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Antiproliferative effect of phenolic glucosides isolated from *Philodendron bipinnatifidum* on HepG2 cells

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Abstract

Cytotoxic activity of methanol extract of the leaves of *Philodendron bipinnatifidum* and its three phenolic compounds was determined using the SRB Assay on human tumor cell line (Hepatocyte generation 2, HepG2). Chromatographic fractionation of the methanol extract led to isolation of three new phenolic compounds named *p*-hydroxyphenyl ethyl *β*-D-glucopyranosyl (1→2),*β*-D-glucopyranosyl (1→3),4-*O-trans*caffeoyl-*O*-*α*-L-rhamnopyranoside (**1**), 2-phenyl ethyl 4-*O-trans*-caffeoyl-*O*-*α*-L-rhamnopyranoside (**2**) and 2,3dimethoxy-phenylethyl-4-*O-trans*caffeoyl-*β*-D-glucopyranosyl (**3**). The structure of these compounds was established on the basis of NMR and mass spectral data. This preliminary study indicates promising potential of *P. bipinnatifidum* as a potential source of new anticancer compounds.

Keywords: *Philodendron bipinnatifidum;* phenolic, glucosides; HepG2

Introduction

Araceae is a family of monocotyledonous flowering plants in which flowers are borne on a type of inflorescence called a spadix. This family contains of 110 genera and over 2000 species. Saponins, flavonoids, polyphenols, cyanogenic compounds and alkaloids are secondary metabolites characteristic of this family (Williams et al 1981; Pangi, 1982; Kite et al 1997). *Philodendron* is a large genus of flowering plants in the Araceae family; it consists of close to 900 species. *Philodendron* species can be found in many diverse habitats in the tropical Americas and west India. *Philodendron bipinnatifidum* is widely cultivated in Egypt gardens as ornamental plants. There is little information on its chemical constituents in literature; β–sitosterol, polyprenoid hexaprenol and 6-β–hydroxy stigmast-4-en-3-one were isolated from *Philodendron imbe* (Feitosa and Bezerra 2007). Plant–derived phenolic compounds have received considerable attention in treatment of many health problems as antioxidant and anticancer agents (Cai et al 2004).

