

**STANDARDISATION OF “HAB – E – BUKHAR” (Unani Medicine)****DR. ANANDAKUMAR. A., BALASUBRAMANIAM . M. AND MURALIDHARAN. R.**

*The Indian Medical Practitioners' Co-operative Pharmacy and Stores Ltd.,  
Adyar, Madras 600 020, India.*

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**ABSTRACT:** ‘HAB-E-BUKHAR’ – a compound drug formulation in Unani System of medicine has been analysed. The microscopic method of identification of few of its ingredients (Sath-e-gulu, Thabasheer); Quantitative analysis of Quinine sulphate, other physio-chemical contents and the T.L.C. of the drug have also been reported here.

**INTRODUCTION**

‘Hab-e-Bukhar’ a drug formulation in Unani system of medicine is specifically given in fever due to elephantiasis and mala rias. It is an antipuretic. The drug is prepared as described in “Unani marunthugalin Seimurai” of IMPCOPS Ltd., Madras – 600 020 which has been extracted from Kharabadeen-e-jadeed.<sup>1</sup>

The below mentioned ingredients have been added in definite proportion. Preparations have been done as suggested in the pharmacopoeia<sup>1</sup> and rolled/punched into 50m. gm. pills.

**MATERIALS AND METHODS**

The microscopic method of identifying the ingredients as suggested by ‘Trease and Evans 1966’ have been applied for the identification of Sath-e-gulu and thabasheer of Hab-e-Bukhar. The quantitative estimation of Quinine sulphate and the other physic – chemical contents like loss on

drying, ash content, acid insoluble ash, alkalinity of ash, water insoluble ash, water insoluble extractive, chloroform soluble extractive, pH of 2% aqueous solution, successive extractive principles, total invert sugar and thereby starch content, silica content, iron content, mixed oxide etc., have been determined as suggested by standard pharmacopoeial methods (Indian Pharmacopoeia 1970, A. O. A. C. XIIIth edition 1980) and the results are furnished in Table II.

**Thin layer chromatography of Hab-e-Bukhar and Quinine Sulphate**

500 m.gm. powder of the *Hab-e-Bukhar* and the authentic sample of Quinine sulphate have been dissolved separately in a solution of chloroform and ethanol. Silicagel. G. plates of standard size have been prepared according to Stahl. E. 1969.<sup>7</sup>

S. No.	Unani Name	Common Name	Source	Part Used	Ratio
1.	Quinine Sulphate	'Quinine Sulphate'	<i>Cinchona</i> species	Salt	1 part
2.	Sath-e-gulu	'Tinospora Starch'	<i>Tinospora cordifolia</i> (L.) Miers	Starch	1 part
3.	Thabasheer	Bamboo manna	<i>Bambusa bambos</i> Druce	Silicious concretion of the internodes	2 parts
4.	Samag-e-arabi	Gum Arabic	<i>Acacia Arabica</i> willd	Gum	2 parts
5.	Garam aab	Hot water			(Qty. sufficient)

Samples prepared as above viz. the *Hab-e-Bukhar* and the authentic Quinine sulphate have been sported in the plate with micropipette. Benzene and methanol in the ratio 80 + 20 has been used as developing system. After development in the above said solvent system, the plate has been air dried and observed under the ultra – violet long wave radiation. The results are furnished in Table – I.

### Observation and results

#### *Powder analysis*

0.1 gram of the randomly collected powdered sample of the formulation *Hab-e-*

*Bukhar* and its ingredients Sath-e-gulu and Thabasheer have been mounted separately in different slides with glycerin, iodine water, chloral hydrate etc. and examined under the microscope. The characteristic anatomical features of the individual drugs, observed in the compound formulation *Hab – e – Bhukar* have been carefully examined and the identity has been confirmed as follows:

#### *Thabasheer*

Glossy crystals of different sizes ranging from 5 – 140 microns dia which did not dissolve in water confirmed the presence of thabasheer.

**TABLE – I**

**Thin layer chromatography**

Stationary phase : Silicagel - G Development system : Benzene + methanol (80 + 20) Identification : Observation under U. V. Long wave radiation				
Sl. No.	Hab-e-Bukhar		Quinine Sulphate	
	Colour	<i>hRf</i> value	Colour	<i>hRf</i> value
	Blue	57.45	Blue	57.45

*Sath-e-gulu*

Monthly simple, ovoid, few with Kidney shaped as well as irregularly triangular starch granules, stained blue on irrigation with iodine water, 3.5 – 15 x 11 – 36 micron in size, Hilum centric which also appeared as a line, indicated the inclusion.

**Confirmation of Quinine sulphate by Qualitative method**

a) The saturated solution of Hab-e-Bukhar has been taken. On adding the dilute sulphuric acid a bluish tinge appeared,

under which the U.V. long wave radiation exhibited a bright blue fluorescence confirming the presence of Quinine Sulphate.

b) To a 2% W/v solution of *Hab-e-Bukhar*, 2 to 3 drops of solution of Bromine and them 1 ml. of dilute Ammonia have been added. An emerald green colour produced, confirmed the presence of Quinine sulphate. *Hab-e-Bukhar* also answered the positive tests for sulphate' with Barium chloride.

**TABLE – II**

**Proximate Chemical Analysis**

S. No.	Analytical findings	% W/W
1.	Loss on drying	8.9122
2.	Ash content	31.8646
3.	Alkalinity of ash	0.4255 ml. of 0.1 N Hcl/gm
4.	Water insoluble ash	25.383

5.	Acid insoluble ash	25.008
6.	Alcohol soluble matter	15.184
7.	Water soluble matter	36.015
8.	Chloroform soluble matter	11.675
9.	<i>Successive extractives:</i>	
	a) Petroleum ether	1.2214
	b) Benzene	8.6483
	c) Chloroform	2.6787
	d) Alcohol	5.3631
	e) Water	24.1478
10.	Quinine sulphate content	9.016
11.	Total invert sugar	36.095
12.	Starch content	32.485
13.	Silica content	26.539
14.	Mixed oxide	3.516
15.	Iron content	2.896
16.	pH of 2% aqueous solution	8.75 (mere number)

## DISCUSSION

The ingredient Sath-e-gulu (*Tinospora* starch) has been identified by microscopic powder analysis method. The presence of Quinine sulphate has been confirmed qualitatively. Thabasheer (Bamboo manna) and the Quinine sulphate have also been estimated quantitatively. The T.L.C. of *Hab-e-Bukhar* and the authentic sample of Quinine sulphate gave prominent blue fluorescence spots under – U. V. long wave radiation.

Hence the microscopic method of identification, proximate chemical analysis and the T.L.C. studies can very well be accepted as one of the standard method to assess the quality of the drug *Hab-e-Bukhar*.

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