

Electrochemical Characterization of the Assembled Recombinant Ferredoxin for the Molecular Electronic Device

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Electrochemical characterization of recombinant ferredoxin was investigated on a gold electrode in order to develop a molecular bioelectronic device. The recombinant ferredoxin, which was designed to have thiol (-SH) groups by site-directed mutagenesis, was immobilized on top of flame-annealed gold-ball microelectrode by self-assembly method and its molecular configuration was investigated with atomic force microscopy. Cyclic voltammetry showed that the redox potential of the immobilized ferredoxin has a formal potential value of -320 mV (vs. Ag/AgCl). Acknowledgements: This work was supported by the Korea Research Foundation Grant funded by the Korean Government (MOEHRD) (KRF-2006-005-D00003) and by the Nano/Bio science & Technology Program (M10536090001-05N3609-00110) of the Ministry of Science and Technology (MOST), and by the Brain Korea 21 Project of the Ministry of Education and Human Resources Development.