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Gas chromatography mass spectroscopic analysis of Rasnadi Churnam

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***Abstract*---**The present work is to analyse one Ayurvedic formulation, Rasnadichurnam by GC MS to know the types of molecules present in it. The medicine was procured from a standard Ayurvedic vendor at Chennai, India and was subjected to Gas Cnromatography Mass Spectroscopic analysis after processing it as per standard protocol. The molecules indicated by the GC MS profile, such as Methyl 4,7,10,13-hexadecatetraenoate, Asarone, Ar-tumerone, Tumerone, trans-2,4-Dimethylthiane, S,S-dioxide, Disulde, di-tert-dodecyl, Piperine, Z-10-Methyl-11-tetradecen-1-ol propionate, .beta.-Amyrin,

4,4,6a,6b,8a,11,11,14b-Octamethyl-,
1,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12,12a,14,14a,14boctadecahydro- etc. have been reported to have some promising medicinal roles which could support the medicinal function of Rasnadichurnam. The molecules depicted by the GC MS profile do have some bearing on the function of Rasnadichurnam as a medicine.

***Keywords*---**GC MS. Rasnadi Chrunam, Ayurvedic, Asaro ne, Artumerone, Tumerone, Piperine.

Introduction

The present work is to subject one Ayurvedic formulation, Rasnadichurnam which is prescribed for sinusitis, giddiness, headache, cold and allergic rhinitis etc. The GC MS analysis of Ayurvedic and other forms of complementary and alternative medicines helps us understand the molecules present in them which could have a bearing in the role the medicine as such. We have reported such reports and the work continues.[1-25]This medicine is applied over the head after mixing with Eranda oil or water or lemon juice. It is prepared by mixing equal quantities of dried powders of the following ingredients. *Alpinia galangal, Withaniasomnifera, Cedrusdeodara, Picrorrhizakurroa, Vateriaindica, Saussurealappa, Acoruscalamus, Red ochre, Curcuma longa, Glycyrrhizaglabra, Side cordifolia, Cuperusrotundus, Piper longum, Piper nigrum, Zingiberofficinale, Holopteleaintegrifolia, Ferula foetida, Hemidesmusindicus, Vetiveriazizanioides,* Cuttlefish bone*, Santalum album, Tamarindusindicus.*This medicine finds its reference in SahasrayogamChurnaprakaranam. The manufacturers of this medicine are AryaVaidyaNilayam, Ashoka pharmaceuticals, AryaVaidyaSalaKottakkal, AryaVaidya Pharmacy etc. among others.

Materials and Methods

Panchagandhachurnamwas subjected to GC MS analysis by standard procedure.

Results

Table 1 and Figure one depict the results of Gas Chromatography Mass Spectroscopic results of Panchagandhachurnam, The metabolites were identified by NIST spectral library and data base of National Agriculture Library, USA and others as shown in Table 1[26].

Discussion

The GC MS profile of Rasnadichurnam indicated the presence of some biomolecules such as Methyl 4,7,10,13-hexadecatetraenoate, Asarone, Artumerone, Tumerone, trans-2,4-Dimethylthiane, S,S-dioxide, Disulde, di-tert-dodecyl, Piperine, Z-10-Methyl-11-tetradecen-1-ol propionate, .beta.-Amyrin, 4,4,6a,6b,8a,11,11,14b-Octamethyl-,
1,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12,12a,14,14a,14boctadecahydro- etc. along with some other molecules whose medicinal properties are unknown, It is interesting

to the medicinal roles of some molecules which have a direct or indirect bearing on the medicinal role of Rasnadichurnam as shown in Table 1.

Conclusion

The biomolecules present in RasnadiChurnam do play some positive role in curing the ailment for which it is prescribed. Further work is warranted in this direction.

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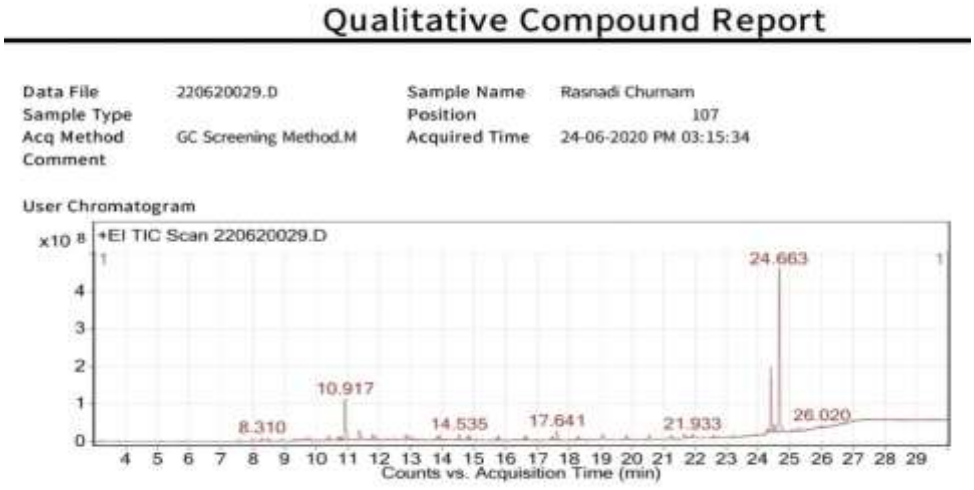

Figure 1. Indicate the GC MS profile of RasnadiChurnam

Table1. Indicate the GC MS profile of PanchagandhaChurnamRasnadiChurnam

Sl. No	Retention Time	Compound Name	Mol. Formula	Mol. Weight	% Peak Area	Possible medical Role
1	8.31	Longifolene	C15H24	204.2	1.01	Not known
4	10.41	Methyl 4,7,10,13-hexadecatetraenoate	C17H26 O2	262.2	1.76	Catechol-O-methyl transferase inhibitor
5	10.69	13-Tetradecenal	C14H26 O	210.2	1.66	Not known
7	10.81	(-)-Isolongifolol, acetate	C17H28 O2	264.2	0.97	Not known
8	10.92	Asarone	C12H16 O3	208.1	17.69	antifungal
9	11.38	Ar-tumerone	C15H20 O	216.2	4.80	Antimicrobial.

10	11.78	Tumerone	C15H22O	218.2	1.80	Antimicrobial.
11	12.84	trans-2,4-Dimethylthiane, S,S-dioxide	C7H14O2S	162.1	1.20	Catechol-o-methyl transferase inhibitor, reverse transcriptase inhibitor, smart drug, anticancer
18	16.60	Disparlure	C19H38O	282.3	1.01	Not known
19	17.50	Heptadecane, 2,6,10,15-tetramethyl-	C21H44	296.3	1.17	Not known
20	17.64	1,3-Bis(cinnamoyloxymethyl)adamantane	C30H32O4	456.2	4.05	Not known
21	19.08	Disulfide, di-tert-dodecyl	C24H50S2	402.3	1.86	Antidote, Coronary dilator, digestive, diuretic, increase super oxide dismutase activity
22	19.83	Octatriacontylpentafluoropropionate	C41H77F5O2	696.6	2.90	Not known
23	20.55	4-Methyldocosane	C23H48	324.4	4.35	Not known
25	21.64	Piperine	C17H19NO3	285.1	3.58	Radio protective, immuno-modulatory, anti-tumor, antidepressant, anticonvulsant, anti-nociceptive,
27	22.59	Z-10-Methyl-11-tetradecen-1-ol propionate	C18H34O2	282.3	1.05	Increases Zinc bioavailability
28	23.23	Dasycarpidan-1-methanol, acetate (ester)	C20H26N2O2	326.2	1.07	Not known
30	24.41	.beta.-Amyrin	C30H50O	426.4	26.67	17 beta hydroxysteroid-dehydrogenase inhibitor, Antiamyloid beta
31	24.52	4,4,6a,6b,8a,11,11,14b-Octamethyl-1,4,4a,5,6,6a,6b,7,8,8a,9,10,11,12,12a,14,14a,14boctadecahydro-	C30H48O	424.4	3.64	Adrenergic blocker, Angiotensinreceptor blocker, anti-acromegalicantiamyloid beta, anticancer, anticholinergic, bronchodilator, antileukotrine-B4, anti TGF beta, Antithromboxane B2
33	25.30	Lup-20(29)-en-3-ol, acetate, (3.beta.)-	C32H52O2	468.4	1.59	Not known