

ABSTRACT

The chief goal of the present research was to investigate the *in-vitro* antioxidant and antimicrobial potential of various organic fractions of the plant *Celtis eriocarpa* Decne. Initially the plant extract was taken in 50 % methanol+ 50 % water and then the extract was further processed to formulate its various other fractions using *n*-hexane, ethyl acetate and *n*-butanol at three different stages. The radical scavenging powers of the prepared solvent-soluble fractions were analyzed by following four diverse methodologies named: ferric reducing antioxidant power (FRAP) assay, 1, 1-Diphenyl-2-picrylhydrazyl (DPPH) antioxidant activity, total antioxidant activity and Folin-Ciocalteu reagent assay for determining the total phenolic content of the plant. From the results obtained it was inferred that S2 Ethyl Acetate fraction, at concentration of 125 $\mu\text{g/ml}$, exhibited the highest value of % inhibition of DPPH ($83.26 \pm 0.60\%$). The IC_{50} of this fraction was $58.32 \pm 0.72 \mu\text{g/ml}$, relative to the butylated hydroxytoluene (BHT) which is $\text{IC}_{50} = 11.25 \pm 0.78 \mu\text{g/ml}$. On the other hand, this fraction manifested the highest FRAP value ($78.98 \pm 0.5 \mu\text{g TE/mL}$), the highest total antioxidant activity (0.29 ± 0.22) as well as highest total phenolic contents ($57.42 \pm 0.28 \mu\text{g GAE/g}$) in comparison to the other fractions. Thus the inference was deduced that the S2 Ethyl Acetate fraction of *Celtis eriocarpa* Decne. has potentially dynamic radical scavenging components. Antimicrobial screening against two bacterial strains viz *E.coli* DH5 α and *Agrobacterium tumefaciens* revealed that the plant also possesses strong antimicrobial potential against these strains and could also be active against various other microbial strains.