Identification of nosocomial pathogens using microarray hybridization

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Nosocomial infections have affected 5% of all patients admitted to hospitals caused 88,000 deaths and accounting for 4.5 billion dollars in health care costs annually. We have developed a diagnostic microarray for the detection of two important nosocomial pathogens, Pseudomonas aeruginosa and Acinetobacter baumannii. The diagnostic microarray contains the DNA probes designed based on the sequences of 23S ribosomal DNA. The microarray was evaluated using reference bacteria as well as various clinical specimens, resulting in the sensitivity of 84.6% and the specificity of 100% for P. aeruginosa, and the sensitivity of 96.2% and the specificity of 100% for A. baumannii. [The work was supported by Medigenes Co. and Korean Systems Biology Research Program (M10309020000-03B5002-00000) of the Ministry of Science and Technology. Further supports by the LG Chem Chair Professorship, KOSEF through the CUPS, IBM-SUR program and BK21 program are appreciated].