

(52)

**A NEW IMMUNOSENSOR FOR RAPID DETECTION OF GIBBERELIC ACID**

**Ruozhong Wang<sup>1</sup>, Jin Li<sup>2</sup>, Langtao Xiao<sup>1\*</sup>**

**<sup>1</sup> Hunan Provincial Key Laboratory of Phytohormones and Growth Development, Hunan Agricultural University, Changsha, 410128, P. R. China**

**<sup>2</sup> Department of Environmental Science and Engineering, State Key Laboratory of Chemo/Biosensing and Chemometrics, Chemistry and Chemical Engineering College, Hunan University, Changsha, 410082, PR China**

Gibberellins are phytohormones essential for normal plant growth while gibberellic acid (GA<sub>3</sub>) is one of the most active forms among more than 120 naturally occurring gibberellins. Accurate analysis of gibberellins is important for crop production. Based on immunosensor technology, a rapid, selective, sensitive, accurate, and inexpensive immunosensor for gibberellic acid detection was designed by coupling immunoassay with the square wave anodic stripping voltammetry (SWASV) technique involving copper ion labeled antigen in the competitive immunoreaction. The response signal expressed as the percentage of current reduction (CR %) ( $y$ ) is linearly related to the concentration of GA<sub>3</sub> ( $x$ ) in the 1 $\mu$ g/mL to 150 $\mu$ g /mL range with a regression equation of the form  $y=0.44x +15.59$  and a correlation coefficient of 0.99. The results of the immunosensor assay for GA<sub>3</sub> in rice grains showed similar sensitivity with traditional HPLC and ELISA assays.