

**Detection of penicillin concentration using
beta-lactamase coated polyaniline biosensor**

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Lactamase coated polyaniline biosensor for the detection of penicillin has been developed. The polyaniline was dispersed on the surface of carbon paste and lactamase was covalently attached to the polyaniline. The operational characteristics of developed biosensor were investigated using differential amplification method which are cyclic voltammetry and chronoamperometry.

The developed biosensor has been characterized using various concentrations of penicillin G. We used cyclic voltammetry to understand the electrochemical property of biosensors. The biosensor coated with polyaniline showed better hysteresis and linear range than that without polyaniline. The developed penicillin biosensor possesses a low detection limit of 100nM. The polyaniline biosensor showed linear and stable response in the range of 100 ~ 1000 nM penicillin concentration.