ABSRACT

The antimicrobial, antioxidant potential and phytochemical tests of the parts of *Himalrandia tetrasperma* Roxb. and *Wendilandia exertia* (Roxb.) DC. were investigated by using various techniques. The zone of inhibition and MIC assay were carried out by using the agar well diffusion method and broth dilution. The results displayed that the both plants have the significant antibacterial potential as compared to the standard discs. The maximum antibacterial potential was recorded by the leaves chloroform extract of *H.tetrasperma* 91.66±0.4mm against *E.coli* and minimum zone of inhibition was showed by aqueous extracts of leaf against *E.coli* 10±0.6mm as the standard discs, i.e., Ampicillin and Cephradine value of zone of inhibition 23±0.6mm and 24±1.5mm respectively. Methanolic extract of *W.exertia* bark showed maximum antibacterial potential against *P.aeruginosa.* Other plant extracts of leaf and seed, also showed significant results against other bacterial strains such as *E.coli, S.aureus* and *B.subtils*. Similarly the antifungal potential of the both plants were examined. The maximum antifungal potential was showed by the methanolic extract of bark against *F.solani* 49±0.6mm and methanolic extract of seed against *A.niger* 43.33±1.6mm whereas Methanolic extract of *W.exertia* bark showed best potential against *A.niger* and *F.solani,* i.e., 45±0.6mm and 30±1.6mm as compared to standard antifungal disc i.e., Itraconale 10±1.8mm and Voriconazole 40±2.0mm. MIC assay of *H.tetrasperma* bark methanolic extracts showed significant value, i.e., 0.04±0.01 at 0.8 mg/ml against *E.coli.* 0.04±0.03% at 0.5mg/ml was showed by stem extract of *W.exertia* against *P.aeruginosa*. For fungi *H.tetrasperma* methanolic extract value of MIC was significant, i.e., 0.02±0. 9%. Methanolic leaves extracts of *H.tetrasperma* against *A.niger* showed 0.03±0.6% values. Leaves extracts of *W.exertia* show potential at 0.9mg/ml against *F.solani.* Antioxidant potential was determined by using five methods and highest value of %DPPH was observed by *H.tetrasperma* bark 95.43±2.5 at 500 concentrations in petroleum ether extract. % DPPH observed by *W.exertia* stem extract of methanol at 1000 concentration 94.26±0.8. Maximum values of Total antioxidant activity 1.198±1.21by methanol bark extract of *H.tetrasperma* 1.12±0.1was by *W.exertia* Petroleum ether extract of bark. Total phenolic content (TPC) of *H.tetrasperma* bark extract of Petroleum ether 1.702±0.3and of *W.exertia* leaves extract of chloroform 1.37±0.9. Highest FRAP value of *H.tetrasperma* bark extract of methanol, i.e., 65.71±0.03. *W.exertia* seed extract of Petroleum ether 61.2±1.2 µm/ml. Highest FTC value was

displayed of methanolic extract bark of *H.tetrasperma*, i.e., 61.55±0.5µm/ml and of *W.exertia* aqueous extract of leaves, i.e., 61.5±0.3 µm/ml.

An additional antidiabetic and analgesic activities were carried out and it was noticed that plant methanolic extracts were potent antidiabetic and analgesic compounds. The results revealed that analgesic activity was estimated by two tests acetic acid induced writhing and hot plate test both plant extracts showed analgesic potential. Bark extract of the *W.exertia* showed 9.7±0.5 mg/kg. The highest value of reduced glucose level is expressed by the methanolic extract of the *H.tetrasperma* leaves at 24 hours 188.67±1.3 mg/kg.