ABSTRACT

The leaves parts of the Fluggea leucopyrus were successively extracted with ethyl acetate and methanol. The crude extracts were subjected to phyto-chemical analysis. The ethyl acetate and methanol extracts were positive for the presence of flavonoids.

The ethylacetate extract was subjected to adsorption column chromatography and eluted in different solvent with various combinations. Column chromatography results in the isolation of flavonoids with RF value of (0.79) respectively which was confirmed by the physical analysis and chemical tests. The isolated compound was further subjected to TLC to confirm the flavonoid. The flavonoid dissolved in methanol and sterilized at low temperature. The sticky mass was further analyzed by spectral data IR, NMR, LC-MS and CHN analysis to elucidate the structure of flavonoid. The chemical name of the compound is undecyl 3 hydroxy - benzoate (Leucopyrosinol FL-1).

Leucopyrosinol exhibited significant in-vitro antioxidant activity when compared to ethylacetate in super oxide, hydroxyl radicals, lipid peroxidation and DPPH radical methods. In all the methods ascorbic acid was used as standard drug. There was dose dependent and significant % reduction was found to be 83.15±1.57, 69.52±1.06, 41.21±0.92 mg for super oxide radical, 76.94±2.26, 52.88±1.06, 43.80±1.17mg for hydroxyl raical, 84.25±2.39, 53.61±1.02, 42.79±1.09 mg for lipid peroxidation, 87.85±2.05, 67.74±1.04, 52.88±0.99 mg for DPPH radical respectively.

The anticancer efficacy against Ehrlichs Ascitic Carcinoma has provided evidence of major anticancer activity for leucopyrosinol. Single or multiple
intraperitoneal (i.p.,) dose of drug provided high level activity against subcutaneous (s.c.,) grafted EAC, significantly increase in life span. There was a dose-effect relationship and the increase in life span (ILS). The ILS% was 14.18, 22.00 and 60.15 % for the single dose and 3.40, 33.75 and 71.00 % for the multiple doses at the dosage of 100, 150 and 200 mg/kg body weight respectively. There was reduction in the tumor volume of mice treated with Leucopyrosinol. The tumor volume of control animal on the 35th day of tumor injection was 2.0±0.59 ml, whereas the compound treated group it was 1.75±0.47, 1.74±0.82, and 0.49±0.98 ml for the single dose and 1.25±0.60, 0.75±0.43, and 0.25±0.83 ml for the multiple dose respectively for the doses of Leucopyrosinol mentioned earlier.

Leucopyrosinol and ethyl acetate extract (crude) appeared to have Significant anti-inflammatory activity with all the three doses at different time intervals (i.e. 1 hour, 2 hour & 4 hour) and significant percent reduction in oedema volume with all the 3 doses were noted as lecoryposinol 100 mg/kg (6%, 41.93%, 46.61%, 50.25%), 150 mg/kg (13%, 47.31%, 54.88%, 55.64%), 200 mg/kg (15%, 55.91%, 57.89%, 69.94%), and ethyl acetate (crude) 100 mg/kg (6%, 10.75%, 12.7%, 19.69%) 150 mg/kg (13%, 34.14%, 38.4%, 59.59%), 200 mg/kg (15%, 39.71%, 43.60%, 61.66%), at four time intervals respectively. Leucopyrosinol is highly significant when compared to ethyl acetate extract.

Analgesic activity of leucopyrosinol and ethylacetate showed a dose dependent significant increased in basal reaction time at different doses of leucopyrosinol, ethylacetate and standard drug diclofenac sodium at 20 mg/kg over a period of 0, 15, 30, 45 minutes. Leucopyrsinol increased the basal reaction time from (4.00±0.26, 4.50±0.34, 4.50±0.02, 4.71±0.30) at 100 mg/kg, (4.67±0.215, 5±0.226,
(33±0.216, 83±0.30) at 150 mg/kg and (4.67±0.217, 33±0.218, 17±0.319, 33±0.33) 200 mg/kg whereas ethyl acetate showed (4.00±0.26, 4.20±0.02, 4.20±0.16, 4.60±0.30) at 100 mg/kg, and (4.67±0.21, 5.20±0.001, 5.40±0.13, 6.20±0.31) at 150 mg/kg, (4.67±0.21, 6.10±0.001, 6.90±0.20, 8.10±0.24) at 200 mg/kg. Leucopyrosinol is highly significant when compared to ethyl acetate.

The leucopyrosinol and ethyl acetate at a concentration of 100 μg, 150 μg exhibited antibacterial and antifungal activities, against one or the other organisms in dose dependent manner. The plant extracts have exhibited considerable activity on the tested fungi. Leucopyrosinol produced good antibacterial activity against gram +ve and gram –ve bacteria and fungal strains when compared to ethyl acetate crude extract.