World Academy of Science, Engineering and Technology
International Journal of Pharmacological and Pharmaceutical Sciences
Vol:15, No:09, 2021

A contribution to Phytochemical and Biological Studies of Ailanthus Alitssima Swingle Cultivated in Egypt

Authors : Ahmed Samy Elnoby

Abstract : Ailanthus altissima native to Asia which belongs to the family Simaroubaceae was subjected to phytochemical screening and biological investigations. Phytochemical screening revealed the presence of carbohydrates, tannins, sterols, flavonoids and traces of saponins. In addition, quantitative determination of phenolics and flavonoid content were performed. The antimicrobial activity of methanolic extract of the leaves was determined against gram-positive, gram-negative bacteria in addition to fungi using a modified Kirby-Bauer disc diffusion method that was compared with standard discs ampicillin which acts as an antibacterial agent and amphotericin B which acts as an antifungal agent. A high potency was observed against gram-positive bacteria mainly staphylococcus aureus, gram-negative bacteria mainly Escherichia coli and showed no potency against fungi mainly Aspergillus flavus and candida albicans. On the other hand, the antioxidant activity of the extract was determined by 1, 1-diphenyl-2- diphenyl-2-picryl-hydrazil (DPPH). A very low potency was shown by using DPPH for the antioxidant effect so IC50 = 0 ug/ml, IC90 =0 ug /ml and remark gave 47.2 % at 100 ug/ml which is very weak. Cytotoxic activity was determined by using MTT assay (3-4, 5-Dimethylthiazol-2-yl)-2, 5-Diphenyltetrazolium Bromide) against MCF7 (Human Caucasian breast adenocarcinoma) cell line. A moderate potency was shown by using MCF7 cell line for cytotoxic effect so LC50= 90.2 ug/ml, LC90=139.9 ug/ml and the remark gave 55.2% at 100 ug/ml which is of moderate activity so, Ailanthus altissima can be considered to be a promising antimicrobial agent from natural origin.

Keywords : Ailanthus altissima,TLC,HPLC,anti-microbial activity,antifungal activity,antioxidant,cytotoxic activity
Conference Title : ICPPS 2021 : International Conference on Pharmacy and Pharmaceutical Sciences
Conference Location : London, United Kingdom
Conference Dates : September 23-24, 2021