



Research Article

GC-MS ANALYSIS OF BIOACTIVE COMPONENTS ON THE LEAVES EXTRACT OF *ELAEAGNUS CONFERTA* ROXB

Lalitha G ^{1*}, Nazeema T.H ² and Anitha P ¹

¹Assistant Professor, Department of Biochemistry, Rathnavel Subramaniam College of Arts and Science, Sulur, Coimbatore, Tamilnadu, India

²Principal, KSG College of Arts and Science, Coimbatore, Tamilnadu, India

*Corresponding Author Email: lalithajune3@gmail.com

Article Received on: 09/11/18 Approved for publication: 09/02/19

DOI: 10.7897/2230-8407.1004129

ABSTRACT

Elaeagnus conferta Roxb leaf extract were screened for the study of phytochemical analysis with absolute alcohol, the phytochemical compound screened by GC-MS method. From this study, 27 bioactive phytochemical compounds were identified in leaf powder of *Elaeagnus conferta* Roxb. These compounds predominantly contains Phenolic and Flavonoids derivatives, Glycosides, Saponins, Phytosterols compounds, Proteins and alkaloids is found to be limited in the leaf extract. The presence of the active phytochemicals has been found to possess a wide range of activities, which may help in the protection against incurable diseases.

Keywords: GC – MS analysis, Phytochemicals, *Elaeagnus conferta* Roxb leaves

INTRODUCTION

Plants have great potential uses, especially as a traditional medicine and pharmacopoeia drugs¹. Nowadays a large proportion of the world population depends on their traditional medicine due to scarcity and high costs of orthodox medicines². Natural products play an important role in the development of novel drugs lead for the prevention and treatment of diseases³. "*Elaeagnus conferta* Roxb" is an evergreen shrub, often climbing into other plants and growing up to 12m. It originates in tropical Asia, is usually grow in mountain areas. This fruit juice serves as an antidiabetic⁴. The most important bioactive constituents of the plants are alkaloids, flavonoids, phenolic and tannin compounds. Commonly herbal medicines were taken from crude plant extracts, it is composed of different complex mixture of secondary metabolites⁵. The chemical structures of these constituents usually differ among their species. Gas Chromatography – Mass Spectrometry method is used for the analysis of the plant extracts, hence it can be an interesting tool used for identifying the amount of some active compounds in herbs which can be used in drugs, cosmetic, pharmaceutical and food industry⁶. Therefore the present investigation deals with the extraction of essential biological active compounds. This study will help to design the new drugs for many incurable drugs.

MATERIAL AND METHOD

Collection and Identification of Plant Material

The leaves of *Elaeagnus conferta* Roxb. were collected from the Annaikatti hills, Coimbatore District, Tamilnadu, India. The plant was authenticated by Dr. P. Satyanarayana, Botanical Survey of India, Tamil Nadu Agricultural University (TNAU) Campus, Coimbatore. The voucher number is BSI/SRC/5/23/3018/2785/Tech.

Extract Preparation

The fresh leaves were shade dried and powdered. 10g of the powder was taken and macerated in 100 ml of different solvents methanol, ethanol and aqueous. They were kept at room temperature for 24 hours. Thereafter the mixtures were filtered by using Whatman filter paper no .1 it was used for Phytochemical screening. 100g of powder was taken and extracted with 500ml of ethanol using Soxhlet apparatus nearly 6-8 hours and then it was filtered through Whatman filter paper No.1 along with the adding of 2g sodium sulfate, which is used to remove the sediment and traces of excess water in the filtrate. Then the filtrate is concentrated by bubbling nitrogen gas into the solution and reduce the volume to 1ml. The plant extract sample contains polar and non- polar phytoconstituents.

Phytochemical Studies

Preliminary phytochemical screening was performed for various phytoconstituents such as, Alkaloids, Flavonoids, Glycosides, Saponins, Phenols, Sterols, Amino acids, Diterpens and Anthraquinones ⁵.

GC-MS Analysis

Gas Chromatography- Mass Spectrometry analysis was used for the *Elaeagnus conferta* Roxb plant with ethanolic extract. The instrument is composed of DB 35 – MS Capillary Standard non-polar column with dimension of 30mm × 0.25 mm ID × 0.25 µm film, Thermo GC Trace Ultra Version 5.0 Thermo MS DSQII. Helium is used as a carrier gas with at low of 1.0 ml/min. The injector was operated at 250 °C and the oven temperature was further programmed as follows: 60 °C for 15 min, then gradually increased to 280 °C for 3 min. The identification of the

compounds was based upon Willey and NIST library it was attached to the GC- MS instrument and the results obtained have been tabulated⁷.

RESULT AND DISCUSSION

Phytochemical Analysis

The results of the preliminary phytochemical analysis were carried out in extracts of *Elaeagnus conferta* Roxb leaves (Table 1). The experiment showed the presence of secondary metabolites such as alkaloids, flavonoids, phenols, tannins, steroids, saponins and amino acid. The phenols in ethanol, methanol, chloroform and aqueous are found to present in all solvents. The Anthraquinone compound shows absence in all the solvents. Hence the phytochemical screening reveals that Aqueous, Methanol and Chloroform extract shows high secondary metabolites. Thus the preliminary screening analysis is helpful in the detection of bioactive compounds and lead to the discovery and development of novel drugs^{8,9}.

GC- MS Analysis

The GC- MS studies in the ethanolic extract of *Elaeagnus conferta* Roxb. showed the presence of rich variety of phytochemical compounds, The active principles with their retention time (RT), Molecular formula, molecular weight (MW),

concentration (peak area %) are presented in (Figure 1 and Tables 1- 3). Among the identified phytochemicals compounds, p-Cymene compound has the structure of Monoterpene have the property of antioxidant, Hexadecen-1-ol, trans-9-, α -D-Mannofuranoside, 1-O-decyl it shows rich in glycosides thus they have the property of Antimicrobial, Antioxidant activity¹⁰. 2,2,3,3,4,4 hexadeutero octadecanal, Phytol has the anticancer activity¹⁰. Isopropyl myristate shows rich in Fatty acid shows synthetic oil used as an emollient, thickening agent¹¹. 4H-1-Benzopyran-4-one, 2,3-dihydro-5,7-dihydroxy-2-phenyl, rich in flavonoids -(+)-Ascorbic acid 2,6-dihexadecanoate, 1-Heneicosyl formate, these compounds are rich in antioxidant activity¹⁰. 2,2-dideutero octadecanal, Cholestan-3-ol, 2-methylene 1-Docosanol have the property of Anti-inflammatory¹¹. Dotriacontane, Oxiranepentanoic acid, 3-undecyl-, methyl ester, trans, lucenin 2, Colchifoleine, Narceine, Pseudojervine, 2,6,10,14,18,22-Tetracosahexaene these are rich in Phenolic compounds these have the property of Anticancer, antimicrobial, antioxidant activity^{7,10}. 17-Pentatriacontene it have the property of antiseptic, 2-Nonadecanone 2,4-dinitrophenylhydrazine can be used for Fragrance¹¹. 13-Docosenamide it has an antidiabetic property¹⁰. From this study, it reveals the presence of different rich compounds in the whole plant of ethanolic extract of *Elaeagnus conferta* Roxb hence it can be used for various drug formulations.

Table 1: Preliminary qualitative investigation of extracts of *Elaeagnus conferta* Roxb.

S.no	Bioactive Compounds	Ethanol	Methanol	Petroleum ether	Chloroform	Aqueous
1	Alkaloids	+	+	+	+	+
2	Flavonoids	+	+	+	+	-
3	Glycosides	-	-	-	+	+
4	Phenols	+	+	-	+	+
5	Saponins	-	-	+	+	+
6	Tannins	+	+	+	-	+
7	Steroids	+	+	-	-	-
8	Amino acid	+	+	-	+	-
9	Diterpens	+	+	-	+	+
10	Anthraquinones	-	-	-	-	-

+ = Present

- = Absent

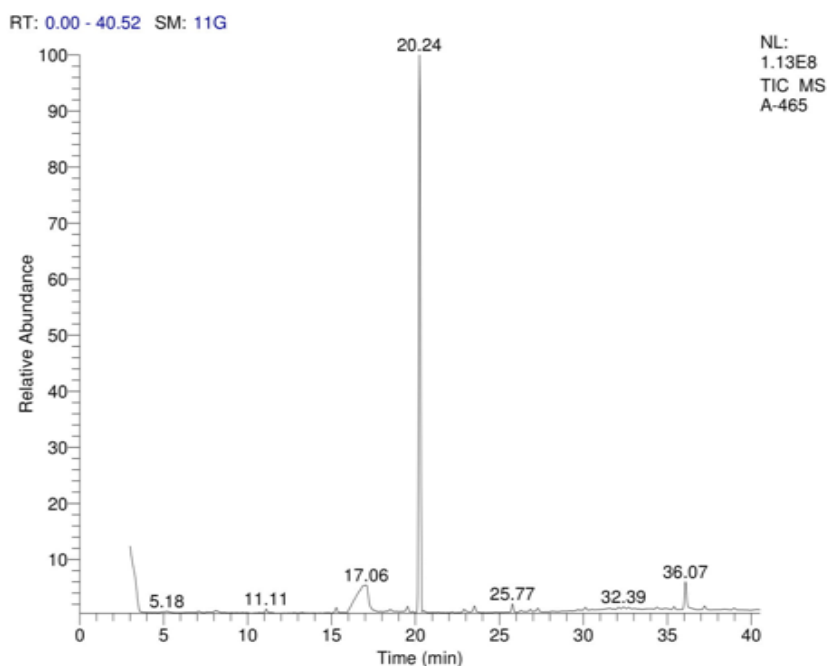
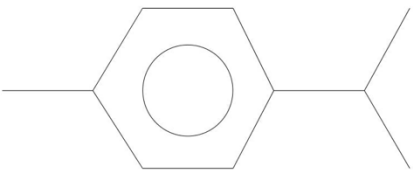
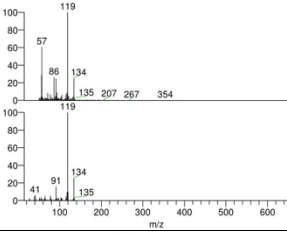
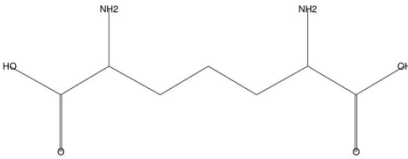
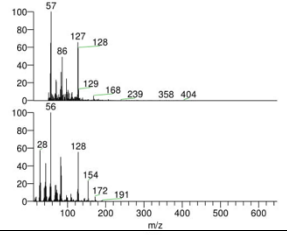
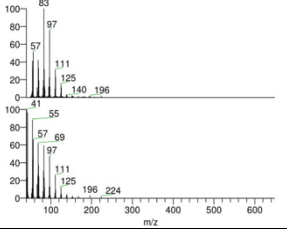


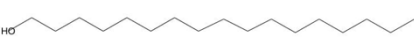
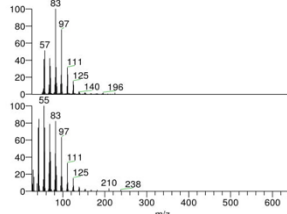
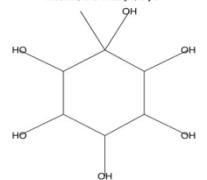
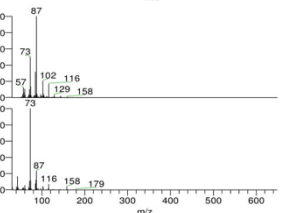
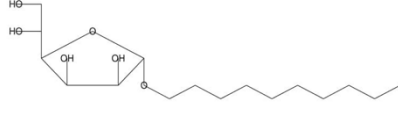
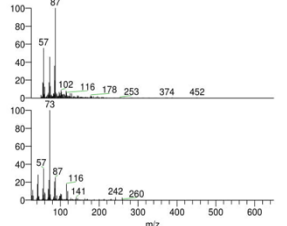
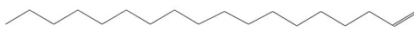
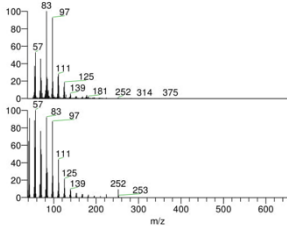
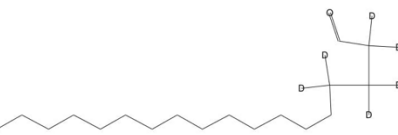
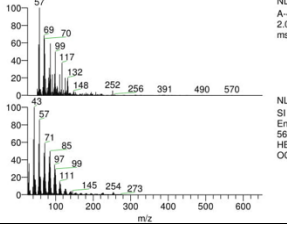
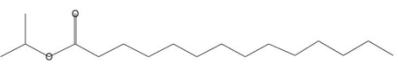
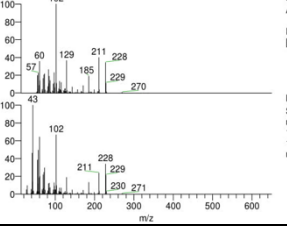
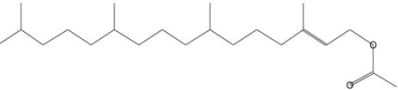
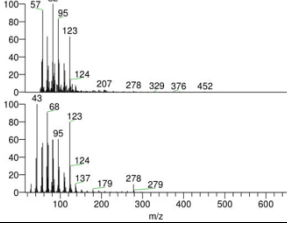
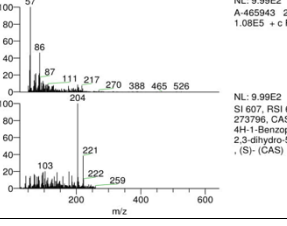
Figure 1: GCMS chromatogram of the ethanolic extract of *Elaeagnus conferta* Roxb.

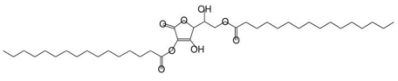
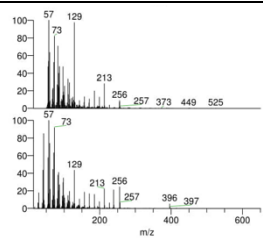
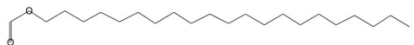
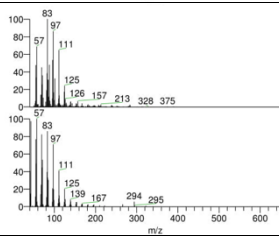
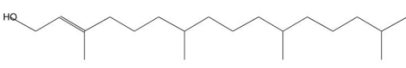
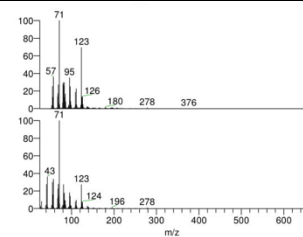
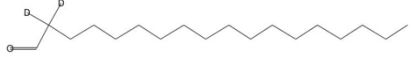
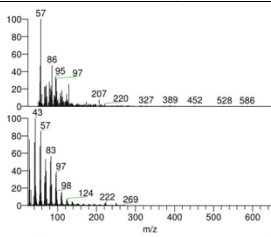
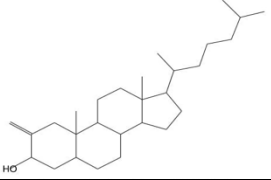
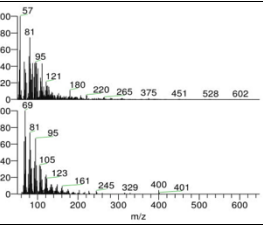
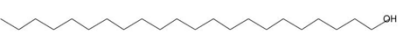
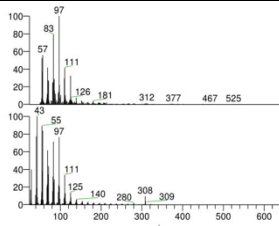
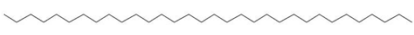
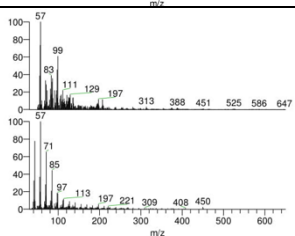
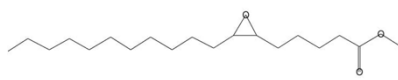
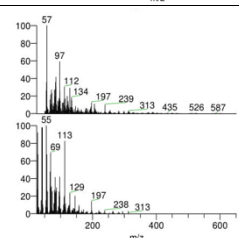
Table 2: Phytochemicals of the ethanolic extract of *Elaeagnus conferta* Roxb. identified by GC-MS analysis

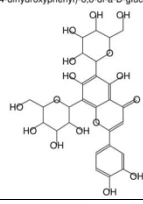
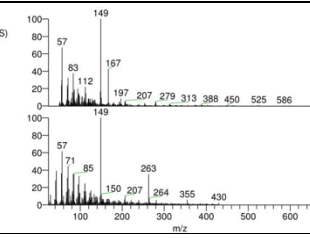
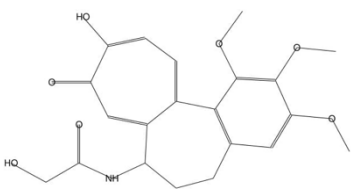
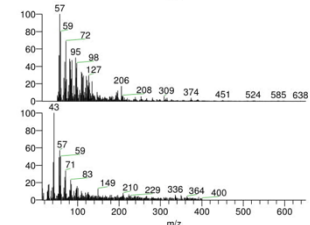
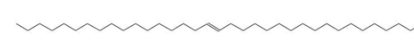
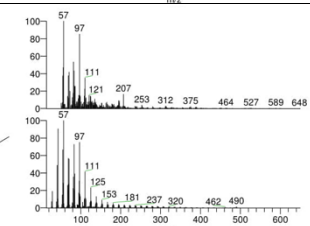
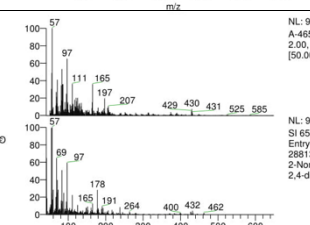
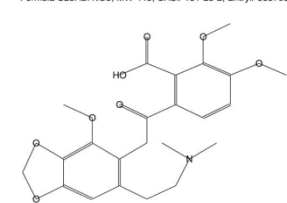
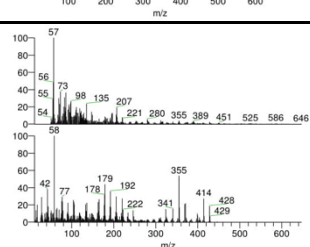
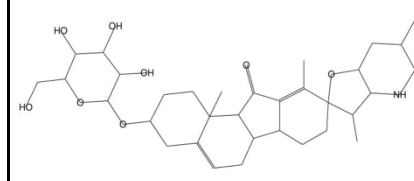
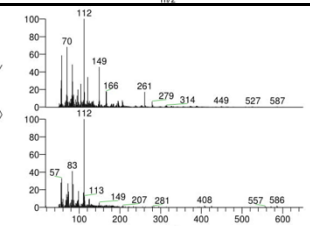
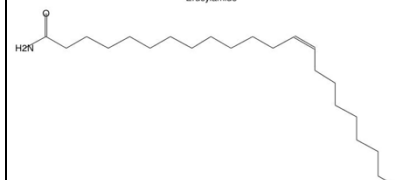
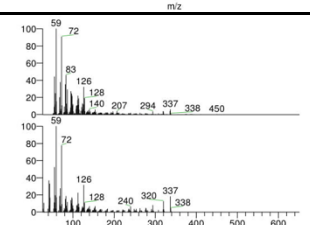
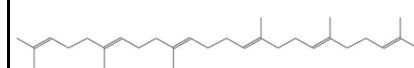
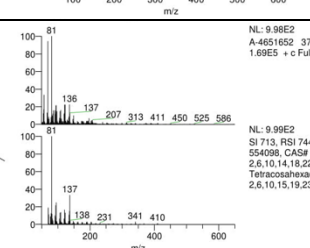
S.No	RT	Name of the compound	Probability	Molecular Formula	MW	Area %
1	7.08	p-Cymene	7.84	C ₁₀ H ₁₄	134	0.21
2	8.12	dl-2,6-Diaminoheptanedioic acid	6.36	C ₇ H ₁₄ N ₂ O ₄	190	0.33
3	11.11	Hexadecen-1-ol, trans-9-	4.56	C ₁₆ H ₃₂ O	240	0.48
4	15.29	1-Hexadecanol	6.24	C ₁₆ H ₃₄ O	242	0.65
5	17.06	Myo-Inositol, 2-C-methyl-	4.27	C ₇ H ₁₄ O ₆	194	13.60
6	18.49	α-D-Mannofuranoside, 1-O-decyl	5.05	C ₁₆ H ₃₂ O ₆	320	0.28
7	19.53	1-Octadecene	7.01	C ₁₈ H ₃₆	252	0.76
8	19.83	2,2,3,3,4,4 Hexadeutero octadecanal	14.89	C ₁₈ H ₃₀ D ₆₀	268	0.12
9	20.24	Isopropyl myristate	32.52	C ₁₇ H ₃₄ O ₂	270	71.85
10	20.51	Phytol, acetate	8.24	C ₂₂ H ₄₂ O ₂	338	0.16
11	22.20	4H-1-Benzopyran-4-one, 2,3-dihydro-5,7-dihydroxy-2-phenyl	18.84	C ₁₅ H ₁₂ O ₄	256	0.14
12	22.89	l-(+)-Ascorbic acid 2,6-dihexadecanoate	14.51	C ₃₈ H ₆₈ O ₈	652	0.40
13	23.51	1-Heneicosyl formate	3.95	C ₂₂ H ₄₄ O ₂	340	0.79
14	25.77	Phytol	53.78	C ₂₀ H ₄₀ O	296	1.11
15	26.27	2,2-Dideutero octadecanal	20.01	C ₁₈ H ₃₄ D ₂ O	268	0.26
16	26.86	Cholestan-3-ol, 2-methylene	5.97	C ₂₈ H ₄₈ O	400	0.37
17	27.28	1-Docosanol	4.72	C ₂₂ H ₄₆ O	326	0.65
18	29.66	Dotriacontane	13.30	C ₃₂ H ₆₆	450	450
19	31.55	Oxiranepentanoic acid, 3-undecyl-, methyl ester, trans	13.42	C ₁₉ H ₃₆ O ₃	312	0.24
20	32.10	Lucenin 2	29.54	C ₂₇ H ₃₀ O ₁₆	610	0.23
21	32.39	Colchifoleine	17.99	C ₂₁ H ₂₃ NO ₇	401	0.28
22	32.69	17-Pentatriacontene	4.90	C ₃₅ H ₇₀	490	0.21
23	34.38	2-Nonadecanone 2,4-dinitrophenylhydrazine	4.62	C ₂₅ H ₄₂ N ₄ O ₄	462	0.27
24	34.85	Narceine	13.74	C ₂₃ H ₂₇ NO ₈	445	0.24
25	35.40	Pseudojervine	12.59	C ₃₃ H ₄₉ NO ₈	587	587
26	36.07	13-Docosenamide	63.80	C ₂₂ H ₄₃ NO	337	3.55
27	37.21	2,6,10,14,18,22-Tetracosahexaene	8.33	C ₃₀ H ₅₀	410	0.45

Table 3: Identified Mass spectrum and Structure of phytochemical compounds of the ethanolic extract of *Elaeagnus conferta* Roxb using GCMS

S.No	Name of the compound	Spectrum and structure of the compound
1	p-Cymene	Formula C₁₀H₁₄, MW 134, CAS# 99-87-6, Entry# 89620 Benzene, 1-methyl-4-(1-methylethyl)-   NL: 9.98E2 A-465201 7.08 1 2.00, 5 1.35E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 680, RSI 720, mainlib, Entry# 89620, CAS# 99-87-6, p-Cymene
2	dl-2,6-Diaminoheptanedioic acid	dl-2,6-Diaminoheptanedioic acid Formula C₇H₁₄N₂O₄, MW 190, CAS# 2577-62-0, Entry# 20426 2,6-Diaminoheptanedioic acid #   NL: 9.99E2 A-465252 8.12 1 2.00, 5 1.20E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 618, RSI 628, mainlib, Entry# 20426, CAS# 2577-62-0, dl-2,6- Diaminoheptanedioic acid
3	Hexadecen-1-ol, trans-9-	Hexadecen-1-ol, trans-9- Formula C₁₆H₃₂O, MW 240, CAS# 64437-47-4, Entry# 2269 (9E)-9-Hexadecen-1-ol   NL: 9.98E2 A-465604 15.29 1 2.00, 5 2.62E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 833, RSI 672, mainlib, Entry# 2269, CAS# 64437-47-4, Hexadecen-1-ol, trans-9-

4	1-Hexadecanol	1-Heptadecanol (CAS) Formula C17H36O, MW 256, CAS# 1454-85-9, Entry# 274979 n-Heptadecanol   NL: 9.98E2 A-465604 15.29 1 2.00, 5 2.62E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 834, RSI 876, Wiley9, Entry# 274979, CAS# 1454-85-9, 1-Heptadecanol (CAS)
5	Myo-Inositol, 2-C-methyl-	Myo-Inositol, 2-C-methyl- Formula C7H14O6, MW 194, CAS# 472-96-8, Entry# 37966 Inositol, 2-C-methyl-, myo-   NL: 9.99E2 A-465691 17.06 1 2.00, 5 1.69E6 + c Full ms [50.00-650.00] NL: 9.99E2 SI 671, RSI 720, mainlib, Entry# 37966, CAS# 472-96-8, Myo-Inositol, 2-C-methyl-
6	à-D-Mannofuranoside, 1-O-decyl	à-D-Mannofuranoside, 1-O-decyl Formula C16H32O6, MW 320, CAS# NA, Entry# 37317 Decyl hexofuranoside #   NL: 9.99E2 A-465761 18.49 1 2.00, 5 1.18E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 620, RSI 658, mainlib, Entry# 37317, CAS# NA, à-D-Mannofuranoside, 1-O-decyl
7	1-Octadecene	1-Octadecene (CAS) Formula C18H36, MW 252, CAS# 112-88-9, Entry# 265774 à-Octadecene   NL: 9.99E2 A-465812 19.53 1 2.00, 5 2.88E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 808, RSI 879, Wiley9, Entry# 265774, CAS# 112-88-9, 1-Octadecene (CAS)
8	2,2,3,3,4,4 hexadeutero octadecanal	2,2,3,3,4,4 HEXADEUTERO OCTADECANAL Formula C18H30D6O, MW 268, CAS# 56554-51-9, Entry# 303205   NL: 9.99E2 A-465827 19.83 1 2.00, 5 9.12E4 + c Full ms [50.00-650.00] NL: 9.99E2 SI 696, RSI 701, Wiley9, Entry# 303205, CAS# 56554-51-9, 2,2,3,3,4,4 HEXADEUTERO OCTADECANAL
9	Isopropyl myristate	Isopropyl myristate Formula C17H34O2, MW 270, CAS# 110-27-0, Entry# 10204 Tetradecanoic acid, 1-methylethyl ester   NL: 9.99E2 A-465847 20.24 1 2.00, 5 2.83E7 + c Full ms [50.00-650.00] NL: 9.99E2 SI 636, RSI 841, mainlib, Entry# 10204, CAS# 110-27-0, Isopropyl myristate
10	Phytol, acetate	Phytol, acetate Formula C22H42O2, MW 338, CAS# NA, Entry# 7996   NL: 9.99E2 A-465860 20.51 1 2.00, 5 1.20E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 727, RSI 765, mainlib, Entry# 7996, CAS# NA, Phytol, acetate
11	4H-1-Benzopyran-4-one, 2,3-dihydro-5,7-dihydroxy-2- phenyl	4H-1-Benzopyran-4-one, 2,3-dihydro-5,7-dihydroxy-2-phenyl-, (S)- (CAS) Formula C15H12O4, MW 256, CAS# 480-39-7, Entry# 273796 5,7-DIHYDROXY-2-PHENYLFLAVONE   NL: 9.99E2 A-465943 22.20 1 2.00, 5 1.08E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 607, RSI 615, Wiley9, Entry# 273796, CAS# 480-39-7, 4H-1-Benzopyran-4-one, 2,3-dihydro-5,7-dihydroxy-2-phenyl- , (S)- (CAS)

12	l-(+)-Ascorbic acid 2,6-dihexadecanoate	l-(+)-Ascorbic acid 2,6-dihexadecanoate Formula C38H68O6, MW 652, CAS# 28474-90-0, Entry# 23751   NL: 9.99E2 A-465977 22.89 1 2.00, 5 1.21E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 750, RSI 756, mainlib, Entry# 23751, CAS# 28474-90-0, l-(+)-Ascorbic acid 2,6-dihexadecanoate
13	1-Heneicosyl formate	1-Heneicosyl formate Formula C22H44O2, MW 340, CAS# 77899-03-7, Entry# 455213 Heneicosyl formate   NL: 9.99E2 A-4651006 23.51 1 2.00, 5 3.02E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 745, RSI 866, Wiley9, Entry# 455213, CAS# 77899-03-7, 1-Heneicosyl formate
14	Phytol	Phytol Formula C20H40O, MW 296, CAS# 150-86-7, Entry# 35090 2-Hexadecen-1-ol, 3,7,11,15-tetramethyl-, [R*(R*),R*(E)]   NL: 9.98E2 A-4651110 25.77 1 2.00, 5 7.04E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 833, RSI 846, mainlib, Entry# 35090, CAS# 150-86-7, Phytol
15	2,2-dideutero octadecanal	2,2-DIDEUTERO OCTADECANAL Formula C18H34D2O, MW 268, CAS# 56555-07-8, Entry# 303204   NL: 9.99E2 A-4651158 26.27 1 2.00, 5 1.08E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 700, RSI 716, Wiley9, Entry# 303204, CAS# 56555-07-8, 2,2-DIDEUTERO OCTADECANAL
16	Cholestan-3-ol, 2-methylene	Cholestan-3-ol, 2-methylene-, (3a,5a)- Formula C28H48O, MW 400, CAS# 22599-96-8, Entry# 32460 5a-Cholestan-3a-ol, 2-methylene-   NL: 9.99E2 A-4651158 26.86 1 2.00, 5 9.76E4 + c Full ms [50.00-650.00] NL: 9.99E2 SI 710, RSI 781, mainlib, Entry# 32460, CAS# 22599-96-8, Cholestan-3-ol, 2-methylene-, (3a,5a)-
17	1-Docosanol	1-Docosanol (CAS) Formula C22H46O, MW 326, CAS# 661-19-8, Entry# 429316 Behenic alcohol   NL: 9.99E2 A-4651176 27.28 1 2.00, 5 1.42E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 761, RSI 791, Wiley9, Entry# 429316, CAS# 661-19-8, 1-Docosanol (CAS)
18	Dotriacontane	Dotriacontane (CAS) Formula C32H66, MW 450, CAS# 544-85-4, Entry# 589615 n-Dotriacontane   NL: 9.99E2 A-4651281 29.66 1 2.00, 5 8.28E4 + c Full ms [50.00-650.00] NL: 9.99E2 SI 698, RSI 757, Wiley9, Entry# 589615, CAS# 544-85-4, Dotriacontane (CAS)
19	Oxiranepentanoic acid, 3-undecyl-, methyl ester, trans	Oxiranepentanoic acid, 3-undecyl-, methyl ester, trans- (CAS) Formula C19H36O3, MW 312, CAS# 8175-11-7, Entry# 400609 METHYL TRANS-6,7-EPOXISTEARATE   NL: 9.99E2 A-4651374 31.55 1 2.00, 5 6.32E4 + c Full ms [50.00-650.00] NL: 9.99E2 SI 643, RSI 697, Wiley9, Entry# 400609, CAS# 8175-11-7, Oxiranepentanoic acid, 3-undecyl-, methyl ester, trans- (CAS)

20	Lucenin 2	Lucenin 2 Formula C27H30O16, MW 610, CAS# 29428-58-8, Entry# 645795 4H-1-Benzopyran-4-one, 2-(3,4-dihydroxyphenyl)-6,8-di-α-D-glucopyranosyl-5,7-dihydroxy- (CAS)   NL: 9.99E2 A-4651401 32.10 1 2.00, 5 1.84E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 695, RSI 701, Wiley9, Entry# 645795, CAS# 29428-58-8, Lucenin 2
21	Colchifoleine	Colchifoleine Formula C21H23NO7, MW 401, CAS# 78517-64-3, Entry# 543651   NL: 9.99E2 A-4651415 32.39 1 2.00, 5 9.97E4 + c Full ms [50.00-650.00] NL: 9.99E2 SI 671, RSI 688, Wiley9, Entry# 543651, CAS# 78517-64-3, Colchifoleine
22	17-Pentatriacontene	17-Pentatriacontene Formula C35H70, MW 490, CAS# 6971-40-0, Entry# 22797 (17E)-17-Pentatriacontene #   NL: 9.99E2 A-4651430 32.69 1 2.00, 5 1.28E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 697, RSI 719, mainlib, Entry# 22797, CAS# 6971-40-0, 17-Pentatriacontene
23	2-Nonadecanone 2,4-dinitrophenylhydrazine	2-Nonadecanone 2,4-dinitrophenylhydrazine Formula C29H42N2O4, MW 462, CAS# 28813-61-8, Entry# 23031 2-Nonadecanone, (2,4-dinitrophenyl)hydrazide   NL: 9.99E2 A-4651513 34.38 1 2.00, 5 8.18E4 + c Full ms [50.00-650.00] NL: 9.99E2 SI 657, RSI 690, mainlib, Entry# 23031, CAS# 28813-61-8, 2-Nonadecanone 2,4-dinitrophenylhydrazine
24	Narceine	Narceine Formula C23H27NO8, MW 445, CAS# 131-28-2, Entry# 585708   NL: 9.99E2 A-4651536 34.85 1 2.00, 5 9.28E4 + c Full ms [50.00-650.00] NL: 9.99E2 SI 597, RSI 632, Wiley9, Entry# 585708, CAS# 131-28-2, Narceine
25	Pseudojervine	Pseudojervine Formula C33H49NO8, MW 587, CAS# 36069-05-3, Entry# 641971   NL: 9.99E2 A-4651563 35.40 1 2.00, 5 1.19E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 626, RSI 702, Wiley9, Entry# 641971, CAS# 36069-05-3, Pseudojervine
26	13-Docosenamide	13-Docosenamide, (Z)- Formula C22H43NO, MW 337, CAS# 112-84-5, Entry# 27662 Eucylamide   NL: 9.98E2 A-4651596 36.07 1 2.00, 5 9.42E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 785, RSI 816, mainlib, Entry# 27662, CAS# 112-84-5, 13-Docosenamide, (Z)-
27	2,6,10,14,18,22-Tetracosahexaene	2,6,10,14,18,22-Tetracosahexaene, 2,6,10,15,19,23-hexamethyl- (CAS) Formula C38H50, MW 410, CAS# 7583-64-5, Entry# 554098 Squalene   NL: 9.98E2 A-4651652 37.21 1 2.00, 5 1.69E5 + c Full ms [50.00-650.00] NL: 9.99E2 SI 713, RSI 744, Wiley9, Entry# 554098, CAS# 7583-64-5, 2,6,10,14,18,22- Tetracosahexaene, 2,6,10,15,19,23-hexamethyl- (CAS)

CONCLUSION

Elaeagnus conferta Roxb ethanolic plant extract was analysed by GC – MS analysis which shows the presence of 27 rich varieties of bioconstituents. Among the different identified compounds namely, Lucenin 2, Phytol, Colchifoleine, 2,6,10,14,18,22-Tetracosahexaene, octadecanoic acid, n-hexadecanoic acid, Pseudojervine, Docosanol have the role in antioxidant, anticancer and antimicrobial activities. Hence from this study it can be proved that this plant has been used as a new potential source for drug formulations.

REFERENCES

1. Siegel R, Ma J, Zou Z. Cancer Statistics. Cancer Journal for Clinicians 2014; 64(1):9-29.
2. Srinivasa U, Amrutia Jay N, Reena K, Moses Semeul Rajan. Preliminary phytochemical investigation and Anthelmintic activity of *Morgina oleifera* leaves. International Research Journal of Pharmacy 2011; 2(8):130-131.
3. Velmurugan P, Kamaraj M, Prema D. Phytochemical constituents of *Cadaba Trifoliata* Roxb. root extract. International Journal of Phytomedicine 2010; 2:379.
4. Ragahavendra P, Devi AG, Shyma TB. Investigations of Anti- diabetic medicinal plants used by tribes of Wayanad district, Kerala. International Journal of Pharmaceutical sciences and research 2015; Vol. 6(8):3617-3625.
5. Lalitha G , Dr.Nazeema TH, Sharmila L. Phytochemical screening and evaluation of Antimicrobial activity, Antioxidant activity, Anticoagulant activity and Fibrinolytic activity of leaves of *Andrographis paniculata* (leaf). International Journal of Pharma and Biosciences 2015;6(2):475-484.
6. Uma B, Prabhakar K, Rajendran S, Sarayu LY. Studies on GC/MS spectroscopic analysis of some bioactive antimicrobial compounds from *Cinnamomum zeylanicum*. Journal of Medicinal Plants 2009; 8(31):125–131.
7. Paul John Peter J, Yesu Raj, Prabhu Sici VP , Joy V, Saravanan J, Sakthivel S.GC-MS Analysis of bioactive components on the Leaves extract of *Stylosanthes fruticosa*-A potential folklore medicinal plant. Asian Journal of Plant Science Research 2012; 2 (3):243-253.
8. Adams J, Pepping J. Vitamin K in the treatment and prevention of osteoporosis and arterial calcification. American Journal of Health System Pharmacy 2005; 1: 62(15):1574-81.
9. Mallikharjuna PB, Rajanna LN, Seetharam YN, Sharanabasappa GK. Phytochemical Studies of *Strychnos potatorum* L.f.-A Medicinal Plant. E Journal of Chemistry 2007; 4(4): 510-518.
10. Duraisamy Gomathi L, Manokaran Kalaiselvi, Ganesan Ravikumar, Kanakasabapathi Devaki, Chandrasekar Uma. GC-MS analysis of bioactive compounds from the whole plant ethanolic extract of *Evolvulus alsinoides* (L.). Journal of Food Science Technology 2015; 52(2):1212–1217.
11. Hazarika S, Goswami N, Dutta NN, Hazarika A, Ethyl oleate synthesis by porcine pancreatic lipase in organic solvent. Journal of Chemical Engineering 2002; 85:61–68.

Cite this article as:

Lalitha G et al. GC-MS analysis of bioactive components on the leaves extract of *Elaeagnus conferta* Roxb. Int. Res. J. Pharm. 2019;10(4):83-89 <http://dx.doi.org/10.7897/2230-8407.1004129>

Source of support: Nil, Conflict of interest: None Declared

Disclaimer: IRJP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IRJP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of IRJP editor or editorial board members.