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Chemical characterization and antioxidant activity of three medicinal Apiaceae species (Article)

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Abstract

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Centella asiatica ('Pegaga' = Malaysia) is well known plant that has been used as one of the ingredients in pharmaceutical and cosmetic industries. Using liquid chromatography with diode array and electrospray ionization/mass spectrometry (LC-DAD-ESI/MS) analysis, chemical profiling of three different Pegaga extracts (*C. asiatica*, *H. bonariensis* and *H. sibthorpioides*) revealed variations in their metabolite profile. Our findings showed that triterpenes of *C. asiatica* were characterized by the ursane-type triterpenes (madecassoside, asiaticoside, madecassic acid, and asiatic acid), while the two Hydrocotyle species consisted of oleanane-type triterpenes (barrigenol derivatives). Other variations are due to the difference in phenolic and flavonoid constituents. The three Pegaga extracts were also evaluated for their total phenolic content (TPC), 1,1-diphenyl-2-picrylhydrazyl (DPPH) free radicals, and xanthine oxidase inhibition (XOI) activities. The results showed that *C. asiatica* has the most potent antioxidant activity (TPC = 72.09. mg/100. g DW; DPPH = 72.99. µg/ml; XOI = 87.68. µg/ml) as compared to *H. bonariensis* (TPC = 28.55. mg/100. g DW; DPPH = 22.43. µg/ml; XOI = 32.23. µg/ml) and *H. sibthorpioides* (TPC = 56.23. mg/100. g DW; DPPH = 37.86. µg/ml; XOI = 14.73. µg/ml). © 2014.

Author keywords

[C. asiatica](#) [H. bonariensis](#) [H. sibthorpioides](#) [HPLC-DAD-ESIMS](#)

Indexed keywords

 Engineering controlled terms: [Chemical analysis](#) [Liquid chromatography](#)
[1,1-diphenyl-2-picrylhydrazyl](#)
[Anti-oxidant activities](#)
[C. asiatica](#)
[Chemical characterization](#)
[H. bonariensis](#)
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