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Phytochemical and anti-infective studies of *Markhamia platycalyx* leaves

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From the phytochemical study of the *Markhamia platycalyx* (Baker) Sprague leaves, twelve compounds were isolated viz., phytol (1), *n*-octacosanoic acid (2), tormentic acid (8) and *β*-sitosterol-3-O-(6'-O-heptadecanoyl)-*β*-D-glucopyranoside (10) were isolated for the first time in the genus *Markhamia*. Additionally, six compounds were reported for the first time in the species viz., *β*-sitosterol (3), ursolic acid (5), oleanolic acids (6), pomolic acid (7), 2-epi-tormentic (9), *β*-sitosterol-3-O-*β*-D-glucopyranoside (11) and Finally, two more compounds were previously reported; stigmasterol (4) and acteoside (12). The structure elucidation was based on comparison of their chemical, physical, chromatographic properties, spectral data (MS and NMR) with literature in addition to direct comparison with authentic compounds. The antimicrobial and antiprotozoal activities of the total ethanolic extract (TEE), its fractions as well as the isolated compounds were tested. The TEE was the most effective exhibiting the lowest MIC (1.0 µg/mL) against *E. coli*. Moreover, ursolic acid, acteoside and epi-tormentic acid were the most potent against P. aeruginosa with MICs 1.2 µg/mL, 1.6 µg/mL and 2.3 µg/mL, respectively. Additionally, the epi-tormentic acid and acteoside showed the lowest MICs (1.2 µg/mL) against *Candida glabrata*. All the above results are higher than standard drugs. While, the secondary phase assay of the petroleum ether fraction revealed IC_{50} of 26760 ng/mL against *P. falciparum* D_6 and 22430 ng/mL against *P. falciparum* W_2. Additionally, the dichloromethane fraction was the most active against *L. donovani* amastigotes in THP1 with 86% inhibition. Finally, the epi-tormentic acid and *β*-sitosterol-3-O-*β*-D-glucopyranoside did not exhibit any effect on hepatitis C virus.

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