

The Gas Chromatography Mass Spectroscopy Analysis of One Unani Drug, “Majoon Falasifa”

Hassan Mohammad M¹, Janaki CS², Rao MRK^{3*}, Prabhu K⁴, Deepa K⁵, Franklin⁶,
Vijayalakshmi N⁷

¹Department of Anatomy, Northern Borders University, Arar, Saudi Arabia

²Department of Anatomy, Bhaarith Medical College, Chennai, Tamilnadu, India

³Department of Anatomy, Amritha University, Thiruporur, Tamil Nadu, India

⁴Department of Anatomy, Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India

⁵Department of Anatomy, Quest International University, IPOH Perak, Malaysia

⁶Department of Microbiology, CEO Anna Medical College, Mauritius, Montagne Blanche, Island

⁷Department of Chemical and Biotechnology, SASTRA (Deemed to be University), Thanjavur, Tamil Nadu, India

ABSTRACT

This work embarks upon the gas chromatography mass spectroscopic analysis of one Unani drug, “Majoon falasifa” which is prescribed for ailments of nerves, digestive and reproductive systems. The drug was bought from a Unani medicine supplier and was processed suitably to be analysed by GC MS process. The compounds namely, Butanoic acid, 2-methyl-,1,2-dimethylpropyl ester, Propanoic acid, 2,2-dimethyl-,2-ethylhexyl ester, 5-hydroxymethylfurfural, Cyclohexane, 1-ethyl-,1,3-dimethyl-,trans-,Gamolenic Acid, Methyl 2-hydroxy-octadeca-9,12,15-trienoate, 1,2-Benzenedicarboxylic acid, mono (2-ethylhexyl) ester etc. These compounds do shown medicinal roles which correspond to that of Majoon falasifa. Further work to know the roles of some other molecules for which the reports are not available.

Key words: GCMS, Majoon falasifa, Butanoic acid, 2-methyl-, 1,2-dimethylpropyl ester, 5-Hydroxymethylfurfural, Gamolenic acid

HOW TO CITE THIS ARTICLE: Hassan mohammad M, Janaki CS, Rao MRK, Prabhu K, Deepa K, Franklin, Vijayalakshmi N, The Gas Chromatography Mass Spectroscopy Analysis of One Unani Drug, “Majoon Falasifa”, J Res Med Dent Sci, 2022, 10 (9): 129-132.

Corresponding author: Dr. Mudiganti Ram Krishna Rao

E-mail: editor.pubs@gmail.com

Received: 01-Jul-2022, Manuscript No. JRMDs-22-57364;

Editor assigned: 04-Jul-2022, PreQC No. JRMDs-22-57364 (PQ);

Reviewed: 18-Jul-2022, QC No. JRMDs-22-57364;

Revised: 01-Sep-2022, Manuscript No. JRMDs-22-57364 (R);

Published: 07-Sep-2022

INTRODUCTION

The Unani medicine, Majoon falasifa has been claimed to have properties such as brain and nerve tonic, gastro tonic, as an aphrodisiac and as semen procreator. It is prescribed for dyspepsia, kidney pain and arthralgia also. The ingredients of this medicine are mentioned below:

Tukhm baboona (*Anthemis nobilis* seed) 15 gm; Amla muqashsher (*Emblica officinalis* G. crushed fruit) 30 gm; Beikh baboona (*Anthemis nobilis* root) 30 gm; Filfil daraz (*Piper longum* fruit) 30 gm; Filfil siyah (*Piper nigrum* fruit) 30 gm; Maghz chilghoza (*Pinus gerardiana* kernel) 30 gm;

Narjeel taaza (*Lodoicea maldivica* Pers fresh fruit) 30 gm; Salab misri (*Orchis latifolia* root) 30 gm; Sheetraj (*Plumbago zeylanicum*) 30 gm; Zanjabil (*Zingiber officinalis* rhizome) 30 gm; Zaravand mudharij (*Aristolochia rotunda* root) 30 gm and Maveez munaqqa (*Vitis vinifera* seed less fruit) 90 gm. All the above ingredients are powdered and mixed with alkaline solution of a particular consistency of Asl (Honey), double the weight of the powder. It is prescribed at dose of 5 to 7 gm.

Very few reports on the medical efficacy of Majoon falasifa are available. Zarnigar have reported the positive role of this medicine in health promotion in elderly patients [1]. Younis et al. have studied the shelf life of Majoon falasifa [2]. Rashid et al. have reported the positive role of Majoon falasifa in the health of elderly [3]. Younis et al. have reported the microbial analysis of this medicine [4]. In order to scientifically evaluate the efficacy of alternative medicines latest techniques the present workers have

reported some data and this report is one more step in this direction [5-23].

MATERIALS AND METHODS

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

RESULTS

The Unani medicine Majoon falasifa profile and possible medicinal role of each molecule 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 falasifa.

Ret. Time	Molecule	Mol. Formula	Mol. Mass	% Peak area	Possible Medicinal Role
3.69	Butanoic acid, 2-methyl-, 1,2-dimethylpropyl ester	C ₁₀ H ₂₀ O ₂	172.1	1.76	Arachidonic acid inhibitor; Increases aromatic amino acid decarboxylase activity, inhibits production of Uric acid
3.75	Propanoic acid, 2,2-dimethyl-, 2-ethylhexyl ester	C ₁₃ H ₂₆ O ₂	214.2	2.16	Arachidonic acid inhibitor; Increases aromatic amino acid decarboxylase activity, inhibits production of Uric acid
4.55	Ethylene diacrylate	C ₈ H ₁₀ O ₄	170.1	5.07	Not known
5.25	Dodecane, 1-fluoro-	C ₁₂ H ₂₅ F	188.2	15.37	Not known
6.26	6-Tridecanol, 3,9-diethyl-	C ₁₇ H ₃₆ O	256.3	1.72	Not known
6.33	5-Hydroxymethylfurfural	C ₆ H ₆ O ₃	126	6.13	It is reported to stop neuron apoptosis.
6.39	3,5-Dimethyl-3-heptene	C ₉ H ₁₈	126.1	2.35	Not known
7.92	Cyclohexane, 1-ethyl-1,3-dimethyl-, trans-	C ₁₀ H ₂₀	140.2	1.49	Catechol-O-Methyl-Transferase-Inhibitor; Increases Glutathione-S-Transferase (GST) Activity; Decreases Glutamate Oxaloacetate Transaminase, Decreases Glutamate Pyruvate Transaminase, Glucosyl-Transferase-Inhibitor; Glutathione-S-Transferase-Inhibitor; Increases Glyoxalate Transamination, Reverse-Transcriptase-Inhibitor, Transdermal
9.29	Propylparaben	C ₁₀ H ₁₂ O ₃	180.1	8.57	Not known
14.3	2-Azido-2,4,4,6,6,8,8-heptamethylnonane	C ₁₆ H ₃₃ N ₃	267.3	2.13	Not known
16.46	Gamolenic Acid	C ₁₈ H ₃₀ O ₂	278.2	2.72	Acidifier, acidulant, Arachidonic acid inhibitor; Increases aromatic amino acid decarboxylase activity, inhibits production of Uric acid
17.07	Methyl 2-hydroxy-octadeca-9,12,15-trienoate	C ₁₉ H ₃₂ O ₃	308.2	7.72	Catechol-O-Methyl-Transferase-Inhibitor; Increases Glutathione-S-Transferase (GST) Activity; Decreases Glutamate Oxaloacetate Transaminase, Decreases Glutamate Pyruvate Transaminase, Glucosyl-Transferase-Inhibitor; Glutathione-S-Transferase-Inhibitor; Increases Glyoxalate Transamination, Reverse-Transcriptase-Inhibitor, Transdermal

18.22	1,2-Benzenedicarboxylic acid, mono(2-ethylhexyl) ester	C ₁₆ H ₂₂ O ₄	278.2	1.79	Monoamine precursor, Monoxygeanse inhibitor, Squalene monooxygenase inhibitor
-------	--	--	-------	------	---

Figure 1 shows the GC-MS profile of the Unani medicine Majoon falasifa. The biomolecules were identified by referring to NIST spectral library the possible pharmaceutical roles of each bio molecule as per National Agriculture Library, USA and others as shown in Table 1 [24].

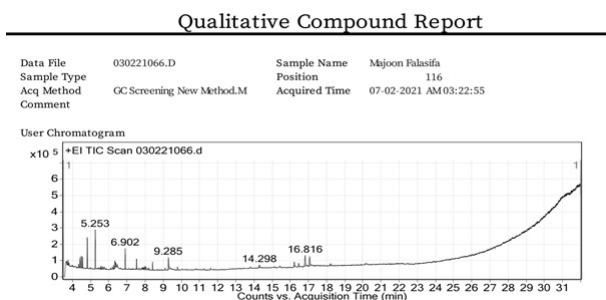


Figure 1: Indicates the gas chromatography mass spectroscopic profile of majoon falasifa.

Majoon falasifa profile showed some important compounds such as, Butanoic acid, 2-methyl-, 1,2-dimethylpropyl ester, Propanoic acid, 2,2-dimethyl-, 2-ethylhexyl ester, 5-Hydroxymethylfurfural, Cyclohexane, 1-ethyl-1,3-dimethyl-, trans-, Gamolenic Acid, Methyl 2-hydroxy-octadeca-9,12,15-trienoate, 1,2-Benzenedicarboxylic acid, mono (2-ethylhexyl) ester etc. the medicinal roles of each is mentioned in Table 1. These medicinal roles correspond to the medicinal role of Majoon falasifa. Further work to understand the medicinal roles of some of the molecules whose roles have not been reported yet will be worthwhile.

DISCUSSION

Majoon falasifa profile showed some important compounds such as, Butanoic acid, 2-methyl-, 1,2-dimethylpropyl ester, Propanoic acid, 2,2-dimethyl-, 2-ethylhexyl ester, 5-Hydroxymethylfurfural, Cyclohexane, 1-ethyl-1,3-dimethyl-, trans-, Gamolenic Acid, Methyl 2- hydroxy-octadeca-9,12,15-trienoate, 1,2-Benzenedicarboxylic acid, mono (2-ethylhexyl) ester etc. the medicinal roles of each is mentioned in Table 1. These medicinal roles correspond to the medicinal role of Majoon falasifa. Further work to understand the medicinal roles of some of the molecules whose roles have not been reported yet will be worthwhile.

CONCLUSION

It could be summarized from the results and discussion that Majoon Falasifa 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 Falasifa for which the medicinal roles are not reported yet.

REFERENCES

1. Rashid B, Zarnigar. Evaluating the role of Majoone Falasifa (Herbal formulation) in health promotion of elderly: A randomized single blind placebo controlled study. Am J pharm health res 2014; 2:214-231.
2. Younis PM, Rahman K, Rashid B. 'Accelerated Stability study of Majoone Falasifa (A Unani Herbal Formulation'. J bio Sci Opinion 2015; 3187-194.
3. Rashid B, Itrat M, Kha ZA. 'Majoon Falasifa: A Boon from Unani Medicine for Elderly'. J Pharmacol 2016; 6:1-5:193.
4. Younis PM, Rahman K, Rashid B et al. 'Microbial analysis of Majoone Falasifa (A Unani Herbal Formulation' J clin pharmacolmicrobiol Toxicol 2015; 1:32-34.
5. Rao MRK, S Philip, Kumar MH, et al. GC-MS analysis, antimicrobial, antioxidant activity of an Ayurvedic medicine, Salmali Nirysa. J Chem Pharm Res 2015; 7:131-139.
6. Sivakumaran G, Prabhu K, Rao MRK, et al. Gas chromatography-mass spectrometry analysis of one ayurvedic oil, Anu thailam. DIT 2019; 11:2675-2678.
7. Sivakumaran G, Prabhu K, Rao MRK, et al. Gas chromatography-mass spectrometry analysis of one ayurvedic oil, Ksheerabala Thailam. DIT 2019; 11: 2661-2665.
8. Sivakumaran G, Prabhu K, Rao MRK, et al. Gas chromatography-mass spectrometry analysis of one Ayurvedic oil, Triphaladi Thailam. DIT 2019; 11:2679-2683.
9. Narayanan G, Prabhu K, Rao MRK, et al. Gas chromatography-mass spectrometry analysis of one Ayurvedic medicine, Drakshadi Kashayam. DIT 2019; 11: 2652-2656.
10. Narayanan G, Prabhu K, Rao MRK, et al. Gas chromatography-mass spectrometry analysis of one ayurvedic medicine, Kutajarishtam. DIT 2019; 11:2666-2669.
11. Narayanan G, Prabhu K, Rao MRK, et al. Gas chromatography-mass spectrometry analysis of one Ayurvedic antiobesity medicine, Lohasava. DIT 2019; 11:2670-2674.
12. Kumar MH, Prabhu K, Rao MRK, et al. Gas chromatography/mass spectrometry analysis of one Ayurvedic skin oil, Eladi Kera Thailam. DIT 2019; 11:2657-2660.
13. Mohammad H, Prabhu K, Rao MRK, et al. The GC MS study of one Ayurvedic Pain relieving OIL

- "Mahamasha thailam". Drug Discov Today 2019; 12:1524-1527.
14. Mohammad H, Prabhu K, Rao MRK, et al. The GC MS study of one Ayurvedic Pain relieving oil "Karpooradi thailam", Drug Invention Today, 2019; 12:1542-1546.
 15. Prabhu J, Prabhu K, Chaudhury A, et al. Neuro protective role of Saraswatharishtam on Scopolamine induced memory impairment in animal model. Pharmacogn J 2020; 12:465-472.
 16. Prabhu K, Rao MRK, AK Bharath, et al. The GC MS study of one Ayurvedic Rasayana formulation Narasimha Rasayanam. DIT 2020; 13:658-662.
 17. Prabhu K, Rao MRK, Vishal S K, et al. GC MS study of one Ayurvedic Rasayana drug, Dhanwantari Rasayanam. DIT 2020; 14:783-786.
 18. Sharmila D, Poovarasana A, E Pradeep, et al. GC MS analysis of one Ayurvedic formulation, Sitopaladi. RJPT 2021; 14:911-915.
 19. Narayanan G, Prabhu K, Chaudhuri A, et al. Cardio protective role of Partharishtam on isoproterenol induced myocardial infarction in animal model. Pharmacogn J 2021; 13:591-595.
 20. Kalivannan J, Janaki CS, Rao MRK, et al. The GC MS study of one ayurvedic formulation, Chandanasavam. Ind J Nat Sci 2021; 12:33671-33676.
 21. Akshaya SR, Kalaivani S, Prabhu K, et al. The GC MS study of one Ayurvedic churnam, Avalgubijadi churnam. Ind J Nat Sci 2021; 12:34395-34402.
 22. Subbiah AJ, Kavimani M, Rao MRK, et al. The GC MS study of one Ayurvedic. Formulation, Pushyanuga churnam. Ind J Nat Sci 2021; 12:35757-357-366.
 23. Yuvaraj R, Vijayakumar S, Rao M R K et al. The GC MS study of one Ayurvedic medicine Pippalyasavam'. Ind J Nat Sci 2021; 12:35612-35618.
 24. Duke, James A. Dr. Duke's Phytochemical and Ehnobotanical Databases. U.S. Department of Agriculture, Agricultural Research Service. Ag Data Commons, U.S, 2021, 183.