Anti-Proliferative and Antioxidant Constituents from *Tecoma stans*

Mohamed Marzouk[a], Amira Gamal-Eldeen[b,*], Mona Mohamed[c], and Mortada El-Sayed[c]

[a] Chemistry of Tannins and Proteins Department, National Research Centre, Dokki, Cairo, Egypt
[b] Cancer Biology Group, Department of Biochemistry, National Research Centre, Dokki 12622, Cairo, Egypt. Fax: +20233709 31. E-mail: aeldeen7@yahoo.com
[c] Department of Medicinal Chemistry, Theodor Bilharz Research Institute, Giza, Egypt

* Author for correspondence and reprint requests

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Phytochemical investigation of *Tecoma stans* Juss. fruits and flowers resulted in the isolation of a new phenylethanoid, 2-(3,4-dihydroxyphenyl)ethyl-2-*O*-[6-deoxy-α-L-mannopyranosyl-4-(3,4-dihydroxyphenyl)-2-propenoate]-β-D-glucopyranoside (**3**), and a novel monoterpene alkaloid, 5-hydroxy-skytanthine hydrochloride (**8**), along with eleven known compounds; 4-*O*-*E*-caffeoyl-α-L-rhamnopyranosyl-(1′→3)-α/β-D-glucopyranose (**1**), *E*/*Z*-acetoside (**2**), isoacetoside (**4**), rutin (**5**), luteolin 7-*O*-β-D-neohespridoside (**6**), luteolin 7-*O*-β-D-glucopyranoside (**7**) and sucrose (**9**) were isolated from the fruits, while luteolin 7-*O*-β-D-glucuronopyranoside (**10**), diosmetin 7-*O*-β-D-glucuronopyranoside (**11**), diosmetin 7-*O*-β-D-glucopyranoside (**12**), diosmetin 7-*O*-β-D-glucuronopyranoside methyl ester (**13**) and acetoside (**2**) were isolated from the flowers. Their chemical structures have been determined on the basis of chemical and spectroscopic evidences. Biological investigations of a *T. stans* fruits extract and compounds **1**, **2**, **4**, and **8** indicated that the extract, **1**, **2**, and **4** possessed a strong scavenging activity to DPPH, peroxyl and hydroxyl radicals. Unlike **4**, which potentially induced NO generation in bacterial lipopolysaccharide-stimulated raw murine macrophage (RAW 264.7), the extract, **1**, **2**, and **8** significantly inhibited the NO generation. The extract, **2** and **4** exhibited a cytotoxic effect on human hepatocarcinoma cells (Hep-G2), while the extract, **2** and **8** were potent growth inhibitors of human breast carcinoma cells (MCF-7). **1** and **2** were remarkable growth inducers of human lymphoblastic leukemia cells (1301), whereas the extract, **2**, and **8** stimulated the macrophage proliferation rate. Taken together, the novel compound **8** is effective as anti-proliferative agent against MCF-7 cells and as NO inhibitor, whereas **2** exhibited multi-functional properties as antioxidant and anti-proliferative agent against both solid tumor cell lines Hep-G2 and MCF-7 cells

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