



Research article

Chemical and biological characterize of some species from Mahdadh Dhahab region

Salwa Ali Kawashty*^{1,2}, Hanaa Mahmoud Soliman^{1,3}, Nahla A. Boquellah¹

¹Department of Biology, Faculty of Sciences, Taibah University, Al Madinah Al Munawwarah, P.O. Box: 344, Saudi Arabia.

²Department of Phytochemistry and Plant Systematics, National Research Centre, Dokki, 12311 Giza, Egypt.

³Department of Geology, Faculty of Science, Cairo University

Abstract

The present study aims to detect the flavonoid and phenolic constituents of six selected species belonging to different families represented in Mahd adh Dhahab region as well as screen their antioxidant and cytotoxic activities. These are *Senna alexandrina* Mill. and *Vachellia nilotica* (L.) P.J.H.Hurter & Mabb. (Fabaceae), *Vitex trifolia* L. (Lamiaceae), *Moltkiopsis ciliata* (Forssk.) I. M. Johnston (Boraginaceae), *Salicornia europaea* L. (Chenopodiaceae) and *Acanthus spinosus* L. (Acanthaceae). The phenolic and flavonoid profiles were carried out using HPLC technique. In addition, *in vivo* antioxidant activity was performed using DPPH assay while the cytotoxicity was summarized by MTT test. Thirty three compounds were detected using HPLC technique and comparison with standards. They were detected as 14 phenolic acids and 19 flavonoids. The flavonoids were represented as five C-glycosyl flavones, five flavones, six flavonols and three flavanones. The DPPH assay showed moderate activities with % activity 40.67 ± 0.8 , 45.23 ± 0.34 and 43.55 ± 1.1 for *M. ciliata*, *V. nilotica* and *A. spinosus*, respectively and weak activity for the rest investigated plants. *V. nilotica* showed significant cytotoxicity against breast adenocarcinoma (MCF-7) cells, lung carcinoma (A549) and colon carcinoma with % inhibition 96.3 ± 0.7 , 97.2 ± 0.24 , 96.1 ± 0.2 , respectively. Among the studied species, *V. nilotica* showed the highest content of phenolic acids and flavonoids as well as a highly antioxidant and anticancer activities.

Key words: Mahd Ad Dahab region, HPLC, flavonoids, phenolics, Antioxidant, cytotoxicity.

***Corresponding Author:** Salwa Ali Kawashty, Department of Biology, Faculty of Sciences, Taibah University, Al Madinah Al Munawwarah, P.O. Box: 344, Saudi Arabia.