

## Pharmacognostic Account of Roots of *Valeriana wallichii* DC

\*Sonawane Akshay J, \*Takate Shrikant, <sup>1</sup>Sherkar Mahesh R, <sup>1</sup>Dhokane Sitaram T

Department of Pharmacy, S.V.N.H.T.'S College of B.Pharmacy, Shrishivajinagar (Rahuri factory), Tal-Rahuri, Dist-Ahmednagar, MS, India-413706

### ABSTRACT

*Valeriana wallichii* DC of family Valerianaceae is reported in traditional system of medicine an indigenous medicinal plant used in the treatment of constipation, insomnia, epilepsy, neurosis, anxiety and as a diuretic, hepatoprotective, analgesic and cytotoxic. To explore the pharmacognostic account this plant was selected. The herb is an erect perennial, growing to four feet with pinnate, divided leaves and cluster of small white or pink flowers. It has massive root system and short rhizomes. The roots are hairy, spindly mass and are collected in the autumn from two year old plants. The roots of *Valeriana wallichii* contain alkaloids, tannins, flavonoids, saponin glycosides in the methanolic extract and it was used for Pharmacognostical, Phytochemical evaluation.

**KEYWORDS:-** diuretic, hepatoprotective, analgesic and cytotoxic.

### INTRODUCTION

Synonym: Valerian, Indian valerian, Valerian Jatamansi, Taggar

Biological source: It consists of dried rhizomes, stolons and roots of *Valeriana wallichii*

Family: Valerianaceae

Geographical source: Western Himalayas, Kashmir, Afghanistan, Pakistan

Chemical Constituent:

1] Alkaloids:- Chatinine and Valerine

2] Volatile oil: Borneol formate, Borneol Acetate, Camphene Isovalerianate, Valetrate

Macroscopical Characters:

1] Colour: Rhizomes: Dull yellowish brown

Root: yellowish brown

2] Odour: Characteristics, Penetrating

3] Taste: Bitter

Material and methods:

Collection: It has been collected from local market of Sanjivani Aushadhalaya, Shambhaji Nagar, Chinchwad, Pune.

Raw material analysis: The drug material was subjected to Qualitative and Quantitative test which includes a) Extractive value, Loss on drying, Foreign organic matter,



Fig.no:-1 Whole plant of *Valeriana wallichii*



Fig.no:-2 Roots of *Valeriana wallichii*

A) Ash value and Loss on drying :-

Table 1: Ash value and Loss on drying of *Valeriana wallichii*

Sr.No	Parameter	Practical value (% w/w)
1.	Total ash	4
2.	Acid insoluble ash	3.5
3.	Water soluble ash	2.00
4.	Loss on drying	6.2



Fig.no:-3 Assembly of Soxhlet Extraction

B}Extractive value

Table 2: Alcohol and Water soluble Extractive value of *Valeriana wallichii*

Sr.No	Parameter	Practical value(% w/w)
1	Alcohol soluble extractive value	8.4
2.	Water soluble extractive value	6.9

A)Extraction

Table 3 : Extraction of *Valeriana wallichii*

Sr.No	Type of extract	Yield %	Colour	Nature
1	Methanol	8.6	Brown	semisolid

B)Phytochemical test:- using the methanolic extract the following test were performed

Table 4 -Phytochemical test of *Valeriana wallichii*

Sr.No	Test	Observation	Inference
A	Test for carbohydrate		
1.	Benedicts test	Green coloration	Reducing sugar present
B	Alkaloids		
1.	Hagers test	Yellow ppt	Alkaloid present
C	Tannins		
1.	Fecl <sub>3</sub> +test solution	Blue- black color	Tannin present
D	Test for flavonoids		
1.	Residue+lead acetate solution	Yellow color ppt	Flavonoid present
E	Test for saponin glycosides		
1.	Foam test	Persistent foam	Saponin glycoside present

TLC of Methanolic extract



(Fig 4:-Valerenic Acid)



( Fig 5:-Alkaloid)



( Fig 6:-Saponi)

Thin layer chromatography

Table 5 Thin layer chromatography of methanolic extract of *Valeriana wallichii*

Sr.No	Solvent system	Phytochemical constituent	Observation	Retention factor	Inference
1	Chloroform:Methanol: (9:1)	Alkaloids	Reddish brown spots by spraying Dragondraff's reagent	0.25 0.69 0.87	Alkaloids present
2	Hexane:ethyl acetate:glacial acetic acid (65:35:0.5).	Valerenic acid	Dark blue colour in uv at 366 nm	0.48	Valerenic acid present
3.	Butanol :Acetic acid :water( 60:15:25)	Saponin glycosides	Brown Spots by spraying anisaldehyde	0.21,0.48	Saponin present

Ash value, Extraction, b] Phytochemical screening c] TLC.

**RESULT AND DISCUSSION**

Physicochemical chemical constant:

Foreign organic matter:-Foreign organic matter was found to be 0.46 with the limit of specified by WHO

Phytochemical studies

**CONCLUSION**

The root of *Valeriana wallichii* contains alkaloids tannins Oflavonoids saponin glycosides in the methanolic extract and it was used for Pharmacognostical, Phytochemical evaluation.

**REFERENCES**

1. F.Subhan ,N.Karim, M.Ibrar , Anti inflammatory activity of methanolic and aqueous extracts of *Valeriana wallichii* DC rhizome, Pak.J.PL.Sci,2007, 13, 103-108.
2. Wagner H, Jurcic K, Schaette R. Comparative studies on the sedative action of *Valeriana* extracts, valepotriates and their degradation products, *Planta medica*, 1980, 37,358–362
3. Hendricks, H. *et al.*: Pharmacological screening of valereianal and some other components of essential oil of *Valeriana officinalis*. *Planta Med.* 1981, 42, 62-8.
4. Heinerman, John: Heinerman's Encyclopedia of Fruits, Vegetables and Herbs.Parker Publishing Company, New York. 1988. ISBN No. 0-13-385840-5 .
5. Hendricks, H. *et al.*: Pharmacological screening of valerenal and some other components of essential oil of *Valeriana officinalis*. *Planta Med.* 1981, 42, 62-8
6. African pharmacopoeia, 1st ed. Lagos, Organization of African Unity Technical & Research Commission, 1985.
7. Morazzoni P, Bombardelli E. *Valeriana officinalis*: traditional use and recent evaluation of activity. *Fitoterapia*, 1995, 66:99–112.
8. Youngken HW. Textbook of pharmacognosy, 6th ed. Philadelphia, Blakiston,1950.
9. Farnsworth, NR. ed. NAPRALERT database. Chicago, University of Illinois at Chicago, IL, March 15, 1995
10. Bruneton J. Pharmacology, phytochemistry, medicinal plants. Paris, Lavoisier 1995.
11. Jackson BP, Snowden DW. Atlas of microscopy of medicinal plants, culinary herbs and spices. Boca Raton, FL, CRC Press, 1990