

HAIR GROWTH ACTIVITY OF *Hibiscus rosa-sinensis* AND *Glycyrrhiza glabra***D. Shirode^{1*}, M. Tailang², A.K. Singhai¹ and A. Singh¹**¹Sagar Institute of Research & Technology - Pharmacy, Bhopal - 462 041 (India)²S.L.T. Institute of Pharmaceutical Science, Guru Ghasidas University, Bilaspur - 495 001 (India)

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ABSTRACT

The Hair growth activity of *Hibiscus rosa-sinensis* & *Glycyrrhiza glabra* were evaluated on Albino rats. The Extract of *H.rosa-sinensis* (petroleum ether & benzene extract) & *Glycyrrhiza glabra* (alcohol Extract) respectively 0.2%w/v & 2%w/v exhibit maximum hair growth activity as compared to standard group animals as treated with minoxidil solution (2%w/v).

Key words: Hair growth, *Hibiscus rosa-sinensis* and *Glycyrrhiza glabra*.

There are about 50,00,000 hairs on the human body & 98 percent of them are on the general body surface & about 1,00,000-1,20,000 are on the head. Population density of normal adult scalp hair is reported to be between 225 hair cm² on average with variable range of 175-300 hair cm². The rate of hair growth has been reported to be varying with sites. Scalp & chin have highest rate of growth. The growth rate of auxillary's hair is nearly same. The growth rate for hair on body surface is about 0.2 mm/day⁷. There are two main types of hair is Terminal hair & vellus hair. A third type hair is Lanugo hair⁸. Various materials have been used as the hair growth promoters, such as benzyl nicotinate, tincture of capsicum, placenta extract, panthothenic acid, estradiol estrone, brown rice, horse chestnut, rosemary, palme humilis etc^{1,2,3,5,9}. *Hibiscus rosa-sinensis* & *Glycyrrhiza glabra* are traditionally known to posses hair promoting activity.

H. rosa-sinensis, family *Malvaceae*, is a moderate to large sized spreading tree, widespread in lands of greater part of India. The root is valuable in cough. The leaves are considered emollient & aperient. The infusion of petal is given as demulcent & in fever. The flowers are household remedy in the Philippines Island. Internally they are prescribed in the form of decoction in bronchial catarrh as a bechie & sudorific^{1,2,3,5,10}.

G. glabra, family *Legumionseae*, grows in the sub-tropical & warm temperate regions of the world. It is used for asthmatic coughs, as an antispasmodic & ulcer remedy. It is most useful herb hence also known as "The grandfather of herbs"^{1,2,3,10}.

It is claimed that hair growth activity of *H. rosa-sinensis* (leaf) and *Glycyrrhiza glabra* (root) is speculative but has not yet been documented. In this study we have attempted to investigate the hair growth activity of *H. rosa-sinensis* leaf and *Glycyrrhiza glabra* root.

Plant material

The leaves of *H. rosa-sinensis* & roots of *Glycyrrhiza glabra* were collected from garden. *H. rosa-sinensis* were shade dried & pulverized in a mechanical grinder & stored in a closed container for further use. Similarly, the root of *Glycyrrhiza glabra* were collected from market & pulverized in mechanical grinder & stored in closed container for further use.

Preparation of extract

The powdered root of *Glycyrrhiza glabra* were extracted with alcohol (at 60-80°C) in a Soxhlet extractor for 25-30 cycle. On evaporation of alcohol in vaccum, residue was obtained and was stored in a desiccator. The leaves of *H. rosa-sinensis* were extracted with petroleum ether (at 46-60°C) in a Soxhlet extractor for 25-30 cycle. On evaporation of alcohol in a vaccum a greenish Colored residue was obtained & was stored in a desiccator. Similar process was followed for benzene extract & CCl₄ extract but for benzene extract: Temp. 80-90°C, Time (each cycle) 20 min. for CCl₄ extract: Temp. 45-50°C, time (each cycle) 20 min.

Formulations

Glycyrrhiza glabra extract 2% w/v solution was prepared. Each ml of formulation contain

Table - 1

S. No.	Ingredients	Qty. % w/v
1.	Bees wax	0.35
2.	Mineral oil	3.75
3.	Paraffin wax	0.1
4.	Lime water(fresh)	5.8
5.	Petroleum ether extract	0.2
6.	Perfume	q.s.
7.	Water	q.s.

Glycyrriza glabra extract 20mg & absolute alcohol I.P.40% v/v according to standard drug Morr Morrforte, while hair creams were prepared for *H. rosa-sinensis* extract by following formula^{6,7}.

Test animal

Studies were carried out on male albino rats weighing 90-110gm which were placed in cages with wire net floors in controlled room temperature and humidity, They were provided with food & water. All studies were carried out by using five rats in each group. Firstly, all the animals were shaved. After that drug was applied according to each groups, twice a day, on particular area of animal. After 30 days, In the area on which drug was applied. the thickness, length & weight of hair of circular area of 2.5 cm/dm was observed.

The hair growth activity of the *H. rosa-sinensis* (leaf) extract & *Glycyrrhiza glabra* (root) extract against standard group has been shown in

Table - 2: Comparative hair growth of test animals

S.No.	Condition	Control Group Animal (Without Drug)	Standard Group Animal (Minoxidil solution 2% w/v)	Test Group Animal Alcohol Extract (Glycirrhiza solution 2% w/v)	Hibiscus rosa-sinensis		
					Petroleum Ether Extract (Hair Cream 0.2% w/v)	Benzene Extract (Hair Cream 0.2% w/v)	CCl ₄ Extract (Hair Cream 0.2% w/v)
1.	Length	1.38 mm	2 mm	2.75 mm	3.25mm	4.25 mm	1.38 mm
2.	Thickness	0.02 mm	0.02 mm	0.04 mm	0.06 mm	0.06 mm	0.02mm
3.	Weight (in 2.5 cm/dm)	1.5 mg	2 mg	2.5 mg	3 mg	3 mg	2 mg

Table 2. It showed significant hair growth promoting activity & results were comparable to standard group animals. Comparative evaluation of petroleum extract & benzene extract of *H.rosa-sinensis* and alcohol extract of *G. glabra* shows better result as compared to standard group animals. The extracts are effective in promoting hair growth activity. It may also effective to remove baldness problem.

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