

Antioxidant Activity of Friedelin, Eudesmic Acid and Methyl-3,4,5-Trimethoxybenzoate from *Tapinanthus bangwensis* (Engl., and K. Krause) [Loranthaceae] Grown in Nigeria

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Abstract : The search for new natural anti-oxidants has grown tremendously over the years because reactive oxygen species (ROS) production and oxidative stress have been linked to a large number of human degenerative diseases, such as cancer, cardiovascular diseases, inflammation, and diabetes. *Tapinanthus bangwensis*, a parasitic plant commonly known as mistletoe belonging to the Loranthaceae family, is mostly employed traditionally to treat inflammation, cancer, diabetes, and hypertension to mention a few. In this study, air-dried pulverized leaves and stem of *Tapinanthus bangwensis* were successively extracted with n-hexane, ethyl acetate, and methanol to give the corresponding crude extracts. The extracts were purified by column chromatography and high-performance liquid chromatography to give the isolated compounds. Structural elucidation was done using mass spectrometry, Fourier transform infra-red, 1D and 2D NMR spectroscopy. The antioxidant activity of the compounds was evaluated using 2,2-diphenyl-1-picrylhydrazyl (DPPH) and ascorbic acid as standard. Three compounds; Friedelin, Eudesmic acid (3,4,5-trimethoxybenzoic) and Methyl-3,4,5-trimethoxybenzoate were isolated from the extracts of *Tapinanthus bangwensis*. Friedelin was isolated from the ethyl acetate extract of the stem while the two other compounds were isolated from the methanol extract of the leaves. The percentages of free radical scavenging activities of the compounds are as follows: Friedelin, 73.69%, methyl-3,4,5-trimethoxybenzoate, 79.33% and eudesmic, 87.68% anti-oxidant activity which were quite comparable to 93.96% given by ascorbic acid. We are reporting, to our best knowledge, for the first time the occurrence of friedelin and eudesmic acid in *Tapinanthus bangwensis*. The high anti-oxidant activity of these compounds supports the use of this plant in the management of diabetes and hypertension as they will be useful in combating complications arising from the disease.

Keywords : column chromatography, eudesmic acid, friedelin, *Tapinanthus bangwensis*

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