Anticancer and Antioxidant Tannins from *Pimenta dioica* Leaves

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Two galloylglucosides, 6-hydroxy-eugenol 4-O-(6′-O-galloyl)-β-d-4C1-glucopyranoside (4) and 3-(4-hydroxy-3-methoxyphenyl)-propane-1,2-diol-2-O-(2′,6′-di-O-galloyl)-β-d-4C1-glucopyranoside (7), and two C-glycosidic tannins, vascalaginone (10) and grandinimol (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), methyl-flavogallonate (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•, OH•, and O2•, 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