial pneumonia having mortality rate of greater than 70%²⁾. We have developed a diagnostic DNA microarray for the detection of two important nosocomial pathogens, *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. The diagnostic DNA microarray contains the species-specific probes of 15-mer oligonucleotides designed based on the sequences of 23S ribosomal DNA. Using this DNA microarray, *A. baumannii* could be successfully detected in 11 out of 13 clinical specimens, thus giving the sensitivity of 84.6% with the specificity of 100% and the positive predictive value of 100%. *P. aeruginosa* could also be detected in 25 out of 26 clinical specimens, showing the sensitivity of 96.2%, the specificity of 100%, and the positive predictive value of 100%. These results suggest that a variety of clinical isolates of *A. baumannii* and *P. aeruginosa* can be detected using the DNA microarray developed in this study.

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References

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