Anti-Cancer and Immunostimulatory Activity of Chromones and Other Constituents from *Cassia petersiana*

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Phytochemical investigation of *Cassia petersiana* Bolle leaves afforded four new compounds, including two chromone derivatives, 7-acetonyl-5-hydroxy-2-methylchromone (petersinone 1, 1) and 7-(propan-2′-ol-1′-yl)-5-hydroxy-2-methylchromone (petersinone 2, 2), two benzoic acid derivatives, 5-methyl-3-(propan-2′-on-1′-yl) benzoic acid (petersinone 3, 3) and 5-(methoxymethyl)-3-(propan-2′-ol-1′-yl) benzoic acid (petersinone 4, 4), and glyceryl-1-tetracosanoate (6), in addition to the known compound sistosterol-3-β-d-glycoside (5). The structures of these compounds were determined by comprehensive NMR studies, including DEPT, COSY, HMQC, HMBC, MS and IR.

Compounds 1, 2, 5 and 6 were tested for antioxidant, anti-cancer and immunostimulatory properties. The biological investigations indicated that compound 6, among others, possessed the highest anti-cancer activity against hepatocellular carcinoma, immunoproliferative activity via induction of T-lymphocytes and macrophage proliferation, anti-inflammatory activity as indicated by NO inhibition, and antioxidant activity against DPPH radicals. Moreover, compound 5 was the most effective cytotoxic compound against breast carcinoma and stimulated a consistent immunoproliferative effect on lymphocytes and macrophages combined with strong NO inhibitory activity, while compound 1 was promising as immunoproliferative agent and may act as anti-inflammatory agent as a consequence of its NO inhibitory activity.

\textbf{Key words:} *Cassia petersiana*, Anti-Cancer, Immunostimulatory