Evaluation of Herb and Fruit Juice Adulteration and Authenticity by Coulometric Array Detection and Pattern Recognition Analysis

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Overview
Purpose: Coulometric array detection was used to generate untargeted metabolite fingerprints of oregano and various adulterants. This approach could readily detect as little as 5% adulteration of oregano, with minimal cross-reactivity with other herbs and fruit juices.

Methods: Coulometric array detection and pattern recognition analysis were used to assess the authenticity of oregano and various adulterants. The method involved the use of an electrode array to generate electrochemical fingerprints, which were then compared to a database of authentic and adulterated samples.

Results: This approach could readily detect as little as 5% adulteration of oregano. The detection limit was determined to be 5% by testing oregano blended with 5% of various adulterants.

Conclusion: Coulometric array detection is a simple and effective method for detecting adulteration in oregano and other herbs and fruit juices. This method can be used to verify the authenticity of other herbs and fruit juices, and is particularly useful for identifying the presence of small amounts of adulterants.

References