

# The Gas Chromatography Mass Spectroscopy Analysis of One Unani Drug, “Sherbath E-Bailphal”

Hassan mohammad M<sup>1</sup>, Janaki CS<sup>2</sup>, Rao MRK<sup>3\*</sup>, Prabhu K<sup>4</sup>, Deepa K<sup>5</sup>, Franklin<sup>6</sup>, Vijayalakshmi N<sup>7</sup>

<sup>1</sup>Department of Anatomy, Northern Borders University, Arar, Saudi Arabia

<sup>2</sup>Department of Anatomy, Bhaarith Medical College, Chennai, Tamilnadu, India

<sup>3</sup>Department of Anatomy, Amritha University, Thiruporur, Tamil Nadu, India

<sup>4</sup>Department of Anatomy, Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India

<sup>5</sup>Department of Anatomy, Qwest International University, IPOH Perak, Malaysia

<sup>6</sup>Department of Microbiology, CEO Anna Medical College, Mauritius, Montagne Blanche, Island

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

## ABSTRACT

The Unani medicine, Sherbath e-bailphal a health drink made of the pulp of Bail phal, or Bilva (*Aegle marmelos* L). This fruit has many medicinal values and can be taken as a health drink. The medicine was bought from a Unani medicine supplier and was processed suitably to be analysed by GC MS process. The profile showed many molecules, namely, 8-Hydroxy-2, 2, 8-trimethyldeca-5,9-dien-3-one, 5-Hydroxymethylfurfural, 1,15-Pentadecanedioic acid, Methyl 2-hydroxy-octadeca-9,12,15-trienoate, Methyl 3-cis,9-cis,12-cis-octadecatrienoate, (E,Z,Z)-2,4,7-Tridecatrienal, Hexadecanoic acid, cyclohexyl ester etc. which could play the medicinal roles of Sherbath Ibilphal.

**Key words:** GC MS, Unani, Sherbath e-bailphal, 8-Hydroxy-2, 2, 8-trimethyldeca-5,9-dien-3-one, 5-Hydroxymethylfurfural, 1,15-Pentadecanedioic 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, “Sherbath E-Bailphal”, J Res Med Dent Sci, 2022, 10 (9): 121-123.

**Corresponding author:** Dr. Mudiganti Ram Krishna Rao

**E-mail:** editor.pubs@gmail.com

**Received:** 02-Jul-2022, Manuscript No. JRMDs-22-57369;

**Editor assigned:** 05-Jul-2022, Pre QC No. JRMDs-22-57369 (PQ);

**Reviewed:** 19-Jul-2022, QC No. JRMDs-22-57369;

**Revised:** 02-Sep-2022, Manuscript No. JRMDs-22-57369 (R);

**Published:** 08-Sep-2022

## INTRODUCTION

Sherbath e bailphal is the health drink made of the pulp of Bail phal, or Bilva (*Aegle marmelos* L). Bilva has many medicinal roles [1]. Sherbath e-bailphal is taken as health drink particularly during summer as a coolant. 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 [2-20]. The present study in

one step further in this endeavour. Not much work in this direction is reported as far as “Sherbath e-bailphal” is concerned.

## MATERIALS AND METHODS

The medicine Sherbath e-bailphal was bought from Unani medicine supplier and was suitably processed by standard procedures and the GC-MS analysis was performed.

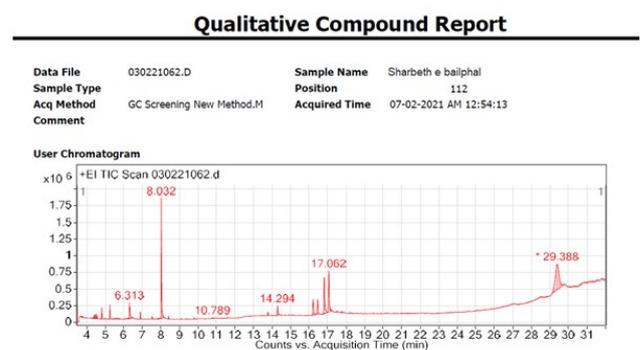
## RESULTS

The gas chromatography mass spectroscopic profile of Sherbath e-bailphal 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 Sherbath e bailphal.**

Ret. Time	Molecule	Mol. Formula	Mol. Mass	% peak Area	Possible Medicinal Role
3.75	8-Hydroxy-2,2,8-trimethyldeca-5,9-dien-3-one	C <sub>13</sub> H <sub>22</sub> O <sub>2</sub>	210.2	0.23	17 beta hydroxysteroid dehydrogenase inhibitor
4.33	10-Chlorodecyl isobutyl carbonate	C <sub>15</sub> H <sub>29</sub> ClO <sub>3</sub>	292.2	0.24	Not known
4.81	Benzene, 1,3-bis(1,1-dimethylethyl)-	C <sub>14</sub> H <sub>22</sub>	190.2	1.76	Not known
6.31	5-Hydroxymethylfurfural	C <sub>6</sub> H <sub>6</sub> O <sub>3</sub>	126	4.08	It is reported to stop neuron apoptosis
8.03	Methylparaben	C <sub>8</sub> H <sub>8</sub> O <sub>3</sub>	152	19.3	Not known
10.79	13-Tetradecenal	C <sub>14</sub> H <sub>26</sub> O	210.2	0.24	Not known
13.78	Palmitoyl chloride	C <sub>16</sub> H <sub>31</sub> ClO	274.2	0.82	Not known
14.29	1,15-Pentadecanedioic acid	C <sub>15</sub> H <sub>28</sub> O <sub>4</sub>	272.2	2.61	Arachidonic acid-Inhibitor, Increase Aromatic Amino Acid Decarboxylase Activity, Inhibit Production of Uric Acid,
16.82	9-Octadecenoic acid, (E)-	C <sub>18</sub> H <sub>34</sub> O <sub>2</sub>	282.3	12.37	Not Known
17.06	Methyl 2-hydroxy-octadeca-9,12,15-trienoate	C <sub>19</sub> H <sub>32</sub> O <sub>3</sub>	308.2	12.8	17 beta hydroxysteroid dehydrogenase inhibitor, aryl hydrocarbon hydroxylase inhibitor, testosterone hydroxylase inducer, Catechol-O-Methyl-Transferase-Inhibitor
17.5	Methyl 3-cis,9-cis,12-cis-octadecatrienoate	C <sub>19</sub> H <sub>32</sub> O <sub>2</sub>	292.2	0.21	Catechol-O-Methyl-Transferase-Inhibitor, Methyl-Donor, Methyl-Guanidine-Inhibitor
17.75	(E,Z,Z)-2,4,7-Tridecatrienal	C <sub>13</sub> H <sub>20</sub> O	192.2	0.52	Provides zinc, anticancer, antidote, Cancer-Preventive, Cytochrome-P450-2E1-Inhibitor, Decreases C telopeptide excretion, decrease deoxyypyridinoline excretion, decreases endothelial leukocyte adhesion, decrease endothelial platelet adhesion, decrease epinephrine production, decreases oxalate excretion.
29.39	Hexadecanoic acid, cyclohexyl ester	C <sub>22</sub> H <sub>42</sub> O <sub>2</sub>	338.3	37.16	Increase Aromatic Amino Acid Decarboxylase Activity, Inhibit Production of Uric Acid

Figure 1 depicts gas chromatography mass spectroscopic profile of Sherbath e-bailphal. The metabolites were identified by comparison 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 [21].



**Figure 1: Shows the gas chromatography mass spectroscopic profile of Sherbath e bailphal.**

## DISCUSSION

The gas chromatography mass spectroscopic profile of Sherbath e-bailphal shows compounds, namely, 8-Hydroxy-2, 2, 8-trimethyldeca-5,9-dien-3-one, 5-Hydroxymethylfurfural, 1,15-Pentadecanedioic acid, Methyl 2-hydroxy-octadeca-9,12,15-trienoate, Methyl 3-cis,9-cis,12-cis-octadecatrienoate, (E,Z,Z)-2,4,7-Tridecatrienal, Hexadecanoic acid, cyclohexyl ester etc. which have medicinal roles, as shown in Table 1. These molecules could be contributing to the cure of diseases for which Sherbath e bailphal is prescribed.

## CONCLUSION

It could be summarized from the results and discussion that Sherbath e-Bailphal does contain important biomolecules which provides a clue to its prescription for the ailments it is given. Some of the molecules shown in the GC MS profile for which the medicinal roles are not known could be further probed.

## ACKNOWLEDGEMENTS

The authors thankfully acknowledge the support of all the people and organizations.

## REFERENCES

- Rahman S, Pravin R. Therapeutic potential of Aegle marmelos L.). An overview. *Asian Pac J of Trop Dis* 2014; 4:71-77.
- Rao MRK, Philip S, Kumar MH, et al. GC-MS analysis, antimicrobial, antioxidant activity of an Ayurvedic medicine, Salmali Niriyasa. *J Chem Pharm Res* 2015; 7:131-139.
- Sivakumaran G, Prabhu K, Rao MRK, et al. Gas chromatography–mass spectrometry analysis of one ayurvedic oil, Anu thailam. *DIT* 2019; 11:2675-2678.
- Sivakumaran G, Prabhu K, Rao MRK, et al. Gas chromatography–mass spectrometry analysis of one ayurvedic oil, Ksheerabala Thailam. *DIT* 2019; 11: 2661-2665.
- Sivakumaran G, Prabhu K, Rao MRK, et al. Gas chromatography–mass spectrometry analysis of one Ayurvedic oil, Triphaladi Thailam. *DIT* 2019; 11:2679-2683.
- Narayanan G, Prabhu K, Rao MRK, et al. Gas chromatography–mass spectrometry analysis of one Ayurvedic medicine, Drakshadi Kashayam. *DIT* 2019; 11: 2652-2656.
- Narayanan G, Prabhu K, Rao MRK, et al. Gas chromatography–mass spectrometry analysis of one ayurvedic medicine, Kutajarishtam. *DIT* 2019; 11:2666-2669.
- Narayanan G, KPrabhu K, Rao MRK, et al. Gas chromatography–mass spectrometry analysis of one Ayurvedic antiobesity medicine, Lohasava. *DIT* 2019; 11:2670-2674.
- 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.
- 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.
- 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.
- 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.
- Prabhu K, Rao MRK, AK Bharath, et al. The GC MS study of one Ayurvedic Rasayana formulation Narasimha Rasayanam. *DIT* 2020; 13:658-662.
- Prabhu K, Rao MRK, Vishal SK, et al. GC MS study of one Ayurvedic Rasayana drug, Dhanwantari Rasayanam. *DIT* 2020; 14:783-786.
- Sharmila D, A Poovarasam, Pradeep E, et al. GC MS analysis of one Ayurvedic formulation, Sitopaladi. *RJPT* 2021; 14:911-915.
- 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.
- Kalivannan J, Janaki CS, Rao MRK, et al. The GC MS astudy of one ayurvedic formulation, Chandanasavam. *Ind J of Nat Sci* 2021; 12:33671-33676.
- Akshaya SR, Kalaivani S, Prabhu K, et al. The GC MS study of one Ayurvedic churnam, Avalgubijadi churnam. *Ind J of Nat Sci* 2021; 12:34395-34402.
- 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.
- Yuvaraj R, Vijayakumar S, Rao MRK, et al. The GC MS study of one Ayurvedic medicine Pippalyasavam’. *Ind J of Nat Sci* 2021; 12:35612-35618.
- Duke, James A. Dr. Duke’s Phytochemical and Ehnobotanical Databases. U.S. Department of Agriculture, Agricultural Research Service. *Ag Data Commons*, U.S, 2021.