

Supplementary data

In vivo Detection of Salicylic Acid in Sunflower Seedlings under Salt Stress

Ye Hu^{1,2}, Jing Zhao^{1,3}, Haiyang Li¹, Xiaodong Wang^{1,2}, Peichen Hou^{1,2}, Cheng Wang^{1,2}, Aixue Li^{1,2*}, and Liping Chen^{1,2*}

¹ Beijing Research Center of Intelligent Equipment for Agriculture, Beijing Academy of Agriculture and Forestry Sciences, Beijing 100097, P.R. China;

² Beijing Research Center for Information Technology in Agriculture, Beijing Academy of Agriculture and Forestry Sciences, Beijing 100097, P.R. China;

³ Department of Environmental Science and Engineering, Zhejiang Ocean University, Zhoushan, Zhejiang 316022, P.R. China;

* Corresponding author E-mail address: liax@nercita.org.cn (A. Li),
chenlp@nercita.org.cn (L. Chen).

Fig. S1 DPV curves of SA concentrations (0.01, 0.1, 0.5, 1.0, 5.0, 25.0, 75.0, 200.0, 500.0 nM in turn) in a 10% homogenate of sunflower seedling stems diluted by 0.01 M PBS detected by the PtNF/ERGO/Pt electrode.

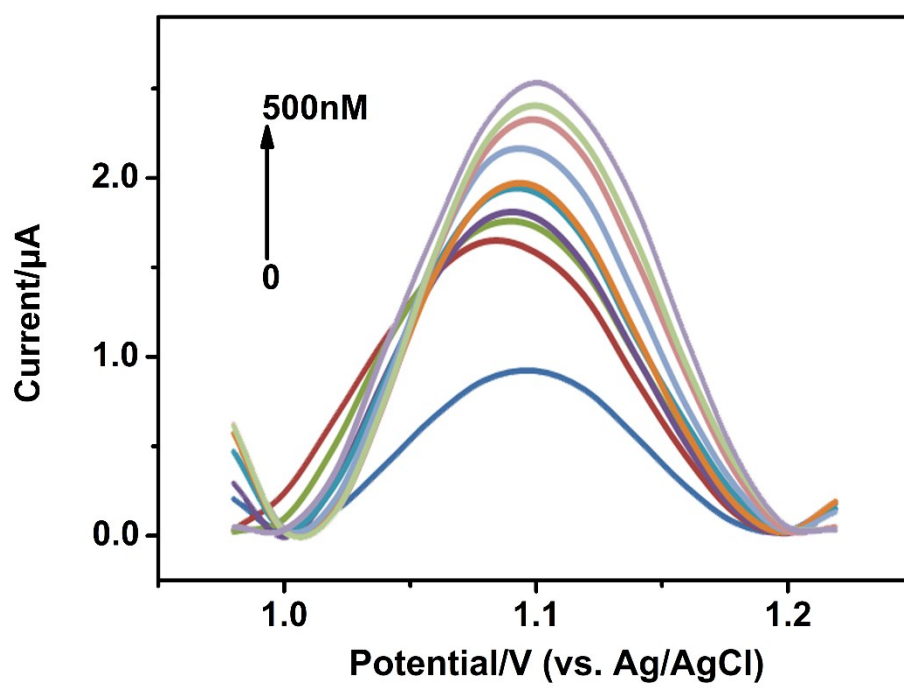


Table S1

Comparisons of the proposed PtNF/ERGO/Pt performance with the previous report SA sensors.

Working electrode	Linear range	Detection limit	Reference
MWCNTs-chitosan/ GC	0.67-48.82 μ M	0.1 μ M	(Sun et al. 2015)
Cu NPs/ gold electrode	20-500 μ M	6.4 μ M	(Wang et al. 2010a)
MWCNTs/ nafion / carbon tape electrode	0.5-100 μ M	0.05 μ M	(Sun et al. 2014)
Carbon-fiber electrode	2-3000 μ M	1.68 μ M	(Park and Eun 2016)
Polypyrrole-banana tissue/graphite rod	0.1-100 μ M	89nM	(Zavar et al. 2013)
GO/ MWCNTs/ GC	0.08-150 μ M	0.03 μ M	(Lu et al. 2014)
Pt NPs/ Pt disk electrode	0-1000 μ M	0.1 μ M	(Wang et al. 2010b)
PtNF/ ERGO/ Pt electrode	0.1nM-1 μ M	48.11pM	This work

Lu, L., Zhu, X., Qiu, X., He, H., Xu, J., Wang, X., 2014. Graphene Oxide/Multiwalled Carbon Nanotubes Composites as an Enhanced Sensing Platform for Voltammetric Determination of Salicylic Acid. *Int. J. Electrochem. Sci.* 9(12), 8057-8066.

Park, J., Eun, C., 2016. Electrochemical Behavior and Determination of Salicylic Acid at Carbon-fiber Electrodes. *Electrochim. Acta* 194, 346-356.

Sun, L., Liu, X., Gao, L., Lu, Y., Li, Y., Pan, Z., Bao, N., Gu, H., 2015. Simultaneous Electrochemical Determination of Indole-3-acetic Acid and Salicylic Acid in Pea Roots using a Multiwalled Carbon Nanotube Modified Electrode. *Anal. Lett.* 48(10), 1578-1592.

Sun, L.J., Feng, Q.M., Yan, Y.F., Pan, Z.Q., Li, X.H., Song, F.M., Yang, H., Xu, J.J., Bao, N., Gu, H.Y., 2014. Paper-based electroanalytical devices for in situ determination of salicylic acid in living tomato leaves. *Biosens. Bioelectron.* 60(11), 154.

Wang, Z., Ai, F., Xu, Q., Yang, Q., Yu, J.H., Huang, W.H., Zhao, Y.D., 2010a. Electrocatalytic activity of salicylic acid on the platinum nanoparticles modified electrode by electrochemical deposition. *Colloids Surf., B* 76(1), 370-374.

Wang, Z., Wei, F., Liu, S.Y., Xu, Q., Huang, J.Y., Dong, X.Y., Yu, J.H., Yang, Q., Zhao, Y.D., Chen, H., 2010b. Electrocatalytic oxidation of phytohormone salicylic acid at copper nanoparticles-modified gold electrode and its detection in oilseed rape infected with fungal pathogen *Sclerotinia sclerotiorum*. *Talanta* 80(3), 1277-1281.

Zavar, M.H.A., Heydari, S., Rounaghi, G.H., 2013. Electrochemical Determination of Salicylic Acid at a New Biosensor Based on Polypyrrole-Banana Tissue Composite. *Arabian Journal for Science & Engineering* 38(1), 29-36.