Feasibility of Electrochemical Fingerprinting for Plant Phylogeography Study: A Case of *Chimonanthus praecox*

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doi: 10.20964/2020.01.64

Received: 8 September 2019 / Accepted: 28 October 2019 / Published: 30 November 2019

Investigation of plant relationships is very important in phylogeny and plant culture. In this work, we proposed an electrochemical fingerprint-based method for the investigation of *Chimonanthus praecox* from different locations. This is the first time that electrochemical fingerprinting technology has been applied to the study of the relationships between subspecies. Three buffer solutions were used as a solvents along with an electrolyte during the *Chimonanthus praecox* leaf extraction and fingerprint recording. The voltammetric curves of *Chimonanthus praecox* from different locations exhibited very similar profiles, confirming the feasibility of species identification based on the electrochemical fingerprint. A two-dimensional scatter pattern deduced from two sets of fingerprints was used to distinguish the locations. In addition, this phylogeographic study based on electrochemical fingerprinting suggested that *Chimonanthus praecox* has multisite and multitime origins.

Keywords: Electrochemical fingerprints; Plant identification; Taxonomic sensing; Solid state electrochemistry; *Chimonanthus praecox*

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