

IN-VITRO ANTI-OXIDANT AND ANTI-DIABETIC EVALUATION OF *PREMNA HERBACEA* ROXB

Rantumoni Sharma, Jayashree Dutta and M C Kalita

Rantumoni Sharma, Jayashree Dutta and M C Kalita

Premna herbacea Roxb (family- Verbenaceae), locally known as Keradaphini (Bodo) and Matiajam (Assamese), is an undershrub 7-20 cm high, with sessile leaves and the basal pairs lies flat on the surface. Leaves of *P herbacea* was collected from Holtugaon reserve forest under Manas National Park, Assam, India. The plant was authenticated in the GUBH. The GPS of Holtugaon forest division, from where the plant was collected is 81° 13' N and – 41° 89' E. The *in vitro* hypoglycaemic evaluation of the collected plant material i.e. alpha amylase and alpha glucosidase inhibition was determined. The anti-oxidant property for their free radical scavenging property was accessed by DPPH method. The plant material was further subjected to preliminary phytochemical screening using standard protocol of Harborne and Trease *et al.*, 1998. The leaf methanol extract of *P herbaceae* demonstrated alpha amylase inhibition with IC₅₀ 29.71 µg/mL compared to acarbose 344.83 µg/mL. While, chloroform extract, petroleum benzene and ethyl acetate extract demonstrated no inhibition of enzyme alpha amylase. In case of alpha glucosidase, the methanol extracts demonstrated the highest inhibition with minimum IC₅₀ value of 382 µg/mL compared to acarbose 397.06 µg/mL followed by the ethyl acetate extract IC₅₀ 409.83 µg/mL. On the other side, chloroform and petroleum benzene demonstrated slight inhibition with high IC₅₀ value compared to acarbose. The aqueous extract of *Premna herbacea* demonstrated the presence of many bioactive secondary metabolites like terpenoid, steroid, phenol, flavonoids, saponin, tannin, coumarin and sugar. However, alkaloid was not detected in *Premna herbacea*. *P herbaceae* demonstrated anti-oxidant property with IC₅₀ value of 4.84 µg/mL compared to ascorbic acid 5.61 µg/mL. The results obtained showed that the plant sample is rich with therapeutic properties, which could be a futuristic alternative for prevailing medicines for anti-oxidant and anti-diabetic.

BIOGRAPHY

Rantumoni Sharma has completed his MSc in Botany (2016) from Gauhati University, India. Currently he is working in a DBT project under the guidance of Prof Mohan Chandra Kalita, Department of Biotechnology, Gauhati University, and he has two publications in reputed journals till now including four poster presentations and one oral presentation.

rantu.rms20@gmail.com



Note: