

**COMPARATIVE PHARMACOGNOSTIC ASPECTS OF**  
***Rauvolfia serpentina* (L.) Benth. ex Kurz**  
**AND IT'S SUBSTITUTE**  
***Rauvolfia canescens* L. (APOCYNACEAE)**

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By

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## Abstract

*Rauvolfia serpentina* (L.) Benth. ex Kurz (Apocynaceae), a rare, therapeutically important medicinal plant, is often adulterated by materials of *Rauvolfia canescens* L. (Apocynaceae). However, adulteration of *R. serpentina* with *R. canescens* without scientifically proven data on important quality standards might adversely affect the therapeutic properties of the herbal drugs. Therefore, the present study was undertaken to establish a comparative quality standards on morphological, anatomical, phytochemical, physicochemical and cytotoxicity activity of *R. serpentina* and *R. canescens* by using established protocols.

Results demonstrated that *R. serpentina* could be distinguished from *R. canescens* by comparing polymorphological characters and anatomical characters. Major phytochemical groups were present in leaves, stems and roots of both plants. Results of Thin Layer Chromatogram (TLC) exhibited the highest number of common spots in leaf extracts followed by stem and root extracts of both *R. serpentina* and *R. canescens*. The presences of higher brine shrimp toxicity in root extracts of both plant species scientifically validate the use of root in medicinal purposes in Ayurveda and traditional systems of medicine in Sri Lanka. Information generated through the present study could be effectively used for the quality control and standardization process of different parts of *Rauvolfia serpentina* and *Rauvolfia canescens* in order to upgrade the Sri Lankan pharmacopeia. The presence of certain similarities in major phytochemical groups of *R. serpentina* and *R. canescens* justifies the use of *R. canescens* as a substitute for *R. serpentina* in traditional systems of medicine in Sri Lanka, which needs to be confirmed after further clinical trials.

**Keywords:** Apocynaceae, *Rauvolfia serpentina*, *Rauvolfia canescens*, Polymorphological Characters, Phytochemical, Physicochemical