



Cytotoxic Activity of Methanol Extract of *Cynanchum acutum* L. Seeds on Human Cancer Cell Lines

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SUMMARY. *Cynanchum acutum* L., Asclepiadaceae, has been used in the Egyptian folk medicine. HPLC analysis of the extract allowed the identification of 17 phenolic acids and 19 flavonoids. Quantitative analysis of some phenolic acids and flavonoids revealed the presence of vanillic acid (0.781 mg/100 g), benzoic acid (0.590 mg/100 g), pyrogallol (0.325 mg/100 g), catechin (0.32 mg/100 g), acacetin-neorutinoside (1.04 mg/100 g), hesperidin (3.48 mg/100 g), and kaempferol-3-glucoside-2''-p-coumaroyl (5.12 mg/100 g) as major compounds in the extract. The cytotoxic effect of the extract was investigated against colon cancer (Caco-2), breast cancer (MCF-7), hepatocellular carcinoma (HepG-2), lung cancer (A549), prostate cancer (PC3), human epithelioma cells (Hep-2) and cervical carcinoma (Hela) cell lines. Cell viability was quantitated by MTT assay and IC₅₀ was estimated. The IC₅₀ values against Caco-2, MCF-7, HepG-2, A549, PC3, Hep-2 and Hela cell lines were determined 3.2, 2.7, 2.3, 2.5, 2.7, 2.6, and 6.6 mg/mL, respectively. Therefore, *Cynanchum acutum* L. seeds could be considered as a potential chemotherapeutic agent in cancer treatment in future.

RESUMEN. *Cynanchum acutum* L., Asclepiadaceae, se ha utilizado en la medicina popular egipcia. El análisis por HPLC del extracto permitió la identificación de 17 ácidos fenólicos y 19 flavonoides. El análisis cuantitativo de algunos ácidos fenólicos y flavonoides reveló la presencia de ácido vainílico (0,781 mg/ 100 g), ácido benzoico (0,590 mg/ 100 g), pirogalol (0,325 mg/ 100 g), catequina (0,32 mg/ 100 g), acancetinarutinósido (1,04 mg/ 100 g), hesperidina (3,48 mg/ 100 g) y kaempferol-3-glucósido-2''-p-cumaroil (5,12 mg/ 100 g) como principales compuestos en el extracto. El efecto citotóxico del extracto se investigó contra el cáncer de colon (Caco-2), cáncer de mama (MCF-7), carcinoma hepatocelular (HepG-2), cáncer de pulmón (A549), cáncer de próstata (PC3), células de epitelioma humano (Hep-2) y carcinoma de cuello uterino (Hela) La viabilidad celular se cuantificó mediante el ensayo MTT y se calculó la CI50. Se determinaron los valores de IC₅₀ contra las líneas celulares Caco-2, MCF-7, HepG-2, A549, PC3, Hep-2 y Hela de 3.2, 2.7, 2.3, 2.5, 2.7, 2.6 y 6.6 mg/mL, respectivamente. Por lo tanto, las semillas de *Cynanchum acutum* L. podrían considerarse como un potencial agente quimioterapéutico en el tratamiento del cáncer en el futuro.

KEY WORDS: *Cynanchum acutum* L. seeds, cytotoxicity, human cancers, HPLC-UV analysis, MTT assay.

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