

## Accelerated dereplication of crude extracts using HPLC-PDA-MS-SPE-NMR: Quinolinone alkaloids of *Haplophyllum acutifolium*

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### Abstract

Direct hyphenation of analytical-scale high-performance liquid chromatography, photo-diode array detection, mass spectrometry, solid-phase extraction and nuclear magnetic resonance spectroscopy (HPLC-PDA-MS-SPE-NMR) has been used for accelerated dereplication of crude extract of *Haplophyllum acutifolium* (syn. *Haplophyllum perforatum*). This technique allowed fast on-line identification of six quinolinone alkaloids, named haplacutine A-F, as well as of acutine, haplamine, eudesmine, and 7-nonylquinolin-8(1H)-one. Acutine and haplacutine E, isolated by preparative-scale HPLC, showed moderate antiplasmodial activity with IC<sub>50</sub> values of 2.17 ± 0.22 μM and 3.79 ± 0.24 μM, respectively (chloroquine-sensitive *Plasmodium falciparum* 3D7 strain). © 2009 Elsevier Ltd. All rights reserved.

### Reaxys Database Information

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### Author keywords

Dereplication; Haplacutines A-F; *Haplophyllum perforatum*; *Haplophyllum acutifolium*; HPLC-PDA-MS-SPE-NMR; NMR; Rutaceae

### Indexed Keywords

**EMTREE drug terms:** alkaloid; chloroquine; quinolone derivative

**EMTREE medical terms:** animal; article; chemical structure; chemistry; drug effect; drug resistance; high performance liquid chromatography; Iran; isolation and purification; nuclear magnetic resonance; *Plasmodium falciparum*; Rutaceae

**MeSH:** Alkaloids; Animals; Chloroquine; Chromatography, High Pressure Liquid; Drug Resistance; Iran; Molecular Structure; Nuclear Magnetic Resonance, Biomolecular; *Plasmodium falciparum*; Quinolones; Rutaceae

*Medline is the source for the MeSH terms of this document.*

**Species Index:** *Haplophyllum*; *Plasmodium falciparum*; Rutaceae

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