

Plumbago Zeylanica Linn. – A potent Anticancer Agent – Extraction and Phytochemical Screening †

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Abstract: Because of the budgetary constraints and toxicity of traditional treatment, experts worldwide are focusing more on plant-based herbal treatments for different diseases that are best suited, safe, and less expensive. Therefore, the time has come to look for plant-based herbal treatments like plumbagin to treat various diseases, including cancer. The present work deals with the pharmacognostical and preliminary phytochemical studies on the roots of *Plumbago zeylanica* Linn. The plant *Plumbago Zeylanica* roots were obtained from Ayush Life Elements, Himachal Pradesh and authenticated by CSIR – National Institute of Science Communications and Information Resources, Raw Herbarium and Museum, New Delhi (NISCAIR- RHMD) vide reference no. NISCAIR-RHMD/consult/2020/3702-03 dated 09/11/2020. The roots were powdered, and extraction was done using various solvents; Petroleum ether, Chloroform, Ethyl acetate, Ethanol: Methanol (90:10), and Methanol. The yield of the prepared extract was calculated. FTIR (Fourier transform infrared spectroscopy) was also performed to know the chemical composition and physical state of the sample. The preliminary phytochemical screening of roots of *P. zeylanicum* revealed no microbial contamination. The calculated yield was compared to check the consistency and amount. The maximum yield was calculated with methanol extract was 1.184 w/w (amount of extract 2.96 gm). Plumbagin is one such phytochemical (obtained from plant *Plumbago Zeylanica* Linn from the family of Plumbaginaceae) with immense anti-oncogenic medicinal and therapeutic properties. *In vitro* and *in vivo* studies of plumbagin have shown anti-oncogenic properties in almost all types of cancer of the body. The solvents played an important role in the extraction of total solid and phytochemical composition. The results of preliminary phytochemical screening of roots of *P. zeylanicum* reveal maximum yield was with methanol extract and ethanol:methanol 90:10.

Keywords: Plumbagin; *Plumbago Zeylanica* Linn; phytochemical; medicinal properties.

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Conflicts of Interest

The authors declare no conflict of interest.