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Standardization and Identification for Types of Amino Acid, Sugar Present in "Chaksini" *Peristophe bicalyculata* Nees by Column Chromatography.

Sadrul Hoda
Associate Professor in Saidla
Aligarh unani / Ayurvedic Medical College and acn hospital Aligarh

ABSTRACT

The drug "Chaksini, Persistrophe bicalyculata Nees" (Family Acanthaceae) is a lesser known drug. It is used for different ailments especially in wound healing in traditional Unani medicine. The Phytochemical analysis was done by chromatography to establish to the efficacy of the drug. It confirms the potency by having active chemical constituent present in the drug. The result clearly indicates the presence of aminoacid and sugar in the drug.

Keywords: Chaksini, Peristrophe bicalyculata, Acanthaceae, Charcoal, Column, Silica, Chromatography.

Introduction

"Peristrophe bicalyculata Nees" is commonly known as "Chaksini". It belongs to the family Acanthaceae. It is a commonly used weed in and around Aligarh, a sub-tropic species of Asia and Africa and also available throughout India (Anonymous, 1959; Kirtikar and Basu, 1987; Bamber, 1916; Hains, 1925; Dalziel, 1948; Duthie, 1960; Prains, 1963). It is a lesser known drug and mentioned in few of the Unani classical books for its medicinal uses. Ghani (1921) and Khan (1882) mentioned that the dried plant is beneficial in psychosomatic disorders and wound healing and possesses anti-venom activity. In medicoethano-botanical literature the plant has been mentioned as a good antidote for snake poison (Mhasker and Caius, 1931; Chopra, 1956). No scientific work has been reported so far on this plant, particularly for its wound healing effect, hence The Phytochemical analysis was done by chromatography to establish to the efficacy of the drug. It confirms the potency by having active chemical constituent present in the drug. The result clearly indicates the presence of aminoacid and sugar in the drug.

Collection and Extraction of Herb

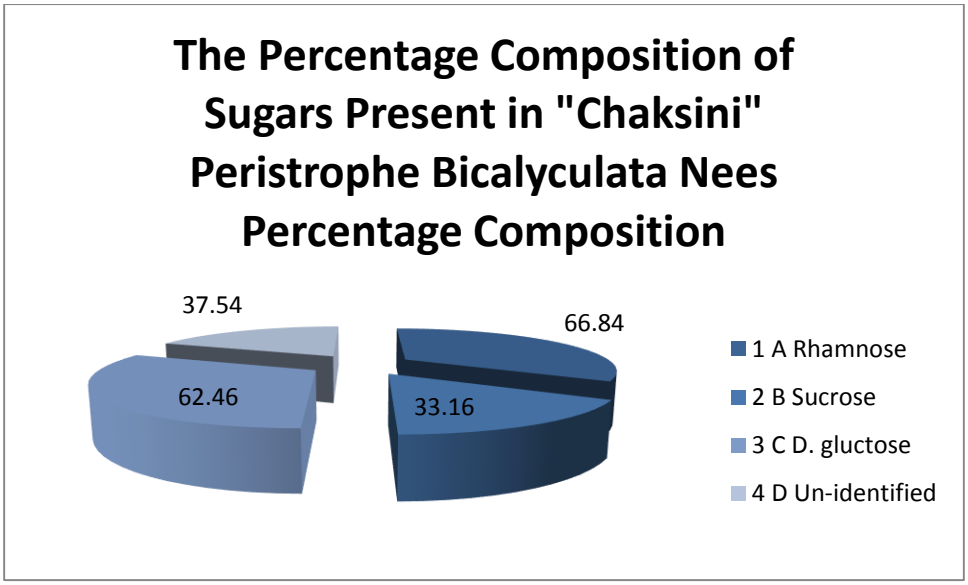
The plants were collected from the wasteland around Aligarh district (U.P., India), and properly identified with the help of Botany. Department Aligarh Muslim University (AMU), Aligarh and the herbarium sheets were prepared and deposited in the department of Ilmul Adavia (Voucher specimen No. 390) of A.M.U., Aligarh.

The dried herb (1 kg) was extracted with distilled water and the extract was dried at low temperature and pressure. The total yield of water extract was 14.2% (Hoda, 1996).

Materials and Methods

Chromatographic Studies

Determination of Sugar



The known quantity of drug was reflexed in ethanol for 8 hours and then filtered. The filtrate was evaporated on water bath and the descending chromatography of this extract was performed for the separating and the identification of sugar. A spot of this concentrated ethonolic extract of drug was made on one end of large sheet of the whatman's No. I filter paper. The same type of spots of standard sample of various sugars were also made on the same filter paper at a proper distance. The spots were dried and placed in a chromatographic chamber for 24 hours. The solvent system was the upper layer of a mixture of N-butanol, acetic acid and distilled water (4:1:5) afterwards, the sheet was removed from the chamber and dried in the air, then it was sprayed with Analinepthalate (Appendix) and heated in over at 55^{o} C temperature for 10 minutes. To visualization the spot. The Rf values were

calculated by the following formula: (Peach and Tracey, 1955).

Determination of Amino-acid by Paper Chromatography

The alcoholic extract was obtained by refluxing the known quality of drug in 70% ethanol for 8 hours, then filtered and the filtrate was concentrated. A small spot of the drug extract was made on a small area of whatman's filter (No.1) papersheet, and the spots of authentic samples of similar dimension were also made at a proper distance. The filter paper was dried in air and then hanged into the descending paper chromatography chamber for 24 hours. The solvent system was the mixture of N-Butanol, Acetic acid and Distilled water (4:1:5) upper organic layer. After 24 hours the filter paper was taken out from the chamber. It is dried in the air, sprayed with Ninhydrin (0.1% in actone) and heated in oven at 55^{o} C temperature for 10 minutes. After appearance of the spots, the Rf values were calculated.

$$\mathrm{Rf} = \frac{Distance\ Traveled\ by\ Compound}{Distance\ traveled\ by\ solvent\ front}$$

The spots of drug were also directly compared with the spots of authentic samples of sugars and amino-acids for the identification. The percentage composition was calculated by plotting a graph with the help of "Toshniwal" densitometer.

Discussion:

The Chromatographic studies of alcoholic extract of the drug had been used fractionizing by column chromatography. The descending papers Chromatography were used for detecting the presence of free amino-acids and sugars. The 3 types of sugars (T-1, Fig. 1.2) and 13 amino-acid (T-2, Fig. 2.2) were detected and identified here. In 1875 the drug, Salix Alba was reported as a anti-inflammatory effect present in the drug. One Glycoside had been isolated as a Saly Salic Acid. From which NSAID had been discovered from this plant. In same manner in this plant a glycoside has reported here and in this drug various amino acids, sugar, phenol has been isolated here, Hoda 1996. In this paper I am presenting here types of amino acid and sugar present in this drug.

TABLE - 1

THE PERCENTAGE COMPOSITION OF SUGARS PRESENT IN "CHAKSINI" *PERISTROPHE BICALYCULATA* NEES

S.No.	Sugars	Percentage composition
1.	Rhamnose	66.84
2.	Sucrose	33.16
3.	D.gluctose	62.46
4.	Un-identified	37.54

TABLE - 2.1

THE PERCENTAGE COMPOSITION OF AMINO ACIDS PRESENT IN "CHAKSINI" *P. BICALYCULATA* NEES

S.No.		Amino Acids	Percentage Composition
1.	(A)	DL-Alamine	54.54
2.	(B)	DL-2-Amino-n Butyric Acid	45.41
3.	(C)	L-Arginine - HCL	61.53
4.	(D)	DL-Asparatic Acid	38.46
5.	(E)	DL-Dopa	62.68
6.	(F)	Glycin	37.31
7.	(G)	DL-Isoleucine	52.98
8.	(H)	DL-Nor-Leucine	47.70
9.	(I)	DL-methionine	46.15
10.	(J)	L-Proline	53.84
11.	(K)	DL-Tryptophan	64.47
12.	(M)	α-Tyrosin	35.52
13.	(N)	L-Hystidine HCl	78.43
14.	(O)	Unidentified	21.56

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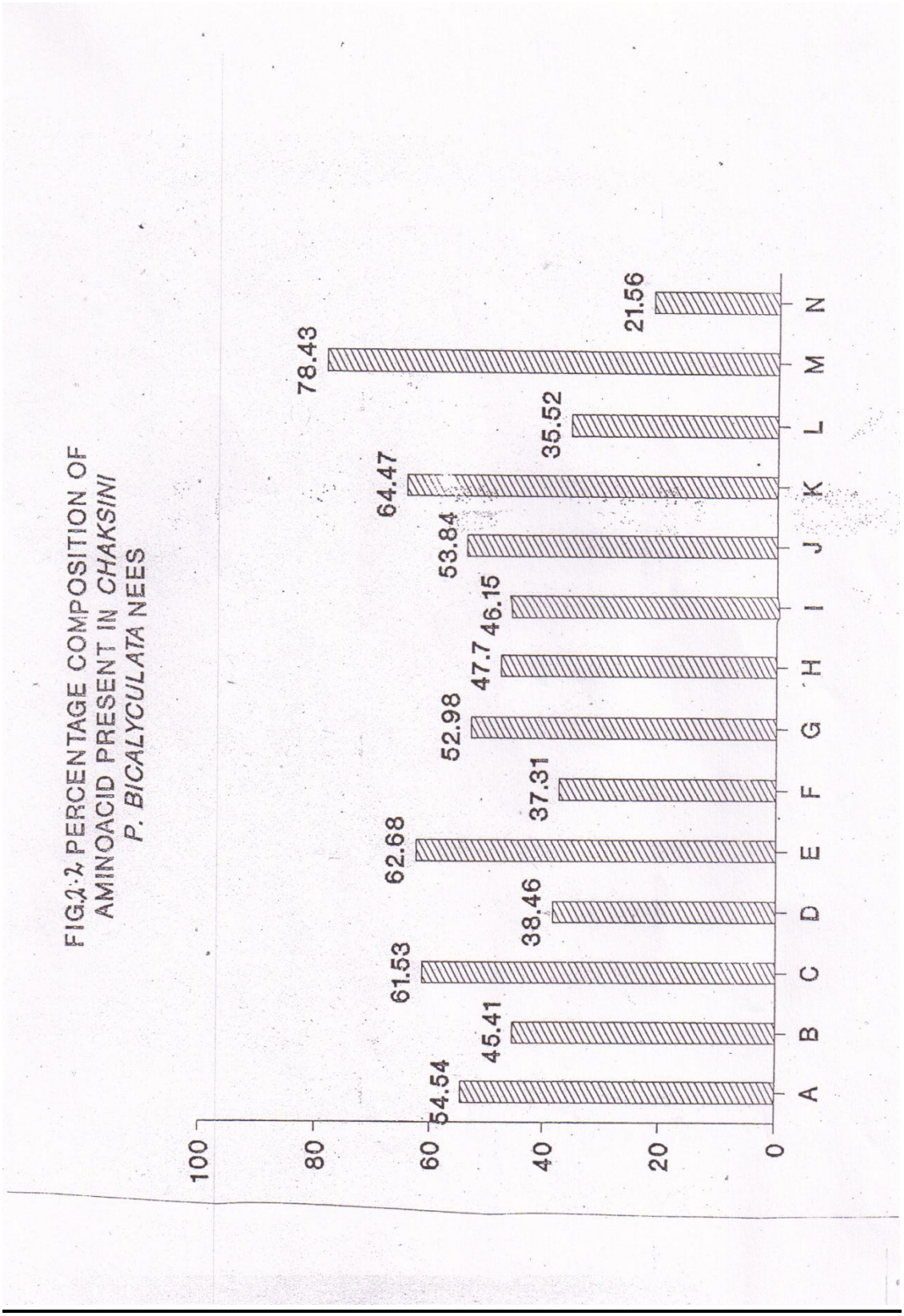

FIG.2: PERCENTAGE COMPOSITION OF AMINOACID PRESENT IN *CHAKSINI P. BICALYCULATA* NEES

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