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Preliminary studies of antivenom and antioxidant activities of *Gymnema sylvestre* R.Br. leaf extracts.

Nuzhat Ara Jamal[1], Kanchan Saha[2] & Sumana Sarkhel[2]*

[1]Centre for Life Science, Vidyasagar University, Midnapore, Paschim Medinipur-721 102, West Bengal, India

[2]Department of Human Physiology, Vidyasagar University, Midnapore, Paschim Medinipur-721 102, West Bengal, India

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Medicinal plants are rich in biologically active phytoconstituents and therapeutic compounds that have wide applications in pharmaceutical industry. The ameliorative actions of such phytochemicals could be attributed to the presence of dietary fibre, detoxifying mediators, neuropharmacological agents, antioxidants, anticancer mediators, *etc.* In the present study, we investigated the *in vivo* antivenom potential of *Gymnema sylvestre* R. Br leaf extract (GSE)in experimental animal model. The study also investigated the antioxidant potential (*in vitro)* of GSE (aqueous and methanolic) along with qualitative phytochemical constituent tests. Phytochemical tests were performed by qualitative method to detect the presence of different phytoconstituents within the leaf. Different quantitative tests (DPPH scavenging, H_2O_2 scavenging, Ferric reducing activity) were performed. The IC_{50} value was determined from the different concentration. To detect the venom neutralization effects, *in vitro* PLA_2 and *in vivo* lethality, haemorrhage, edema neutralization studies were performed. Aqueous and methanolic extracts of the leaf (400 mg/kg and 100 mg/kg body wt.*)* provided protection against the lethal dose of venom and showed a successful anti-hemorrhagic and edema neutralization activity against *Daboia russelli* venom (DRV). *In vitro* PLA_2 neutralization activity of the leaf showed up to 3-fold protection. Methanolic extract exhibited the significant results in both qualitative phytochemical analysis as well as *in vitro* antioxidant studies. The results specify that the leaves of *Gymnema sylvestre* R.Br. possess antioxidant as well as antivenom potential and could act as a free radical inhibitor

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