

List of Publications

List of papers published / communicated

1. **Lalitharani, S., Mohan, V.R., Ragini, G.S. and Kalidass, C. 2009.** GC-MS analysis of ethanolic extract of *Pothos scandens* leaf. *J. Herbal. Med & Toxicology*. **3**: 159-160.
2. **Lalitharani, S., Mohan, V.R. and Ragini, G.S. 2009.** GC-MS analysis of ethanolic extract of *Zanthoxylum rhetsa* (Roxb) DC spine. *J. Herbal. Med & Toxicology*. (in press)
3. **Lalitharani, S., Mohan, V.R. and Ragini, G.S. 2009.** Ethnomedicinal plants used by *Kanikkars* of Chinna and Periya Mylar regions of Agasthiarmalai Biosphere Reserve, Tamil Nadu. *J. Non.Tim. For. Prod.* (communicated)
4. **Lalitharani, S., Mohan, V.R. and Ragini, G.S. 2009.** Ethnomedicinal plants used by *Kanikkars* of Karaiyar of Agasthiarmalai Biosphere Reserve, Tamil Nadu. *J. Econ. Taxon. Bot.* (communicated)

GC-MS ANALYSIS OF ETHANOLIC EXTRACT OF *POTHOS SCANDENS* LEAF

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ABSTRACT: *Pothos scandens* L. known to the Kanikkars as "Paraioutan" is an important medicinal plants. The Kanikkar tribe, inhabitants of the Agasthiamalai Biosphere Reserve, Western Ghats, Tamil Nadu, India, use this plant to reduce body heat and helps in conception. The present investigation deals with GC-MS analysis of ethanolic extract of the above said plant. Nineteen compounds were identified.

Key words: *Pothos scandens* L., Kanikkar , GC-MS analysis.

INTRODUCTION

The *Pothos scandens* L. belongs to family Araceae. It is commonly known as "Paraioutan" in Kanikkar tribals of Agasthiamalai Biosphere Reserve, Western Ghats, Tamil Nadu. Kanikkars tribe, use leaf of this plant to reduce body heat and helps in conception. To our knowledge, no chemical study has been previously reported on this plant. The present communication deals with the GC-MS analysis of ethanolic extracts of said plant leaf.

MATERIALS AND METHODS

The leaves of *Pothos scandens* L. were collected from the Karaiyar, Agasthimalai Biosphere Reserve, Western Ghats, Tamil Nadu. The leaf samples were air dried and powdered. Required quantity of powder was weighted and transferred to stopped flask and treated with the ethanol until the powder is fully immersed. The flask was shaken every hour for the first 6 hours and then it was kept aside and again shaken after 24 hours. This process was repeated for 3 days and then the extract was filtered. The extract was collected and evaporated to dryness by using a vacuum distillation unit. The final residue thus obtained was then subjected to GC-MS analysis.

GC-MS analysis

GC-MS was performed with GC Clarus 500 Perkin Elmer equipment. Compounds were separated on Elite-1 capillary column (100% Dimethylpolysiloxane). Samples were injected with a split ratio of 10:1 with a flow rate of helium 1 ml/min. (carrier gas). Mass detector - Turbo Mass gold - Perkin Elmer Software- Turbomass 5.1 was used as a detector. Other conditions are oven temperature up to 110° - 2 min. hold; up to 280° at the rate of 5 deg/min⁻⁹ minutes hold. Injector temperature was maintained at 250°C. The constituents were identified after comparison with those available in the Computer Library (NIST ver. 2.1) attached to the GC-MS instrument and reported.

RESULTS AND DISCUSSION

The results pertaining to the GC-MS analysis are given in Table 1. Nineteen compounds were detected in ethanolic extracts of *Pothos scandens* leaf. The results revealed that 1,2-Benzenedicarboxylic acid, diisooctylestr (75.51%) was found as major component followed by n- Hexadecanoic acid (7.76%), 9,12,15-Octadecatrienoic acid, (Z,Z,Z)- (5.11%), Octadecanoic acid (2.48%), Phytol (1.76%)

Table 1: Components detected in *Pothos scandens* leaf extract

No	RT	Name of the compound	Molecular Formula	MW	Peak Area %	Compound Nature
1	2.68	Butane, 1,1-diethoxy-	C ₈ H ₁₈ O ₂	146	0.90	Ether compound
2	2.76	d-Mannose	C ₆ H ₁₂ O ₆	180	0.40	Sugar
3	4.02	Hexanoic acid, ethyl ester	C ₈ H ₁₆ O ₂	144	0.31	Fatty acid ester
4	5.01	Propane, 1,1,3-triethoxy-	C ₉ H ₂₀ O ₃	176	0.23	Ether compound
5	5.32	2-Hexadecanol	C ₁₆ H ₃₄ O	242	0.10	Alcohol
6	6.26	4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6-methyl-	C ₆ H ₈ O ₄	144	0.19	Flavonoid fraction
7	8.55	1-Hexadecanol, 2-methyl-	C ₁₇ H ₃₆ O	256	0.21	Alcohol compound
8	11.66	Dodecanoic acid	C ₁₂ H ₂₄ O ₂	200	0.38	Lauric acid
9	14.00	Azulene, 1,4-dimethyl-7-(1-methylethyl)-	C ₁₅ H ₁₈	198	0.25	Hydrocarbon
10	14.36	Tetradecanoic acid	C ₁₄ H ₂₈ O ₂	228	0.41	Myristic acid
11	15.55	3,7,11,15-Tetramethyl-2-hexadecen-1-ol	C ₂₀ H ₄₀ O	296	0.95	Terpene alcohol
12	16.20	Ethanol, octadecenyloxy)-, (Z)-	2-(9- C ₂₀ H ₄₀ O ₂	312	0.25	Ethanol compound
13	17.39	n-Hexadecanoic acid	C ₁₆ H ₃₂ O ₂	256	7.76	Palmitic acid
14	19.80	Phytol	C ₂₀ H ₄₀ O	296	1.76	Diterpene
15	20.10	9,12-Octadecadienoic acid (Z,Z)-	C ₁₈ H ₃₂ O ₂	280	1.59	Linoleic acid
16	20.20	9,12,15-Octadecatrienoic acid, (Z,Z,Z)-	C ₁₈ H ₃₀ O ₂	278	5.11	Linolenic acid
17	20.53	Octadecanoic acid	C ₁₈ H ₃₆ O ₂	284	2.48	Stearic acid
18	25.63	1-Monolinoleoylglycerol trimethylsilyl ether	C ₂₇ H ₅₄ O ₄ Si ₂	498	1.21	Silica compound
19	26.30	1,2-Benzenedicarboxylic acid, diisooctyl ester	C ₂₄ H ₃₈ O ₄	390	75.51	Plasticizer compound

and 9,12-Octadecadienoic acid (Z,Z)- (1.58%) were found as the other major components in the ethanolic extract of *Pothos scandens* leaf. In the present study, the GC-MS analysis of *Pothos scandens* leaf revealed the presence of Dodecanoic acid, tetradecanoic acid, 3, 7, 11, 15- Tetramethyl-2-hexadecan 1 ol, n-Hexadecanoic acid, phytol, 9, 12, Octadecaadienoic acid (Z,Z)-, 9,12,15, Octadecatrienoic acid (Z,Z,Z)-1,2-Benzenedicarboxylic acid, diisooctylester. Among the identified phytochemicals, Dodecanoic acid,

Tetradecanoic acid and n-Hexadecanoic acid have the property of antioxidant activity. 9,12, Octadecadienoic acid (Z,Z) – and 9, 12, 15- Octadecatrienoic acid (Z,Z,Z) – have the property of anti-inflammatory and antiarthritic as reported by earlier worker [1].

REFERENCE

[1] Jones P.J. CMAJ, 166: 1555-1563. (2002)