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Manal Mortady Hamed et al., J Forensic Toxicol Pharmacol 2018, Volume 7
DOI: 10.4172/2325-9841-C1-009

World Congress on
Pharmacology and Chemistry of Natural Compounds
June 18-19, 2018 Paris, France

The biological activity of *Conocarpus erectus* extracts and their applications as cytotoxic agents

Manal Mortady Hamed[1], Gehan Mohamed Safwat[2] and Aseel Talaat Helmy[2]
[1]Theodor Bilharz Research Institute, Egypt
[2]Modern Sciences and Arts University, Egypt

Essential oils are found to have multiple active components which can show *in vitro* cytotoxic action against various cancerous cell lines. This study reports the *in vitro* cytotoxic effects of the essential oil from *Conocarpus erectus* (Combretaceae) growing wild in Egypt. Water-distilled essential oil of *C. erectus* was examined for its cytotoxic effects using a modified brine shrimp and MTT assays. Fresh leaves aerial part of *C. erectus* was subjected to hydro-distillation using a Clevenger-type apparatus volatile to obtain its volatile oil. Cytotoxicity of the essential oil was measured against Hep G2 cancer cells and brine shrimps larva. The essential oil 50% cytotoxic concentrations were found to be 33 µg/ml and 8.7 µg/ml against brine shrimp and human liver carcinoma Hep G2 cell line, respectively; thus the volatile oil displayed good cytotoxic action against the human tumor cell line. Moreover, *C. erectus* methanol extract was very effective; it exhibited cytotoxic activity against brine shrimp larva within IC50 value of 15 µg/ml. The investigation from GC Mass, led to the identification of 12 constituents, representing 97.53% of the total oil, of which the major chemical constituents were identified by gas chromatography mass spectrometry as being rich in 3-(2,2-dimethylpropylidene)bicyclo[3.3.1]nonane-2,4-dione (67.12%), decanoic acid derivatives (7.77%), 22-tritetracontanone (6.03%), 1-octanol, 2-butyl (5.51%) and oleic acid (4.33%). This is the first report on anticancer potential and separation of essential oils from *C. erectus*. The findings of this study necessitate the need for further consideration of this essential oil in anti-neoplastic chemotherapy.

Biography

Manal Mortady Hamed is a Professor of Medicinal Chemistry at Theodor Bilharz Research Institute, Egypt. She had completed her PhD in Organic Chemistry at Cairo University. She is a Member of Egyptian Society of Natural Toxins. She had published 30 research papers. She is an Editorial Board Member of an international journal The Public Science Framework and The Journal of Harmonized Research Publications.

manalayman90@yahoo.com

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