



## Catharanthus roseus L. (*Periwinkle*): An Herb having Significant Phytochemical and Pharmacological Action with Benefits on Health

A calyx is made up of five pieces that can be linked together to form a tube or can be separated. The flowers are huge and spectacular and are usually seen in bunches. Usually, the base of them is a tube made up of five petals. Five stamens are connected to one another.

The two-part seed capsule might be found inside the blossom or outside of it. Seeds vary greatly; they can be big and woody (*Allamanda*) or little with a hairy tuft (*Nerium*).

Simple leaves, a milky sap, a five-part calyx, clusters of flowers, five big petals connected at the base, and five stamens are typical characteristics of members of this family. Most parts of many members of this plant family are poisonous. Each plant of this family (*Apocyanaceae*) possesses different medicinal behavior [9].

### Origin and Distribution

Native to Madagascar. Widely naturalized in numerous areas. Especially in dry coastal regions. Grown commercially in Australia, Africa, India, and southern Europe for therapeutic purposes. Cultivated practically everywhere in the tropical and subtropical world as an ornamental plant [10].

### Morphology

The plant *Catharanthus roseus* is a herbaceous or sub-herbaceous evergreen. This herbaceous plant, which is endemic to Madagascar, can reach heights of 80cm to 1m and produces pink, purple, or white flowers all year long [11]. The leaves are grouped in opposite pairs and are oval to oblong, 2.5–9.0cm long and 1-3.5cm broad. They are glossy, green, hairless, and have a light midrib and a short, 1-1.8cm long petiole. Two common cultivars of *C. roseus* are called after their bloom colors: one produces the

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having anti-ulcer qualities. The leaves of the *C. roseus* plant have been found to have anti-ulcer effects in test animals with ulcers.

Vincamine's neuroprotective and cerebral-vasodilatory properties are widely recognized [33].

### **Bio-pesticidal property**

The effectiveness of *Catharanthus roseus* solvent extracts against the larvae of the gramme pod borer *Helicoverpa armigera* was evaluated biologically. It was found that *C. roseus* leaf extract fractions in ethyl acetate worked well as biopesticides [34].

### **Cytotoxic activity**

The anticancer benefits of the *Vinca rosea* stem and leaves are derived from the alkaloids vinblastin and vincristine, which have growth-inhibitory effects on cancers in animals. Vinblastin, vincristine, and its derivatives, such as deacetyl-vinblastin amide, mostly obstruct cancer cell division. They have generally been proven to be successful in treating both malignant and non-malignant platelets as well as platelets linked to disorders. A *vinca rosea* alkaloid has been found to prevent the formation of new blood vessels, hence encouraging the growth of tumors. While vincristine leukemia is treated with vinblastin, hooking's disease and choriocarcinoma are treated with vinblastin in children [35].

### **Alzheimer disease**

*Vinca rosea* contains alkaloids called vinpocetine, which have a range of effects to enhance memory and brain function [36]. These actions are often advantageous in cases of Alzheimer's disease. In clinical trials for dementia and stroke, vinpocetine was administered at a well-tolerated dose of up to 60 mg per day, with no discernible side effects [37].

### **Some side effects of *Vinca rosea***

During its application, this plant exhibits several negative consequences. We are aware that the VLB has strong vesicants, gastrointestinal toxicity, extravasation damage, and bone marrow suppression. It is not recommended that this medication be taken by a patient with a

