Anticancer and Antioxidant Tannins from *Pimenta dioica* Leaves

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Two galloylglucosides, 6-hydroxy-eugenol 4-*O*-(6′-*O*-galloyl)-*β*-D-$^4C_1$-glucopyranoside (**4**) and 3-(4-hydroxy-3-methoxyphenyl)-propane-1,2-diol-2-*O*-(2′,6′-di-*O*-galloyl)-*β*-D-$^4C_1$-glucopyranoside (**7**), and two *C*-glycosidic tannins, vascalaginone (**10**) and grandininol (**14**), together with fourteen known metabolites, gallic acid (**1**), methyl gallate (**2**), nilocitin (**3**), 1-*O*-galloyl-4,6-(*S*)-hexahydroxydiphenoyl-(*α*/*β*)-D-glucopyranose (**5**), 4,6-(*S*)-hexahydroxydiphenoyl-(*α*/*β*)-D-glucopyranose (**6**), 3,4,6-valoneoyl-(*α*/*β*)-D-glucopyranose (**8**), pedunculagin (**9**), casuariin (**11**), castalagin (**12**), vascalagin (**13**), casuarinin (**15**), grandinin (**16**), methylflavogallonate (**17**) and ellagic acid (**18**), were identified from the leaves of *Pimenta dioica* (Merr.) L. (Myrtaceae) on the basis of their chemical and physicochemical analysis (UV, HRESI-MS, 1D and 2D NMR). It was found that **9** is the most cytotoxic compound against solid tumour cancer cells, the most potent scavenger against the artificial radical DPPH and physiological radicals including $ROO^{\bullet}$, $OH^{\bullet}$, and $O_2^{-\bullet}$, and strongly inhibited the NO generation and induced the proliferation of T-lymphocytes and macrophages. On the other hand, **3** was the strongest NO inhibitor and **16** the highest stimulator for the proliferation of T-lymphocytes, while **10** was the most active inducer of macrophage proliferation.

Key words: Pimenta dioica, Galloylglucosides, Antioxidant and Anticancer