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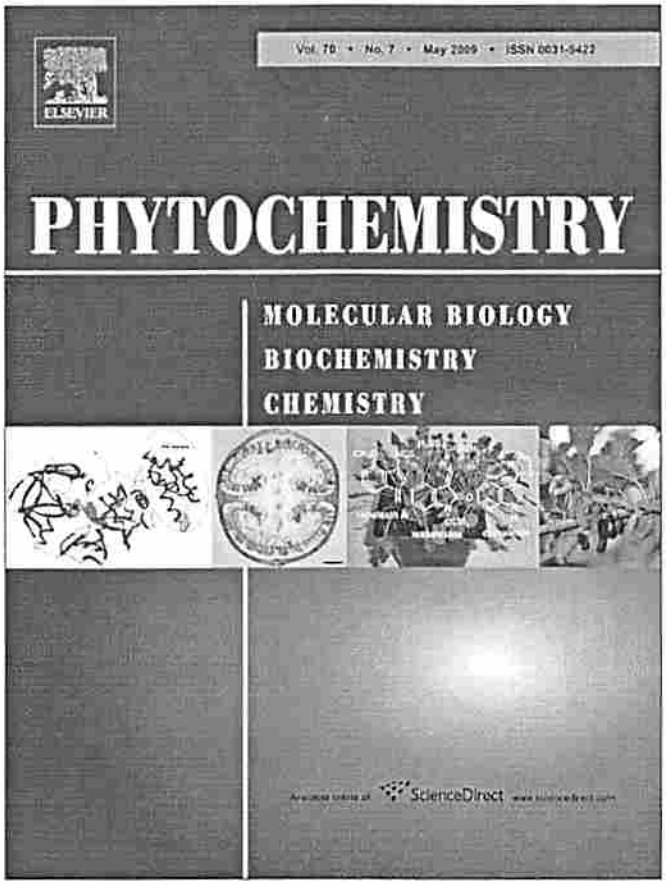

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Antiplasmodial and other constituents from four Indonesian *Garcinia* spp.

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Isoxanthochymol
Garcihombronane D
3β-Hydroxy-5-glutinen-28-oic acid
Antiprotozoal activity
Plasmodium falciparum

ABSTRACT

Phytochemical investigations of four *Garcinia* spp. from Indonesia, i.e. *Garcinia griffithii* T. Anderson, *Garcinia celebica* L., *Garcinia cornea* L. and *Garcinia cymosa* K. Schum (Clusiaceae), have resulted in the isolation of a xanthone, 1,5-dihydroxy-3,6-dimethoxy-2,7-diprenylxanthone, 1,7-dihydroxyxanthone, isoxanthochymol, β-sitosterol-3-*O*-β-D-glucoside and stigmasterol-3-*O*-β-D-glucoside from the stem bark of *G. griffithii*; friedelin and 3β-hydroxy-23-oxo-9,16-lanostadien-26-oic acid or garcihombronane D from leaves of *G. celebica*; 23-hydroxy-3-oxo-cycloart-24-en-26-oic acid and epicatechin from stem bark of *G. cornea*; (±)-morelloflavone, morelloflavone-7-*O*-β-D-glucoside or fukugiside, the triterpene 3β-hydroxy-5-glutinen-28-oic acid and canophyllol from stem bark of *G. cymosa*. The xanthone and garcihombronane D displayed a selective activity against *Plasmodium falciparum*; isoxanthochymol and the triterpene β-hydroxy-5-glutinen-28-oic acid a broad but non-selective antiprotozoal activity.

1. Introduction

Garcinia species are known to contain a wide variety of oxygenated and prenylated xanthones, as well as polyisoprenylated benzophenones such as the guttiferones (Nilar et al., 2005). Xanthones show a wide range of biological and pharmacological properties, e.g. antioxidant, antiinflammatory, antimicrobial and cytotoxic activities (Minami et al., 1994; Mbwambo et al., 2006; Chin et al., 2008). Guttiferones have been reported as anti-HIV, trypanocidal and cytotoxic agents (Gustafson et al., 1992; Williams et al., 2003; Merza et al., 2006; Vlietinck et al., 1998; Cos et al., 2008).

Garcinia griffithii (locally named "kandis gajah" in Indonesia) is a medium sized tree ocurring in South East Asia. The polyisoprenylated benzophenones cambogin or isoxanthochymol, and guttiferone I, as well as the xanthones 1,7-dihydroxyxanthone, 1,3,6,7-tetrahydroxyxanthone, 1,3,5,6-tetrahydroxyxanthone, and the bixanthone griffipavixanthone, have been isolated and identified from *G. griffithii* (Nilar et al., 2005; Xu et al., 1998). However, it should be noted that the name guttiferone I has also been applied for different compounds obtained from *Garcinia virgata* (Merza et al., 2006) and from *Garcinia humilis* (Herath et al., 2005). No phytochemical investigations have been carried out yet on *Garcinia celebica*, *Garcinia cornea* and *Garcinia cymosa*. In our continuing phytochemical investigation of *Garcinia* plants found in Indonesia, the isolation and structure elucidation from *G. griffithii*, *G. celebica*, *G. cornea* and *G. cymosa* of a new xanthone, a new triterpene, isoxanthochymol, some unusual triterpenes and some common compounds, as well as the antiparasitic activity of the new xanthone, the new triterpene and some other constituents are reported here.

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