In vitro Antioxidant and Antiproliferative Activities of Flavonoids from *Ailanthus excelsa* (Roxb.) (Simaroubaceae) Leaves

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The present study aimed to investigate the chemical composition, and the antioxidant and antiproliferative activities of *Ailanthus excelsa*, a plant used in Egyptian traditional medicine. Chromatographic separation of a methanol extract of *A. excelsa* leaves yielded four flavones, namely apigenin (**1**), apigenin 7-*O*-*b*-glucoside (**2**), luteolin (**3**), and luteolin 7-*O*-*b*-glucoside (**4**), and seven flavonols, namely kaempferol (**5**), kaempferol 3-*O*-Ŭarabinoside (**6**), kaempferol 3-*O*-*b*-galactoside (**7**), quercetin (**8**), quercetin 3-*O*-Ŭarabinoside (**9**), quercetin 3-*O*-*b*-galactoside (**10**), and quercetin 3-*O*-rutinoside (**11**). The *A. excelsa* extract tested in different *in vitro* systems (DPPH and FRAP assays) showed significant antioxidant activity. The potential antiproliferative activity of the *A. excelsa* extract and isolated flavonoids against five human cancer cell lines such as ACHN, COR-L23, A375, C32, and A549 was investigated *in vitro* by the SRB assay in comparison with one normal cell line, 142BR. The extract exhibited the highest inhibitory activity against C32 cells with an IC_{50} value of 36.5 μg ml^{-1}. Interesting activity against COR-L23 was found with **10** (IC_{50} value of 3.2 μg ml^{-1}). Compounds **1** and **3** inhibited cell growth in both amelanotic melanoma and malignant melanoma cells.

Key words: Ailanthus excelsa Flavonoids, Antioxidant, Antiproliferative