Bioactive constituents from Harpephyllum caffrum

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Abstract

Background: The leaf ethanol extract of Harpephyllum caffrum Bernh. has evidenced medicinal value due to its hepatoprotective activity. It demonstrated inhibitory effects on test standard microbes approximated to 40% the potency of ofloxacin and fluconazole. The same extract evidenced in vitro cytotoxicity on human cell lines, liver carcinoma HEPG2, larynx carcinoma HEP2, and colon carcinoma HCT116 cell lines when compared to doxorubicin. Materials and Methods: Fractionation of the leaf ethanol extract led to the isolation of the polyphenols, ethyl gallate, and quercetin-3-O-rhamnoside, a hydrocarbon, hendecane, the fatty acid ester, methyl linoleate, and four triterpenoids, betulonic acid, 3-acetyl-methyl betulinate, lupenone and lupeol for the first time, in addition to the previously reported phenol acids and flavonoids, gallic acid, methyl gallate, quercetin, kaempferol, kaempferol-3-O-rhamnoside, kaempferol-3-O-galactoside, apigenin-7-O-glucoside, and quercetin-3-O-arabinoside. Results: The ethanol extract of the fruit of the genetically related Rhus coriaria L., known as sumac, afforded protocatechuic acid, isoquercitrin, and myricetin-3-O-α-L-rhamnoside from the fruits for the first time, in addition to the previously reported phenol acids and flavonoids, gallic acid, methyl gallate, kaempferol, and quercetin. Conclusion: The leaf ethanol extract of H. caffrum Bernh. exhibited variable antiinflammatory, analgesic, and antipyretic activities, besides the hepatoprotective, in vitro cytotoxic and anti-microbial activities.

Key words: Harpephyllum caffrum

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