

Silicon Nanowire-based Biosensor for the Rapid Detection of MMP-2 via Enzymatic Cleavage Reaction

표수현*, 최진하, 최정우, 오병근
서강대학교
(suhyun1120@naver.com*)

Recently, Silicon nanowires have several advantages in the development of biosensors which are real-time, ultrasensitive, direct and label-free. In this study, 100nm silicon nanowire field-effect transistors (FET) device was fabricated by electron-beam lithography and Matrix metalloproteinases-2 (MMP-2) was successfully detected. In conclusion, varying concentration (100nM~1pM) of MMP-2 were sequentially measured by conductance versus time at MMP-2 concentrations range using the fabricated silicon nanowire FET device. **Acknowledgments:** This research was supported by the Original Technology Research Program for Brain Science through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (2009-0093907), and a part of the project titled "Development of Sustainable Remediation Technology for Marine Contaminated Sediments" funded by the Ministry of Land, Transport and Maritime Affairs, Korea, and by the Ministry of Knowledge Economy(MKE) and Korea Institute for Advancement in Technology (KIAT) through the Workforce Development Program in Strategic Technology.