

Screening the Pharmacological Effects of Ephedra alata Extract

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Abstract :

Ephedra alata is perennial tough shrub plant that grows in Palestine and other regions. It is used often in folk medicine for the treatment of various diseases. In this project, the presence of the major classes of phytochemical compounds (like flavanoids, alkaloids, phytosteroids, phenolic compounds, volatile oils and tannins) was confirmed followed by some pharmacological screening. It was shown in hamsters animal model that topical application of Ephedra alata extract improved the healing of skin wound and burn ulcers. In addition, the systemic administration of the plant extract exerted some anti-inflammatory effects, but this was associated with mild hepatotoxicity. Moreover, it was shown in-vitro that the organic, but not the aqueous, extract of Ephedra alata possesses an antimicrobial activity against the Gram positive bacteria Staphylococcus aureus (MIC 12.5 mg/ml), Gram negative bacteria Escherichia coli (MIC 12.5 mg/ml) and Candida albicans yeast (MIC 25 mg/ml). In addition, the aqueous extract of the plant showed a dose-dependent anthelmintic activity against a round worm model. In conclusion, Ephedra alata is rich in phytochemical compounds that might serve different therapeutic uses.