

Analgesic Activity of *Hibiscus rosa sinensis* Linn in Rat

Alka Sawarkar*, C.R. Jangde, P.D.Thakre, Ranu Kadoo and Sushma Shelu

Department of Pharmacology and Toxicology,
Nagpur Veterinary College, Nagpur (440006), Maharashtra
* Corresponding author email: alkasawarkar23@rediffmail.com

Abstract

The plant *Hibiscus rosa sinensis* Linn. belongs to family "Malvaceae" and Considering various medicinal properties of this plant, the leaves were collected and studied for Extractability percentage, analgesic. The herb *Hibiscus rosa sinensis* belonging to the family "Malvaceae" and is commonly known as jasvand. It is cultivated in garden throughout India native country probably china. The buds have a sweet odour and bitter taste, cooling, astringent, remove burning sensations of the body and relieves pain. In the present study aqueous, alcoholic Extracts of dried leaves of *Hibiscus rosa sinensis* was prepared. The extractability percentage of leaves was 20%. The extract showed marked analgesic activity in a dose dependent manner. Aqueous and alcoholic extracts produced significant results at both doses ($P < 0.01$), the findings indicated the analgesic activity of the leaves of the plant.

Keywords: *Hibiscus rosa sinensis*, Analgesic activity, Malvaceae, Wistar albino rats, Extract.

Introduction

Hibiscus rosa sinensis is one of the most common garden shrubs used for hedges (Caius, 1992). The herb *Hibiscus* belonging to the family "Malvaceae" and is commonly known as Jasvand (kirtikar and Mayor 1987). Flowers are used in all kinds of inflammation, internally they are prescribed in the form of decoction of bronchial catarrh, as a becenic and sudorific roots are mucilaginous and demulcent, valuable in cough. (Caius, 1992). The buds have cooling and astringent effect and it removes burning sensation of the body (kirtikar and Mayor 1987). The extract of the leaves is used to relieve pain. Steroidal and nonsteridol drugs are routinely used in allopathic medicine. As they are having side effects such as gastric and hepatic toxicity, none of them are suitable for prolonged use .As compared to other analgesic drugs, *Hibiscus rosa sinensis* is good remedy without harmful side effects and is of least cost. In view of various medicinal properties of leaves of *Hibiscus rosa sinensis* in present study were studied to assess analgesic activity of the extracts in wistar albino rats.

Materials and methods

The study was conducted on Wistar albino rats as per the method described by (Ghosh M.N. ,1984). Leaves of *Hibiscus rosa sinensis* were collected from local garden of Nagpur region. These were dried at room temperature and then powdered. Aqueous and alcoholic extract were prepared as per the routine

method of extraction (Rosenthelel,1930). Thirty-six healthy wistar albino rats which where procured from the recognized Laboratory, Animal Breeding Center, Nagpur University, Nagpur. Rats were acclimatized to the normal laboratory condition with 12:12 light and dark cycle. The animals were fed standard pellet diet (22.02% CP, 3.02%CF) which was produce from Pranav Agro Industries Ltd, Maharashtra and adlib water.

Thirty-six healthy wistar albino rats weighing between 150-200g were divided into six groups each comprising of six rats with 1:1 sex ratio. The water taken in a beaker was heated on a hot plate up to $55 \pm 0.5^\circ\text{C}$ and the temperature was monitored continuously with the help of a thermometer so as to maintain the temperature at $55 \pm 0.5^\circ\text{C}$. The rat was held in suitable position with the tail protruding out. The tail upto 5 cm was dipped in the beaker. The time taken in seconds before administration of the drugs for all rats from each group was recorded.

T1 group was kept as negative control and was given 0.5ml-distilled water orally. Analgin @10mg/kg was administered to T2 group and was kept as standard or as positive control. The aqueous extract was given to T3, T4 @ 100,200 mg/kg. Alcoholic extract of *Hibiscus rosa sinensis* was given to T5, & T6 groups @100, 200 mg/kg respectively orally.

The reaction time in seconds was then recorded after the administration of drugs at the interval of 30minutes, 60 minutes, and 90 minutes for all groups.

Means of these readings were taken as reaction time after drug administration and were compared with the control group. The data obtained was analyzed statistically to know the level of significance (Snedecor and Cochran, 1967).

The mean reaction time was observed before and after administration of extract of Hibiscus rosa sinensis at the different concentrations used viz. 100, 200 mg/kg body wt. and Analgin 10mg/kg b.wt. differ significantly when compared with control.

Results and Discussion

The mean reaction time was observed before and after administration of extract of Hibiscus rosa sinensis at the different concentrations used viz. 100, 200 mg/kg body wt. and Analgin 10mg/kg body wt differ significantly when compared with control and the difference was observed significant at 1% level of significance(p< 0.01). This may be due to presence of alkaloids which produce narcotic analgesic activity mediated through opiodergic receptors. Thus the observation in the present study are in close agreement to the previous worker and it is concluded that the aqueous and alcoholic extracts of Hibiscus rosa sinensis possess significant analgesic activity in Wistar albino rats. (Ghosh M.N., 1984).

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Table-1. Analgesic activity of Hibiscus rosa sinensis

Sr.	T1			T2			T3			T4			T5			T6		
	B.D.	A.D.	Diff.	B.D.	A.D.	Diff.	B.D.	A.D.	Diff.	B.D.	A.D.	Diff.	B.D.	A.D.	Diff.	B.D.	A.D.	Diff.
1.	3.3	3.4	0.1	2.7	4.5	1.8	4.4	5.3	0.9	4.4	5.3	0.9	2.8	3.6	0.8	2.7	4.5	1.8
2.	3.2	3.2	0.0	2.8	5.2	2.4	6.0	6.1	0.1	6.0	6.1	0.1	2.8	4.0	1.2	2.8	5.2	2.4
3.	4.2	4.3	0.1	5.1	7.1	2.0	4.0	5.3	1.3	4.0	5.3	1.3	6.0	9.0	3.0	5.1	7.1	2.0
4.	3.4	3.2	0.2	4.1	5.0	0.9	4.6	5.1	0.5	4.6	5.1	0.5	4.9	7.4	2.5	4.1	5.0	0.9
5.	3.0	3.0	0.0	2.8	4.6	1.8	5.6	6.1	0.5	5.6	6.1	0.5	3.0	5.7	2.7	2.8	4.6	1.8
6.	4.5	5.1	1.1	4.1	4.6	0.5	4.1	5.1	1.0	4.1	5.1	1.0	3.6	3.8	0.2	4.1	4.6	0.7
Mean (M)	0.2			1.60**			0.716			1.033*			1.166*			1.733**		
± S.E.	0.099			0.269			0.175			0.122			0.271			0.470		

ANOVA Analgesic Activity

Source	DF	SS	MSS	VR	F
Treatment	5	9.679167	1.935833	4.569836	
Error	30	12.70833	0.423611		
Total	35	22.3875			
