

## Supplementary Information

### Effects of cold plasma treatment on physical modification and endogenous hormone regulation in enhancing seed germination and radicle growth of mung bean

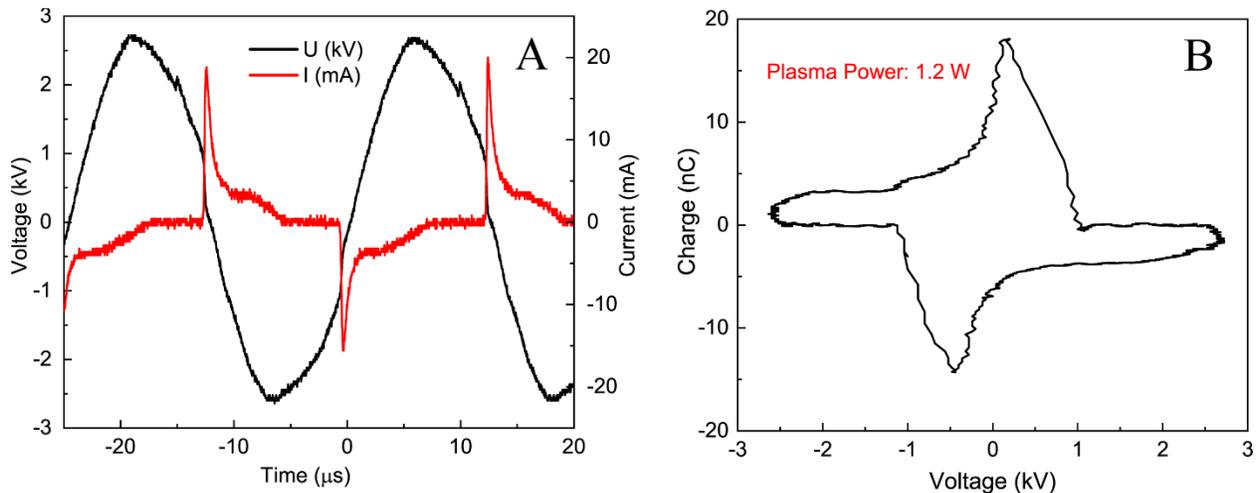
Thi Quynh Xuan Le<sup>1,2</sup>, Linh Nhat Nguyen<sup>1</sup>, Thanh Tung Nguyen<sup>1</sup>, Eun Ha Choi<sup>3</sup>, Quang Liem Nguyen<sup>1</sup>, Nagendra Kumar Kaushik<sup>3,\*</sup> and Nguyen Thuan Dao<sup>1,2,\*</sup>

<sup>1</sup> Laboratory of Plasma Technology, Institute of Materials Science, Vietnam Academy of Science and Technology (VAST), 18 Hoang Quoc Viet Road, Cau Giay District, Hanoi 100000, Vietnam

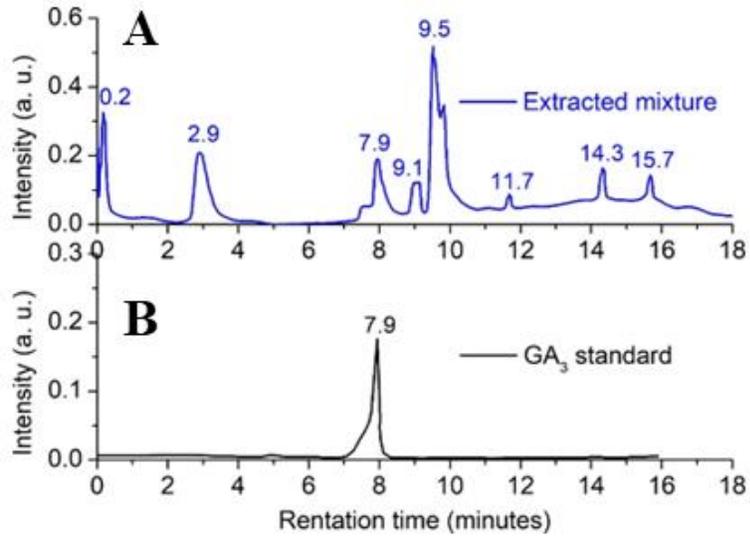
<sup>2</sup> Graduate University of Science and Technology (GUST), VAST, Hanoi 100000, Vietnam

<sup>3</sup> Plasma Bioscience Research Center, Department of Electrical and Biological Physics, Kwangwoon University, Seoul 01897, Korea

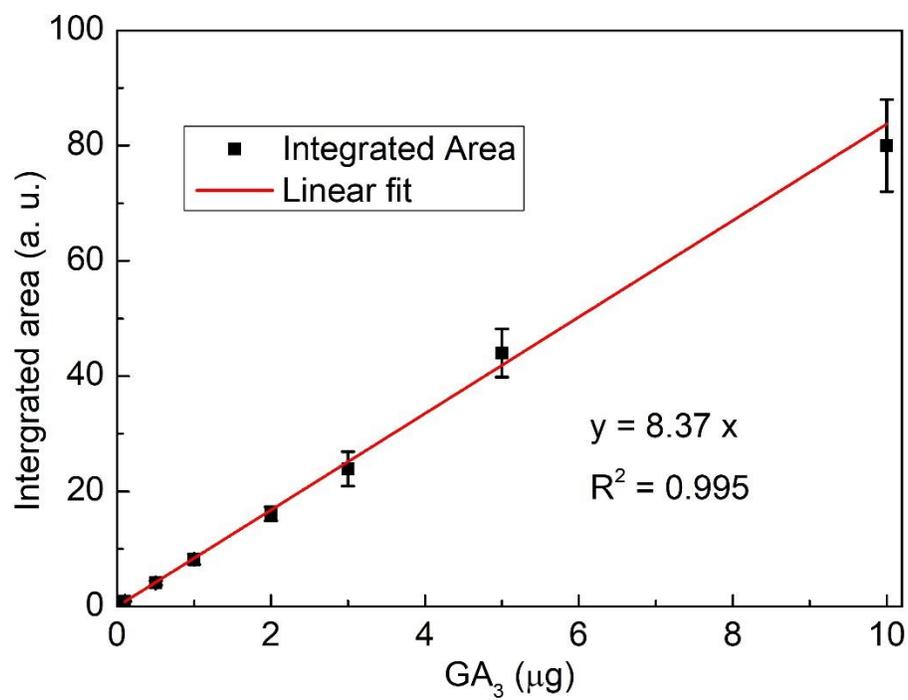
\* Correspondence: kaushik.nagendra@kw.ac.kr (N.K.K.); thuandn@ims.vast.ac.vn (N.T.D.)



**Figure S1.** Characteristics of the plasma jet: (A) voltage–current wavefunction and (B) Lissajous graph of the Ar plasma jet. The dissipated plasma power was estimated using a capacitance C means of 1 nF.



**Figure S2.** (A) Liquid chromatograms of the extracted liquid (blue) vs. (B) the calibration curve of the standard GA<sub>3</sub> (Sigma – 48880) (black). The retention time of GA<sub>3</sub> is from 7 to 8 minutes, peaking at 7.9. The amount of gibberellic acid (GA<sub>3</sub>) in extracted solution is determined based on the integrated area of the LC spectrum, with averaging of three measurements.



**Figure S3.** Calibration curve derived from the integrated area between 7 to 8 minutes retention time in the LC spectrum vs. different amounts (0.1; 0.5; 1; 2; 3; 5; 10) μg of the standard GA<sub>3</sub>.