

“THE GC MS STUDY OF ONE UNANI MEDICINE, “HABB-E-MUDIR”

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ABSTRACT

This work consists of the Gas Chromatography Mass Spectroscopic analysis of one Unani drug, “Habb-e-Mudir” which is prescribed for uterine disorders. The medicine was procured from a standard Unani medicine vendor at Chennai and was processed suitably to be analysed by GC MS process. The results indicated the presence of many molecules such as Trichloroacetic acid, undecyl ester, Sulfurous acid, pentyl undecyl ester, Sulfurous acid, decyl 2-ethylhexyl ester, 4-Hydroxy-3,5,5-trimethylcyclohex-2-enone, Phytol, trans-2-methyl-4-n-pentylthiane, S,S-dioxide etc. which show promising medicinal roles. These molecules could impart the medicinal properties of “Habb-e-Mudir” the ailments for which it is prescribed.

Key words: Unani, GC MS, Habb e Mudir, Trichloroacetic acid, undecyl ester, Sulfurous acid, pentyl undecyl ester, Phytol

INTRODUCTION

Habb-e-Mudir is an important medicine prescribed to treat uterine disorders. It is prescribed for to improve the tonicity to uterine muscles and restores menstrual regularity. It is also given for patients suffering from amenorrhoea. This medicine consists of three ingredients. Sibr (Dried juice of *Aloe barbadensis* L., Hira kasis (ferrous sulphate) - 2gm and Zafran - Saffron (Dried style and Stigma of flowers of *Crocus sativa* L.) - 1 gm. There are scanty reports on the research on this medicine. Kamil *et al*, 1986 have done the chemical standardization of Habb- e-Mudir.¹ Mohammad *et al*, 2015 have worked on the identification of raw materials for some Unani drugs using TLC.² The medicinal values of both plants, namely *Aloe barbadensis* and *Crocis sativa* (Saffron) are well known. Jayakumari *et al*, 2017 have reported the presence of some very important molecule by GC MS profiling of *Aloe barbadensis*.³ Saffron or *Crocus sativa* flower parts such as petals, stamen and stigma have been reported to have medicinal properties such as controlling blood pressure, treatment of ischemic retinopathy, as antioxidant, anti-tumour and as neuro-protective (Hosseinzadeh and Younesi, 2002).⁴ Ferrous sulphate, understandably, could contribute as Iron supplier which is an important ingredient for haemoglobin. The present workers are working to scientifically evaluate the veracity of the alternative systems of medicines such as Ayurveda, Sidhha and Unani, by latest techniques so that deeper knowledge of the mechanism of action of these medicines could be gained.⁵⁻²³

MATERIALS AND METHODS

The medicine Habb-e-Mudir was bought from Unani medicine vendor and was suitably processed by standard procedures for GC-MS analysis.

RESULTS

The Gas Chromatography Mass Spectroscopic profile of the Habb-e-Mudir and possible medicinal role of each molecule is tabulated in Table 1. Figure 1 represents the GC-MS profile of the Unani medicine Habb-e-Mudir. The molecules were identified by NIST spectral library and their medicinal roles were referred from National Agriculture Library, USA and others as shown in Table 1.²⁴

DISCUSSION

The drug Habb-e-Mudir showed some compounds such as, Trichloroacetic acid, undecyl ester, Sulfurous acid, pentyl undecyl ester, Sulfurous acid, decyl 2-ethylhexyl ester, 4-Hydroxy-3,5,5-trimethylcyclohex-2-enone, Phytol, trans-2-methyl-4-n-pentylthiane, S,S-dioxide etc. which have medicinal properties as mentioned in Table 1. These properties of the molecules could directly or indirectly contribute the role of Habb e mudir as a potential medicine for disorders of uterine system. molecular mechanism of this medicine is going on. Further work to establish the molecular mechanism of this medicine is going on. It will be pertinent to understand the roles of those molecules for which there is no report to substantiate the medicinal efficacy of Habb e mudir.

CONCLUSION

It could be summarized from the results and discussion that Habb e mudir does contain important biomolecules which provides a clue to its prescription for the ailments it is given.

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Figure 1. Indicates the GC MS profile of Habb-e-Mudir

Qualitative Compound Report

Data File	030221055.D	Sample Name	Habb Mudir
Sample Type		Position	105
Acq Method	GC Screening New Method.M	Acquired Time	06-02-2021 PM08:34:02
Comment			

User Chromatogram

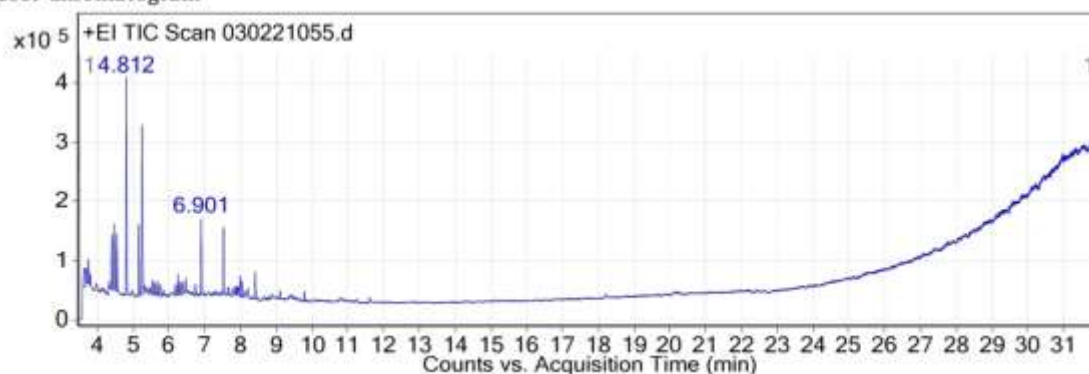


Table 1. Shows the retentions values, types of possible compound, their molecular formulae, molecular mass, peak area and their medicinal roles of each compound as shown in the GC MS profile of Habb – E-Mudir

Ret. Time	Molecule	Mol. Formula	Mol. Mass	% Peak Area	Possible Medicinal Role
3.65	Cyclopentanone, 3-(3-hydroxy-1-propenyl)-	C ₈ H ₁₂ O ₂	140.1	4.65	Not known
4.48	Trichloroacetic acid, undecyl ester	C ₁₃ H ₂₃ Cl ₃ O ₂	316.1	11.24	Arachidonic acid inhibitor, Increases Aromatic Amino acid Decarboxylase activity
4.55	Cyclopentane, 1-pentyl-2-propyl-	C ₁₃ H ₂₆	182.2	7.05	Not known
4.81	Benzene, 1,3-bis(1,1-dimethylethyl)-	C ₁₄ H ₂₂	190.2	25.10	Not known
5.25	Dodecane, 1-fluoro-	C ₁₂ H ₂₅ F	188.2	20.63	Not known
5.55	Sulfurous acid, pentyl undecyl ester	C ₁₆ H ₃₄ O ₃ S	306.2	1.59	Arachidonic acid inhibitor, Increases Aromatic Amino acid Decarboxylase activity
5.61	Sulfurous acid, decyl 2-ethylhexyl ester	C ₁₈ H ₃₈ O ₃ S	334.3	1.28	Arachidonic acid inhibitor, Increases Aromatic Amino acid Decarboxylase activity
6.74	4-Hydroxy-3,5,5-trimethylcyclohex-2-enone	C ₉ H ₁₄ O ₂	154.1	1.79	17 beta hydroxysteroid dehydrogenase inhibitor, Aryl hydrocarbon hydroxylase inhibitor, testosterone hydroxylase inducer
7.66	5-Isopropenyl-2-methylcyclopent-1-enecarboxaldehyde	C ₁₀ H ₁₄ O	150.1	1.57	Not known
7.91	Phytol	C ₂₀ H ₄₀ O	296.3	1.44	Antimicrobial, anti-inflammatory, antioxidant, diuretic
7.99	trans-2-methyl-4-n-pentylthiane, S,S-dioxide	C ₁₁ H ₂₂ O ₂ S	218.1	3.26	Glutathione S Transferase inhibitor, catechol O methyl transferase inhibitor, Myo neuro stimulant,

					Nitric oxide synthase inhibitor, NO scavenger, Stimulates norepinephrine production, stimulates Sympathetic nervous system, decreases glutamate oxaloacetate transaminase, decreases glutamate pyruvate transaminase, glycosyl transferase inhibitor, reverse transcriptase inhibitor, transdermal, smart drug, adrenal stimulator
9.10	Diethyl Phthalate	C12H14O4	222.1	1.20	Not known