

## Chemical constituents and biological activities of *Callicarpa maingayi* leaves

### ABSTRACT

Plants have an extensive diversity of natural phytochemicals that are used as a source of medicine. In this study the methanolic leaf extract of *Callicarpa maingayi* together with its increasing polarity soluble fractions hexane (Hex), dichloromethane (DCM), ethyl acetate (EtOAc), n-butanol (n-BuOH), and aqueous (Aq) fractions were examined on antioxidant, acetylcholinesterase (AChE), tyrosinase, and  $\alpha$ -glucosidase inhibitory activities. Liquid chromatography-diode array detection-electrospray ionization-tandem mass spectrometry (LC-DAD-ESIMS/MS) was used to analyze the most bioactive fractions (EtOAc and n-BuOH). A total of 20 compounds were tentatively identified in these two active fractions. Forsythoside B, acteoside, isoacteoside, isocampneoside II, apigenin 7-O-rutinoside and kaempferol 3-sulfate-7-arabinopyranoside were identified by comparing with the reference standard. Other compounds including cistanoside F, apigenin 6-C-glucoside-8-C-glucoside,  $\alpha$ -OH-forsythoside B, campneoside II, rhamnazin 3-O-rutinoside, campneoside I, eukovoside, acacetin diglucuronide, acacetin 7-O-glucuronide,  $\alpha$ -OH-poliumoside, poliumoside as well as 3 isomers of 2-acetylacteoside were tentatively identified based on their UV spectra and MS/MS data. All of the compounds were reported from this species for the first time. The results have indicated the chemical constituents of *C. maingayi* that contributed to the biological activity and thus, it may have potential application toward the development of nutraceutical and medicinal preparations.

**Keyword:** *Callicarpa maingayi*; LC-DAD-ESIMS/MS; Antioxidant; Antiacetylcholinesterase; Antityrosinase;  $\alpha$ -glucosidase inhibitory