

Abstract Submitted  
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**Detection of  $\alpha$ -fetoprotein in human serum using carbon nanotube transistor** HYE-MI SO, DONG-WON PARK, KRICT, SEONG-KYU LEE, Eulji University School of Medicine, BEOM SOO KIM, Chungbuk National University, HYUNJU CHANG, JEONG-O LEE, KRICT — We have fabricated antibody-coated carbon nanotube field effect transistor (CNT-FET) sensor for the detection of  $\alpha$ -fetoprotein (AFP), single chain glycoprotein of 70 kDa that is normally expressed in the fetal liver, in human serum. The AFP-specific antibodies were immobilized on CNT with linker molecule such as pyrenebutyric acid N-hydroxysuccinimide ester. To prevent nonspecific adsorption of antigen, we performed blocking procedure using bovine serum albumin (BSA). Antibody-antigen binding was determined by measuring electrical conductance change of FET and took an average of threshold voltage change before and after binding. Also we checked concentration-dependent conductance change in human serum using both p-type SWNT-FETs and n-type SWNT-FETs.

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