

Spectroscopic Identification of New Ellagitannins and a Trigalloyl-glucosylkaempferol from an Extract of *Euphorbia cotinifolia* L. with Antitumour and Antioxidant Activity

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From an extract of leaves and small branches of *Euphorbia cotinifolia* L., 17 polyphenols were isolated including two new ellagitannins and a trigalloyl-glucosylkaempferol. Based on extensive spectral data (UV, ESI-MS, ¹H NMR, DEPT and 1D/2D NMR) and chemical studies, their structures were characterized as 1-*O*-galloyl-3,6-hexahydroxydiphenoyl- β -D-B_{1,4}-glucopyranose (**5**), 1-*O*-galloyl-3,6-valoneoyl- β -D-B_{1,4}-glucopyranose (**6**), and kaempferol 3-*O*-(2'',3'',6''-tri-*O*-galloyl)- β -D-glucopyranoside (**13**). Biological evaluation indicated that the 80% aqueous methanol extract (AME), chloroform extract (CE), and some pure compounds have potent scavenging activity in the DPPH assay with SC₅₀ values lower than that of ascorbic acid, especially **5**, **7–9**, and a mixture of hyperin 6''-gallate (**11**) and isoquercitrin 6''-gallate (**12**). Moreover, using the 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2*H*-tetrazolium bromide (MTT) cell viability assay, **6** and **8** exhibited the highest inhibition of human hepatocellular carcinoma cells (Hep-G2), while AME, CE, **5**, **7**, **9**, and the mixture of **11** and **12** were found to be moderate growth inhibitors according to their IC₅₀ values. In addition, AME, **5**, and **8** exhibited significant antiproliferative activity against colon carcinoma cells (HCT-116); however, CE and the other examined compounds displayed moderate to low antitumour activity against HCT-116 cells.

Key words: *Euphorbia cotinifolia*, Ellagitannins, Antitumour and Antioxidant Activity