Biosynthesis of Gold Nanoparticles Using *Pleurotus ostreatus* extract with Their Electrochemical Activity of Detection of Carbendazim in vegetable

Wei Wang¹, Fangjie Yao^{1,*}, Daxiang Wang⁴, Xudan Zhou¹, Xiaomei Wang², Chengai Zhao³, Ming Fang¹ and Jing Cai¹

¹ College of Horticulture, Jilin Agricultural University, No.2888 Xincheng St, Changchun, Jilin, 130118, P.R. China

² College of Agricultural, Jilin Agricultural University, No.2888 Xincheng St, Changchun, Jilin, 130118, P.R. China

³ Collage of Resources and Environment. Jilin Agricultural University, No.2888 Xincheng St, Changchun, Jilin, 130118, P.R. China

⁴ Xinyang of Henan Province Hydroglogy and Water Resources Survey Bureau, Xinyang, Henan, P.R.China,

*E-mail: yaofangjie_228@qq.com

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Biosynthesis has attracted numerous attentions recently in the field of nanomaterial synthesis owing to its non-toxicity and environmental protection. Herein, AuNPs were successfully prepared by biosynthesis with *Pleurotus ostreatus* produced laccase as reducing agent. The formation of metallic Au was confirmed by both UV-vis spectroscopy, X-ray diffraction (XRD) and X-ray photoelectron spectroscopy (XPS). As shown from the results of scanning electron microscopy, the mean size of the biosynthesized AuNPs were 47 nm. The biosynthesized AuNPs were then applied for the modification of screen printed electrode. The electrochemical sensor constructed with AuNPs/SPE electrode demonstrated remarkable performance towards the determination of carbendazim in vegetable.

Keywords: Biosensor; Carbendazim; Electrode modification; *Pleurotus ostreatus*; Au NPs

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