

## ES1

### Manufacture and Electrochemical Application of Bio-sensor using Boron-doped Diamond Modified Electrode

붕소가 도핑된 다이아몬드 수식전극을 이용한 바이오 센서의  
제작 및 전기화학적 응용

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Boron-doped conductive diamond(BDD) electrodes, known to have superior electrochemical properties, were used as an working electrode for detection of epinephrine in the presence of ascorbic acid(AA). Epinephrine is a kind of catecholamines, which secreted from adrenal marrow cells. The serious problem to detection of epinephrine is the interference phenomena of electroactive constituent, including AA. In this study, electrochemical treatment of BDD was carried out to discriminate between epinephrine and AA responses. And epinephrine was detected by BDD electrode using various membrane. Experimental results showed that the peak potential of AA oxidation shift to the positive direction and the oxidation peak of epinephrine was unchanged. The effect of electrochemical treatment was maintained up to 40 hrs. When used coated membrane to BDD electrode, we detected epinephrine pick to AA oxidation and showed reduction of epinephrine.

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