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Phytochemical and pharmacological investigations *Thysanolyna maxima* (Roxb.) Kuntze available in Bangladesh

Nazia Hoque[1, 3], Md. Hossain Sohrab[2], Dr. Md. Sohel Rana[3]

[1] Department of Pharmacy, East West University, Aftabnagar, Dhaka, Bangladesh.

[2] Pharmaceutical Sciences Research Division, Bangladesh Council of Scientific and Industrial Research, Dhaka, Bangladesh.

[3] Centre for Natural Product Research, Department of Pharmacy, Jahangirnagar University, Savar, Dhaka, Bangladesh.

The objective of the study was to evaluate the presence of different phytoconstituents and investigate *in vitro* bioactivities of petroleum ether, chloroform and methanol extract of *Thysanolaena maxima* (Roxb.) Kuntze available in Chittagong Hill tracts of Bangladesh. Phytochemical screening was conducted using specific standard procedure. Antioxidant activity of the extracts was evaluated using DPPH radical scavenging assay and reducing power assay. Determination of total phenolic and flavonoid content was also carried out. Antibacterial and cytotoxic activities were investigated using disc diffusion method and brine shrimp lethality bioassay respectively. Phytochemical analysis revealed the absence of alkaloids and presence of terpenoids, carbohydrates, tannins, flavonoids, saponins and glycosides in all extracts of *T. maxima* in varying amount. The methanol extract of *T. maxima* showed the highest DPPH radical scavenging activity and highest phenolic content (IC50 value for DPPH is 36.94 ± 0.62 µg/ml and total phenolic content is 74.39 ± 2.87 mg/g, Gallic acid equivalents) compared to the pet ether and chloroform extract. In antibacterial study, all the extracts showed mild to moderate activity against 5 gram positive and 6 gram negative bacteria with zone of inhibition ranging from 7 mm to 16 mm. In brine shrimp lethality bioassay, the LC50 values for petroleum ether, chloroform and methanol extract were 579.05 ± 78.08 µg/ml, 386.92 ± 80.47 µg/ml and 494.29 ± 104.82 µg/ml. The results indicate that *T. maxima* could be a very potent source of natural radical scavenger and antimicrobial agents.

Biography

Nazia Hoque is a PhD student of Centre of Natural Product Research, Department of Pharmacy, Jahangirnagar University, Dhaka, Bangladesh. She has completed her MS in Pharmaceutical Science and B. Pharm from the same institution. She is now working as a Senior Lecturer in the Department of Pharmacy, East West University, Dhaka, Bangladesh. She is an expert on studies on antioxidant, cytotoxic, antimicrobial, antidiabetic, antinociceptive, sedative, anxiolytic and anti-inflammatory activities of Bangladeshi medicinal plants. Currently she is conducting her PhD research on isolation and characterization of bioactive compounds from ethno-pharmacologically important plants of Bangladesh and their associated endophytic fungi.

nzh@mail.ewubd.edu