High throughput identification of microbial pathogens causing bloodstream infections by using microarray

유승민, 최준용[1], 윤정국[2], 최재경[2], 이경원[1], 김준명[1], 한민선, 이상엽*
한국과학기술원; [1]연세대학교; [2]MediGenes
(hanminsun@kaist.ac.kr*)

The spectrum of pathogens causing bacteremia with high mortality is gradually becoming wider, causing serious healthcare problems worldwide. The current blood culture system followed by biochemical tests requires long time to obtain results with low specificities. Thus, there has been much interest in developing microarrays for detecting pathogens in the blood. Here, we report the DNA microarray for detecting 57 important blood-borne pathogens. The microarray showed that all target DNAs from reference strains hybridized strongly to specific probes from their respective sequences. The microarray correctly identified pathogens in 103 out of 112 blood positive culture samples. Therefore, the microarray in this study should be useful for identifying blood-borne pathogens in clinical setting. [This work was supported by the Korean Systems Biology Project, WCU program (R32-2008-000-10142-0) from the Ministry of Education, Science and Technology, Medigenes Co. and LG Chem Chair Professorship]