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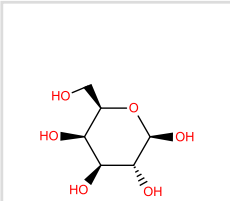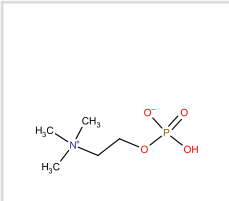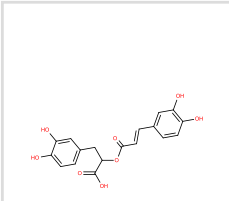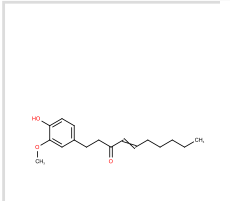
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Abstract

Herbal medicines (HMs) are regarded as one of the traditional medicines in health care to prevent and treat some diseases. Some herbal components such as turmeric and ginger are used as HMs, therefore the identification and confirmation of herbal use are very necessary. In addition, the adulteration practice, mainly motivated to gain economical profits, may occur by substituting the high price of HMs with lower-priced ones or by addition of certain chemical constituents known as Bahan Kimia Obat (chemical drug ingredients) in Indonesia. Some analytical methods based on spectroscopic and chromatographic methods are developed for the authenticity and confirmation of the HMs used. Some approaches are explored during HMs authentication including single-component analysis, fingerprinting profiles, and metabolomics studies. The absence of reference standards for certain chemical markers has led to exploring the fingerprinting approach as a tool for the authentication of HMs. During fingerprinting-based spectroscopic and chromatographic methods, the data obtained were big, therefore the use of chemometrics is a must. This review highlights the application of fingerprinting profiles using variables of spectral and chromatogram data for authentication in HMs. Indeed, some chemometrics techniques, mainly pattern recognition either unsupervised or supervised, were applied for this purpose. © 2022 by the authors. Licensee MDPI, Basel, Switzerland.

Author keywords

Chemometrics; Chromatographic; Herbal authenticity; Herbal medicine; Spectroscopic

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