Isolation of New Cytotoxic Metabolites from *Cleome droserifolia* Growing in Egypt

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The sulforhodamine B (SRB) assay was used to assess the cytotoxicity of the aqueous (AqEx) and ethanolic (AlEx) extracts, respectively, of the aerial parts of *Cleome droserifolia* (Forssk.) Del. against two human cancer cell lines, breast (MCF7) and colon (HCT116) adenocarcinoma. AqEx exhibited higher cytotoxic activity, thus its four subfractions, namely *n*-hexane (HxFr), chloroform (ClFr), ethyl acetate (EtFr), and *n*-butanol (BuFr) fractions, were also tested. Purification of the more active ClFr and EtFr yielded nine compounds. Six terpenoids, guai-7(11),8-diene (**C$_1$**), 1-hydroxy-guai-3,10(14)-diene (**C$_2$**), 18-hydroxy-dollabela-8(17)-ene (**C$_3$**), (24*E*)-stigmasta-5,8-dien-3*b*-ol (**C$_4$**), teucladiol [1Ŭ,5*b*-guai-10(14)-ene-4*b*,6*b*-diol] (**C$_5$**), and buchariol (4,10-epoxy-6Ŭ-hydroxyguaiane) (**C$_6$**), were isolated from ClFr and three flavonol glycosides, isorhamnetin-3-*O*-*b*-D-glucoside (**F$_1$**), quercetin-3`-methoxy-3-*O*-(4``-acetylrhamnoside)-7-*O*-Ŭ-rhamnoside (**F$_2$**), and kaempferol-4`-methoxy-3,7-*O*-dirhamnoside (**F$_3$**), were isolated from EtFr. Compounds **C$_3$** and **F$_2$** are new in nature. The isolated compounds were identified using various spectroscopic methods (UV, IR, ^{1}H NMR,^{13}C NMR, HMQC, HMBC, and COSY). Compounds **C$_1$**, **C$_3$**, **F$_2$**, and **F$_3$** showed significant cytotoxic activities against the two tested cell lines comparable to those of the anticancer drug doxorubicin®. The new compound **C$_3$** was the most active as it had the lowest IC$_{50}$ values, (1.9 ∂ 0.08) and (1.6 ∂ 0.09) μg/ml corresponding to 6.5 and 5.4 μM, against MCF7 and HCT116 cells, respectively.

Key words: Cytotoxic, *Cleome droserifolia*, Flavonols, Terpenes