

The Gas Chromatography Mass Spectroscopy Analysis of One Unani Drug, "Majoon Dabeedulward"

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ABSTRACT

The Unani Drug, "Majoon Dabeedulward" is prescribed for digestive and liver ailments. The drug was bought from a Unani medicine supplier and was processed suitably for gas chromatography mass spectroscopic analysis. The profile showed metabolites, namely, Propanoic acid, 2,2-dimethyl-, 2-ethylhexyl ester, trans-2-methyl-4-n-pentylthiane, S,S-dioxide, Eugenol, alpha-Santalol, Benzoic acid, 3-hydroxy- etc. which have a wide range of medicinal properties.

Key words: GC MS, Unani medicine, Majoon dabeedulward, Eugenol, Alpha-santalol, Benzoic acid, 3-Hydroxy

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INTRODUCTION

Majoon Dabeedulward is one herbal Unani medicine used to treat digestive and liver ailments. The main ingredients are mentioned below:

Izkhar Makki (*Cymbopogon jwarancusa*), Agar Hindi (*Aquilaria agallocha*), Balchhar (*Nardosachys jatamansi*), Banslochan (*Bambusa arundinacea* Retz.), Tukhm Kansi (*Cichorium intybus*), Tukhm Kassos (*Cuscuta reflexa*), Tukhm karafs (*Apium graveolens*) and Taj Qalmi (*Cinnamomum cassia*).

Very few reports are available on the scientific work for this medicine. Shakyia et al. have evaluated the hepatoprotective role of this drug [1]. Khan and Khan have reported the effects of this drug on fibroids [2]. Bozorgi, 2017 have reported the antioxidant role of this drug [3].

The description of this medicine finds its reference in Pharmacopoea Commission of Indian Medicines and Homoeopathy, 2004 [4]. The present workers have worked to scientifically evaluate the veracity of these medicine systems by latest techniques so that deeper knowledge of the mechanism of action of these medicines could be gained [5-23]. The present study in one step further in this endeavour.

MATERIALS AND METHODS

Majoon Dabeedulward was bought from a Unani medicine vendor in Chennai. The medicine was suitably processed by standard procedures and the GC-MS analysis was performed.

RESULTS

The gas chromatography mass spectroscopic profile of Majoon Dabeedulward and possible medicinal role of each metabolite is tabulated in Table 1.

Table 1: Indicates 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 Majoon Dabeedulward.

Ret. Time	Molecule	Mol. Formula	Mol. Mass	% Peak Area	Possible Medicinal Role
3.69	Decane, 2,8,8-trimethyl-	C ₁₃ H ₂₈	184.2	1.60	Not known
3.75	Propanoic acid, 2,2-dimethyl-, 2-ethylhexyl ester	C ₁₃ H ₂₆ O ₂	214.2	2.50	Arachidonic acid inhibitor
4.55	trans-2-methyl-4-n-pentylthiane, S,S-dioxide	C ₁₁ H ₂₂ O ₂ S	218.1	10.11	Glutathione S Transferase inhibitor; catechol O methyl transferase inhibitor; Myo neuro stimulant, Nitric oxide synthetase inhibitor, NO scavenger, Stimulates norepinephrine production, stm=ulated Sympathetic nervous sytem, decreases glutamate oxaloacetate transaminase, decreases glutamate pyruvate transaminase, glycosyl transferase inhibitor, reverse transcriptase inhibitor, transdermal, smart drug, adrenal stimulator
7.53	Phenol, 2,4-bis(1,1-dimethylethyl)-	C ₁₄ H ₂₂ O	206.2	7.51	Not known
8.06	Methylparaben	C ₈ H ₈ O ₃	152	9.76	Not known
8.88	.alpha-Santalol	C ₁₅ H ₂₄ O	220.2	1.65	5 alpha reductase inhibitor; alpha agonist, alpha amylase inhibitor, alpha glucosidase inhibitor, alpha reductase inhibitor, HIF 1 alpha inhibitor, Ikappa B alpha phosphorylation inhibitor, increases alpha mannosidae activity, Interleukine 1 alpha inhibitor, testosterone 5 alpha reductase inhibitor, TNF alpha inhibitor
9.29	Propylparaben	C ₁₀ H ₁₂ O ₃	180.1	4.22	Not known
9.32	Isobutyl 4-hydroxybenzoate	C ₁₁ H ₁₄ O ₃	194.1	3.95	Not known
9.39	Benzoic acid, 3-hydroxy-	C ₇ H ₆ O ₃	138	1.99	17 beta hydroxyl-steroid dehydrogenase inhibitor, aryl hydrocarbon hydroxylase inhibitor, testosterone hydroxylase inducer, catechol-o-methyl transferase inhibitor

Figure 1 shows the gas chromatography mass spectroscopic profile the Unani medicine Majoon Dabeedulward. The identification of metabolites was done by comaring with NIST spectral library and the possible pharmaceutical roles of each bio molecule as per National Agriculture Library, USA and others as shown in Table 1 [23].

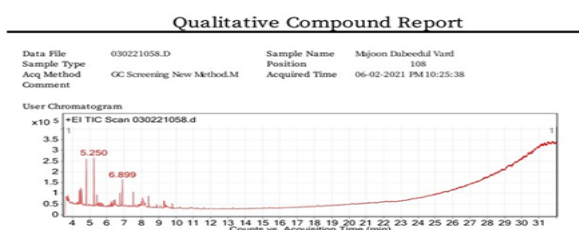


Figure 1: indicates the GC MS profile of Majoon Dabeedulward.

DISCUSSION

The gas chromatography mass spectroscopic of Majoon Dabeedulward showed compounds namely, Propanoic acid, 2,2-dimethyl-, 2-ethylhexyl ester; trans-2-methyl-4-n-pentylthiane, S,S-dioxide, Eugenol, alpha-Santalol, Benzoic acid, 3-hydroxy- etc. which have a wide ranges of medicinal properties. These molecules contribute to the medicinal role of Majoon Dabeedulward.

CONCLUSION

It could be summarized from the results and discussion that Majoon Dabeedulward does contain important biomolecules which provides a clue to its prescription for

the urolithiatic role of this medicine. It will be of interest to probe into the medicinal roles of many compound present in Majoon Dabeedulward for which the medicinal roles are not reported yet.

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