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<u>Product Feature Claim and Scientific Validation</u>

Summary Of Innovation:-

- Modern Science tells us that all types of burning results in CO_2 emission but in the case of our innovation for which we filed patent, it is not so, lighting Panchagavya in combination with Herbs does not produce CO_2 & in fact when we light it with Ghee, promotes the Oxygen in the Environment.
- SGS test result of our Diya named Panchagavya Mahalakshmi Thiruvilaku, Mani Dhoop, T Light Panchagavya Candle indicate all core and carcinogenic carbon compounds are absent i.e., below the deduction level (PPM – Particle per million) in GCMS analysis, it is showing higher molecular weight n-alkane is present while lighting Diya (The International Union of Pure and Applied Chemistry (IUPAC) define C17- C40 as the long carbon chain n-alkane).
- n-alkane are valid proxies/indicator/markers of climate and environmental implication for the paleo climate and paleo environment reconstruction.
- Write up on Social impact kept in side each product and product attributes are printed on the packaging for broader understanding.
- Water is not at all used from manufacturing to disposal of Diya .No Electrical power is needed to manufacture diyas.

Please correlate the above with SGS test report , Test Note attached and Research article Published by Chinese Science Bulleting May 2011 Vol 56 NO 14 1503-1510

Test Report

SAMPLE NOT DRAWN BY SGS INDIA PVT. LTD.

Print Date : 16/01/2018

Report No : CG18-000128.001 **JOE No** : CG18-000128

Report Control No : CGR0000827280

Sample described by customer as : PANCHAGAVYA MAHALAKSHMI THIRUVILAKU (PATENT FORMULATION)

Customer Name	: THE ZERO BRAND ZONE PRIVATE LIMITED
Customer Address	: 506, 5TH FLOOR SRISHTI PLAZA, OFF SAKIVIHAR ROAD
	: CHANDIVALI POWAI
Postal Code	: 400072
State	: Maharashtra
Country	: INDIA
Sample Type	: PANCHAGAVYA MAHALAKSHMI THIRUVILAKU (PATENT FORMULATION)
Received	: 04/01/2018
Sample Qty. Recd.	: 6G X 100
Batch No.	: 1
Mfg Date	: NOV 2017
Test Start	: 04/01/2018
Test End Date	: 16/01/2018

Test/Parameter	Method	Result	Unit
pH	FCO 1985 (Amended-2017)	7.7	-
Electrical conductivity	FCO 1985 (Amended-2017)	5178	µS/cm
Total nitrogen	FCO 1985 (Amended-2017)	1.51	% (w/w)
Total Phosphorous (as P)	FCO 1985 (Amended-2017)	0.824	% (w/w)
Potassium content (as K)	FCO 1985 (Amended-2017)	0.88	% (w/w)
Sulphate sulphur (as S)	FCO 1985 (Amended-2017)	0.18	% (w/w)
Calcium (as Ca)	FCO 1985 (Amended-2017)	0.64	% (w/w)
Magnesium (as Mg)	FCO 1985 (Amended-2017)	0.50	% (w/w)
Sodium (as Na)	FCO 1985 (Amended-2017)	0.64	% (w/w)
Iron (as Fe)	FCO 1985 (Amended-2017)	0.22	% (w/w)
Manganese (as Mn)	FCO 1985 (Amended-2017)	0.04	% (w/w)
Boron (as B)	FCO 1985 (Amended-2017)	0.001	% (w/w)
Zinc (as Zn)	FCO 1985 (Amended-2017)/ICPOES	0.006	% (w/w)
Copper (as Cu)	FCO 1985 (Amended-2017)	0.002	% (w/w)
Chloride (as Cl)	FCO 1985 (Amended-2017)	0.01	% (w/w)

Test Report

SAMPLE NOT DRAWN BY SGS INDIA PVT. LTD.

Print Date : 16/01/2018

Report No : CG18-000128.001

JOE No : CG18-000128

Report Control No : CGR0000827280

Test/Parameter	Method	Result	Unit
C 4:0 Butyric Acid	IS0 5508 :1990 & 5509 : 2000	<0.01	g /100 g
C 6:0 Caproic acid	IS0 5508 :1990 & 5509 : 2000	<0.01	g /100 g
C14:0 Myristic Acid	IS0 5508 :1990 & 5509 : 2000	<0.01	g /100 g
C16:0 Palmitic Acid	IS0 5508 :1990 & 5509 : 2000	0.18	g /100 g
C18:1 Oleic Acid	IS0 5508 :1990 & 5509 : 2000	0.38	g /100 g
Propyl Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,1,1,2-Tetrachloroethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,1,1-Tri Chloro Ethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,1,2,2-Tetra Chloro Ethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,1,2-Tri Chloro Ethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,1-DiChloro Ethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,1-DiChloro Ethene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,1-Dichloroprpane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,2-3-Tri Chloro Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,2-3-Tri Chloro Propane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,3-5-Tri Methyl Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,2-4-Tri Chloro Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,2-4-Tri Methyl Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,2-Di Chloro Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,2-Dibromo-3-chloro Propane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,2-Dibromo-Methane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,2-DiChloro Ethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,2-DiChloro Propane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,3-DIChloro Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,3-Dichloroprpane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
1,4-DIChloro Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
2,2-Dichloroprpane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
2-Chloro Toluene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
4-Chloro Toluene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
4-Iso Propyl Toluene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Bromo Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Bromo Chloro Methane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Bromo Dichloro Methane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Bromoform	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Bromomethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Carbon Tetra Chloride	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Chloro Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Chloro Ethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Chloro Methane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Chloroform	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
CIS-1,2-DiChloro Ethene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Cis1,3-Dichloropropene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Dibromochloro Methane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Dibromo-Methane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm

Test Report

SAMPLE NOT DRAWN BY SGS INDIA PVT. LTD.

Print Date : 16/01/2018

Report No : CG18-000128.001

JOE No : CG18-000128

Report Control No : CGR0000827280

Test/Parameter	Method	Result	Unit
Dichloro Methane	QUALITATIVE(GCMS HEADSPACE)	3.6	ppm
Dichlorodifluromethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Ethyl Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Hexachloro1,3Butadiene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Iso Propyl Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Methyl isobutyl ketone	QUALITATIVE(GCMS HEADSPACE)	Absent.	ppm
m-Xylene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Napthalene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
n-Butyl Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
p-Xylene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Sec-Propylbenzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Styrene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Ter-Butyl Benzene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Tetra Chloro Ethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Toluene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Trans-1,2-DiChloro Ethene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Trans1,3-Dichloropropene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Trichloro Ethylene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Trichlorofluromethane	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Xylene	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
vinylchloride	QUALITATIVE(GCMS HEADSPACE)	BDL(DL:1.0)	ppm
Volatile Organic Compound	QUALITATIVE(GCMS HEADSPACE)	3.6	ppm
Methanol	GC-MS Head Space/SGS PCIHM-0005A	BDL(DL:1.0)	mg/kg
Propanol	GC-MS Head Space/SGS PCIHM-0005A	BDL(DL:1.0)	mg/kg
Butanol	GC-MS Head Space/SGS PCIHM-0005A	BDL(DL:1.0)	mg/kg
Ethanol	GC-MS Head Space/SGS PCIHM-0005A	BDL(DL:1.0)	mg/kg
C8-Octane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C9-Nonane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C10-Decane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C11-Undecane	USEPA 8015 B / NWTPH-HCID	0.52	mg/kg
C12-Dodecane	USEPA 8015 B / NWTPH-HCID	0.36	mg/kg
C13-Tridecane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C14-Tetradecane	USEPA 8015 B / NWTPH-HCID	0.49	mg/kg
C15-Pentadecane	USEPA 8015 B / NWTPH-HCID	3.74	mg/kg
C16-Hexadecane	USEPA 8015 B / NWTPH-HCID	16.73	mg/kg
C17-Heptadecane	USEPA 8015 B / NWTPH-HCID	1.78	mg/kg
C18-Octadecane	USEPA 8015 B / NWTPH-HCID	0.82	mg/kg
C19-Nonadecane	USEPA 8015 B / NWTPH-HCID	6.12	mg/kg
C20-Eicosane	USEPA 8015 B / NWTPH-HCID	0.25	mg/kg
C21-Henecosane	USEPA 8015 B / NWTPH-HCID	0.05	mg/kg
C22-Docosane	USEPA 8015 B / NWTPH-HCID	0.05	mg/kg
C23-Tricosane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C24-Tetracosane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C25-Pentacosane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg

Test Report

SAMPLE NOT DRAWN BY SGS INDIA PVT. LTD.

Print Date : 16/01/2018

Report No : CG18-000128.001 **JOE No** : CG18-000128

Report Control No : CGR0000827280

Test/Parameter	Method	Result	Unit
C26-Hexacosane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C27-Heptacosane	USEPA 8015 B / NWTPH-HCID	0.05	mg/kg
C28-Octacosane	USEPA 8015 B / NWTPH-HCID	0.08	mg/kg
C29-Nonacosane	USEPA 8015 B / NWTPH-HCID	0.06	mg/kg
C30-Tricontane	USEPA 8015 B / NWTPH-HCID	2.72	mg/kg
C31-Hentriacontane	USEPA 8015 B / NWTPH-HCID	11.26	mg/kg
C32-Dotriacontane	USEPA 8015 B / NWTPH-HCID	0.09	mg/kg
C33-Triacontane	USEPA 8015 B / NWTPH-HCID	2.61	mg/kg
C34-Tetratriacontane	USEPA 8015 B / NWTPH-HCID	88.18	mg/kg
C35-Pentatriacontane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C36-Hexatriacontane	USEPA 8015 B / NWTPH-HCID	1.71	mg/kg
C37-Heptatriacontane	USEPA 8015 B / NWTPH-HCID	54.53	mg/kg
C38-Octatriacontane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C39-Nonatriacontane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg
C40-Tetracontane	USEPA 8015 B / NWTPH-HCID	<0.05	mg/kg

Remark : The above results are in as received basis

Per pro SGS India Private Ltd

L_SIVAKUMAR
Authorized Signatory

Per pro SGS India Private Ltd

M Elaiyaperumaal
Authorized Signatory

****End of Report****

a. In view of the SGS India Pvt. Ltd. lab test report of the composition of the present invention (annexed herewith as **Annexure 1**), it is submitted that the present invention not only promotes Oxygen but also mitigates the Carbon in the atmosphere while in use and after its burning.

b. At Page 2 and 3 of SGS test report, in result column BDL denotes the Below Deduction level and DL mentions Deduction level of the carbon compound @ machine level are below the Deduction level. Hence no carbon is traced in Gas Chromatography–mass spectrometry GCMS while burning.

c. The report shows dominance of Carbon Compound (C_{12} to C_{40} is n- alkane) (refer page 3 to 4 of the SGS test report). Their presence is indicative that the lamp of the present invention on burning mitigate the carbon in the Envoirnment. It is submitted that n-alkane are valid proxies for paleo-climate and paleo-envoirnmnt reconstruction.

d. It is respectfully submitted that there is hardly any carbon footprint post burning of lamp of the present invention as evident from the analysis using Gas Chromatography (GC).(refer page 2 and 3 of the SGS test report)

e. Only the presence of higher n alkanes (higher chain length hydrocarbons) are reported in the GC analysis of ash which are actually the bye-products of pyrolysis. i.e., the thermal decomposition achieved by complete burning of the panchagavya base formulation of the lamp of the present invention without ghee and wick) of herbage derived plant based macromolecules.

f. These n-alkanes help as bio markers to study the evolution of plants in the ecosystem for paleo-reconstruction of environment and climate. The n-alkanes present in aerosols due to the burning of panchagavya lamp of the present invention enter the carbon fixation cycle (from plant to cow dung and back to plant) which is a short-term sequestration process (few months) employed by nature using bio-degradation with the help of microorganisms present in atmosphere such as bacteria and become useful plant growth promoting factors in the soil and again they are consumed by plants for photosynthesis. Besides, these n-

alkane presence in aerosols act as cloud concentration nuclei to seed and condense the clouds resulting in rain, thus helping to maintain climate.

g. In view of the above it is submitted that the presense of n-alkane due to diya/lamp burning restore/reconstruct the envoirnment to conditions before use.

Article

Chinese Science Bulletin

Geography

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Climatic and environmental implications from *n*-alkanes in glacially eroded lake sediments in Tibetan Plateau: An example from Ximen Co

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Gas chromatography-mass spectrometry was used to identify a series of *n*-alkanes in the sediments of a typical glacially eroded lake in the eastern Tibetan Plateau. By comparing the distribution patterns of *n*-alkanes in lake sediments, surface soils and cow manure, it was shown that *n*-C_{27}–*n*-C_{33} alkanes in the soil ecosystem of Ximen Co are derived from vascular plant species and that the distribution pattern of *n*-C_{27}–*n*-C_{33} alkanes remains unchanged during the feeding and digestion processes of herbivores. The relative percentage of C_{27}, C_{29} and C_{31} *n*-alkanes decreased from the bottom to the top of the sediment core showing a trend of degradation of higher plants in the Ximen Co lake region during the formation of the 44 cm core. ^{210}Pb dating, combined with pre-existing AMS ^{14}C dating results showed that the depositional core reflects climatic and environmental variations since about 900 years before present. The *n*-alkane indexes ($ACL_{27–33}$, P_{aq}, P_{wax}) are comparable with regional temperature variation, especially recording the Little Ice Age event (LIA). This study highlights that *n*-alkanes are valid proxies for paleo-climate and paleo-environment reconstruction, despite the same distribution patterns in *n*-alkane molecular fossils derived from a typical glacially eroded lake.

Tibetan Plateau, glacially eroded lake, Ximen Co, lake sediment, molecular fossil, *n*-alkane, climatic and environmental change

Citation: Pu Y, Zhang H C, Wang Y L, et al. Climatic and environmental implications from *n*-alkanes in glacially eroded lake sediments in Tibetan Plateau: An example from Ximen Co. Chinese Sci Bull, 2011, 56: 1503−1510, doi: 10.1007/s11434-011-4454-7

Investigation of organic components in lake sediments is considered an effective approach for paleo-climate and paleo-environment reconstruction in the Tibetan Plateau [1–6]. Common approaches used include organic carbon and nitrogen isotopes, total organic carbon and nitrogen contents, C/N ratio, hydrogen index, oxygen index, and pigments, as well as molecular fossils, which have become increasingly popular in recent years. However, there are some difficulties in the application of these lacustrine organic geochemical proxies because the complexity of the organic matter sources in lake sediments leads to uncertainty and multiplicity of proxy interpretation [7] and the physical, chemical and biological effects occurring in the organic matter depositional process may change the environmental information contained within the organic components [8]. Thus it is important to investigate organic components that are relatively stable and have a clear biological source.

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Normal alkanes (*n*-alkanes) are stable lipid molecular fossils, which contain biological source information [7,9] and have been widely used in climatic and environmental variation studies in the Tibetan Plateau in recent years [6,10–14]. Previous studies have shown that the abundance and distribution patterns of *n*-alkanes within the same type of vascular plants exhibit good stability and a unique distribution model [15] whereas *n*-alkanes with different biological sources have very different relative abundance and distribution models [16,17]. Even in different stages of lake evolution, the distribution patterns of *n*-alkanes will vary regularly [12]. It is believed that *n*-alkanes truly reflect the variation in organic matter from different biological sources in lake sediments and can be used to infer regional climate and environment change.

Ximen Co is an erosional lake, which formed from glacial excavation and erosion of a soft and/or broken rock band in the mountains of a high-latitude area. The lake is characterized by a small size, steep shoreline and great depth. There are abundant ice-scour lakes in the Tibetan Plateau. Previous studies have focused primarily on tectonically formed large lakes, such as Qinghai Lake [5], Nam Co [13,18], and Siling Co [19]. However, research on glacially eroded lakes is relatively lacking. Glacially eroded lakes often exist in cirques or trough valleys and consequently the watershed of glacially eroded lake tends to have significantly steep slopes [20]. Thus, both the glacier water and precipitation have a significant scouring effect on the slope vegetation and soil, transporting large amounts of terrigenous detritus into the lake. Because of the relatively deep water, the sedimentary environment is stable and consequently the organic matter tends to be well preserved. In such a geological setting, the distribution patterns of *n*-alkanes and the extent to which *n*-alkanes reflect the regional climatic and environmental variation are issues worthy of investigation.

Ximen Co, which is a typical glacially eroded lake in the Nianbaoyeze Mountains of the eastern Tibetan Plateau (Figure 1), was chosen as the area for investigation. We extracted the *n*-alkane molecular fossils from the lake sediment as well as modern soil samples and cow manure and compared the distribution patterns of these samples. Also, we attempted to reconstruct the climatic and environmental history since about 900 calendar years before present (BP) in the study region using *n*-alkane indexes.

1 Materials and method

1.1 Sample collection and preparation

Nianbaoyeze (Guoluo Mountain) is located in Jiuzhi in the Guoluo Prefecture within Qinghai Province, which is part of the Bayankala mountain range. The elevation of the prominent peak is 5369 m, which is covered by a modern glacier with a modern snow line altitude of about 5100 m [23]. Ximen Co is a typical glacially eroded lake in the Nianbaoyeze area, which formed by melt water filling the glacial trough in the post-glacial period. The lake's average elevation is about 4020 m and its area is 3.8 km^2. The average depth of Ximen Co is approximately 40 m, with the maximum depth close to 65 m. The lake water supply is mainly from local precipitation and glacial melt water. Meteorological data show that the Jiuzhi region has the maximum precipitation in Qinghai Province, with an average annual rainfall of 774.3 mm and annual evaporation of less than 1250 mm. The vegetation in the catchment area is dominated by alpine meadow and alpine shrub meadow [24].

Lake sediment, modern soil and cow manure samples were all collected in early July 2009. Figure 1(1–5) shows the lake sediment and soil sampling sites. Vegetation foliage was removed before soil samples were collected below the plants. Fresh cow manure was collected near the lake. A 44 cm long short core (XMC-6) was taken from Ximen Co at 33°22′40.59″N/101°06′21.78″E using a gravity corer. The whole core has a light gray silty clay texture and had no obvious alteration or damage. The core was divided into

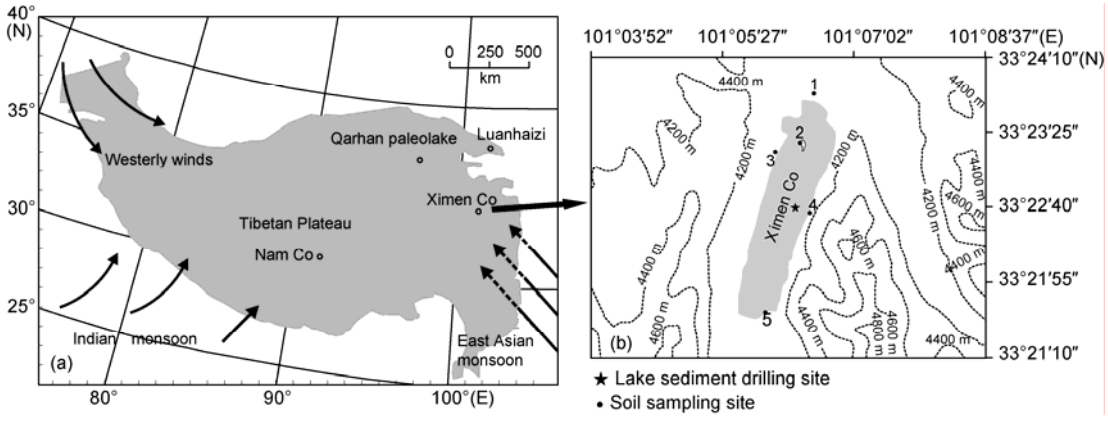

Figure 1 Previous studies of *n*-alkanes in lake sediments on the Tibetan Plateau, including Luanhaizi Lake [21], Qarhan Lake [12,22] and Nam Co [13,17] as well as Ximen Co (a). The sampling sites in the Ximen Co lake region which including lake sediments and soil are shown in (b). The dotted lines are elevation contours.

twenty-two samples of 2 cm increments which were wrapped in foil, put in a sample bag and preserved in a frozen preservation box. The samples were immediately freeze dried upon arrival at the laboratory.

1.2 Analytical methods

Each sample was approximately 2 g and was passed through a number 80 mesh sieve. The soluble organic matter was ultrasonically extracted (3x) with solvent (dichloromethane and methanol, *V*:*V*=93:7) for 20 min using an ultrasonic generator. The samples from the three extractions were combined and filtered, and then were concentrated to constant weight. To avoid compound loss, no further fractionation of the lake sediment samples was undertaken. The extracts of lake sediments were air dried and then derivatized by heating with N, O-bis (trimethylsilyl) trifluoroacetamide before GC/MS analysis. Taking into account the high organic matter concentration of modern soil and cow manure samples, the total lipid extracts were fractionated by flash column chromatography into saturated hydrocarbons, aromatics, and non-hydrocarbons. The hydrocarbon component was determined by instrument directly. The glassware was washed with the oxidizers and rinsed with glass-distilled solvents prior to use. Procedural blanks were also analyzed to ensure the absence of possible laboratory contaminants.

GC-MS was performed with a Hewlett Packard 7890A gas chromatograph interfaced with a Hewlett Packard 5975C mass selective detector and equipped with a DB-5 MS column (30 m×0.25 mm ID, film thickness 0.25 μm). The oven temperature was gradually increased at 3°C/min from 70–300°C and held for 20 min. Helium was used as a carrier gas. The compounds were assigned by comparison with mass spectra and retention times from the literature. The organic carbon isotope composition ($\delta^{13}C_{org}$) was tested on an EA 1112 HT-MAT253 using a standard of V-PDB (Vienna Peedee belemnite). Glycine and collagen standards provided by SIGMA Company were used to test instrument conditions and the total error was less than 0.15‰.

1.3 Dating

The upper 6 cm of XMC-6 was dated using the ^{210}Pb method and showed that the sedimentation rate was about 0.503 mm/a. Our research group had previously collected a long core, located close to the XMC-6 core, and found that the sedimentation rate was very stable, at least within the upper 265 cm [25]. Thus, the dates of the complete XMC-6 core were calculated from the sedimentation rate of the upper 6 cm. This sedimentation rate is similar to a previous study in this lake, which obtained ages by ^{210}Pb and ^{14}C methods [26]. According to this sedimentation rate, the age of XMC-6 is about 875 a BP.

2 Results and discussion

2.1 Distribution pattern of *n*-alkanes in glacially eroded lake sediments

The *n*-alkanes in Ximen Co lake sediments range from *n*-C_{15} to *n*-C_{33} and show a unimodal distribution pattern, while the higher-carbon-number *n*-alkanes have distinct odd carbon predominance, with CPI_h values ranging from 4.68 to 7.66 (Table 1). The high-carbon-number *n*-alkanes ($C_n \geqslant C_{21}$) comprise more than 90% of the total *n*-alkane abundance. The low-carbon-number *n*-alkanes are homologues, without any odd/even predominance, and are present at low to undetectable concentrations in the samples (Figure 2). Generally, the *n*-alkane distributions of leaf waxes of vascular plants have distinct odd-over-even preference. They usually range from 21 to 35 carbons in chain length, with a maximum at *n*-C_{27}, *n*-C_{29} or *n*-C_{31} [27]. However, the *n*-alkane distributions of submerged and floating plants are dominated by *n*-C_{21}, *n*-C_{23} or *n*-C_{25} [28]. Thus, the long chain *n*-alkanes in the lake sediment are mainly derived from terrestrial and aquatic vascular plants. The main peak of all 22 samples was *n*-C_{31}, implying that the main allochthonous inputs to Ximen Co are terrestrial herbs [29]. Previous studies showed that plants in the Ximen Co region were dominated by herbs and shrubs, with their pollen concentration comprising more than 90% of the total pollen concentration [30]. Therefore, the higher vegetation characteristics deduced from the *n*-alkane distribution, are consistent with former pollen data. The relative percentages of *n*-C_{27}, *n*-C_{29}, and *n*-C_{31} alkanes to total extractable organic matter were calculated by the area normalization method. As shown in Figure 3, the relative percentage of *n*-C_{27}, *n*-C_{29}, and *n*-C_{31} homologues decreases from bottom to top in XMC-6 indicating a reduction in the contribution of terrestrial organic matter. As the organic matter sources of Ximen Co are mainly terrestrial vascular plants, it is inferred that the total amount of higher plants have reduced during the period of formation of the XMC-6 core. That is to say local higher plants, especially the herbs, degraded gradually in the corresponding period. This phenomenon may be due to climatic variation and the rapid development of local animal husbandry.

It is noteworthy that the abundance of *n*-C_{25} alkane is relatively high, indicating aquatic plant inputs, especially a submerged/floating plant contribution [28]. The *n*-alkane distribution pattern in the lake sediments of Nam Co and Ximen Co are similar, with the exception of the *n*-C_{21} and *n*-C_{23} homologues which showed relatively high abundance in Nam Co [13]. This suggests an obvious *n*-alkane contribution from aquatic plants, but that the types of aquatic plants in these two lakes may be very different. On the other hand, the *n*-alkane distribution patterns of Luanhaizi Lake are very different from Ximen Co and Nam Co, showing the *n*-alkanes as being dominated by *n*-C_{23} and *n*-C_{25} and some

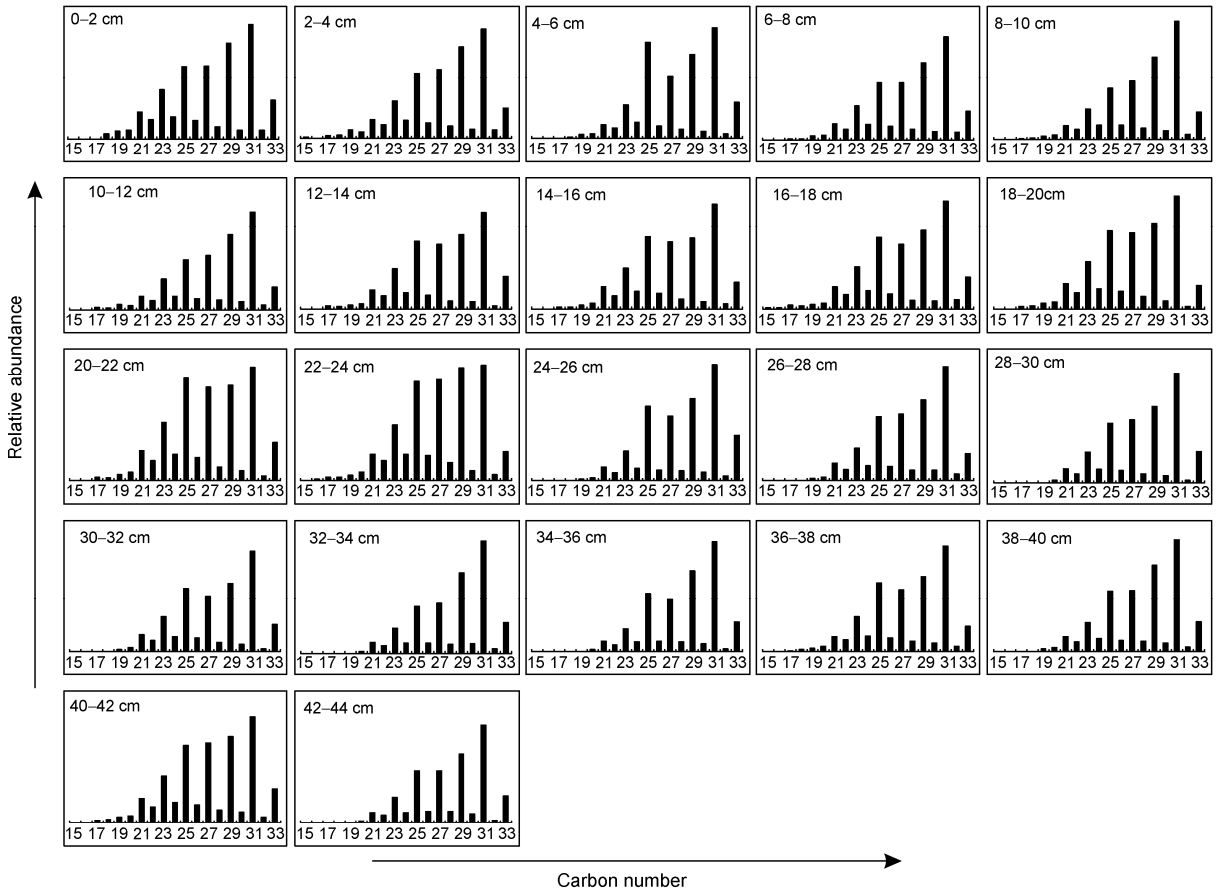

Figure 2 The *n*-alkane distribution in Ximen Co lake sediments.

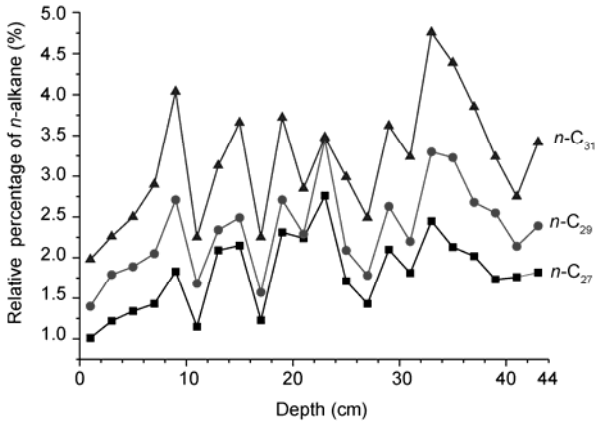

Figure 3 Profile trends in the relative percentage of n-C_{27}, n-C_{29}, n-C_{31} to total extractable organic matter.

samples displaying bimodal distribution with n-C_{19} as the main peak in low-carbon-number homologues. The carbon preference index in Luanhaizi is lower than in Ximen Co and Nam Co, while in Nam Co P_{aq} values in most samples are greater than 0.4, reflecting the main sources of *n*-alkanes as being aquatic plants, bacteria and algae [21]. The main reason for the *n*-alkane distribution discrepancy between the different lakes might be due to differences in climatic conditions and in the ecosystems.

2.2 Comparison of *n*-alkane distributions in lake sediment, modern soil and cow manure

The *n*-alkane distribution characteristics are similar in all modern soil samples, implying the same vegetation cover and ecological background in the Ximen Co lake region. The *n*-alkanes in all soil samples range from C_{20} to C_{33}, with a maximum at C_{31}, while the distribution range is clearly smaller than the *n*-alkane distribution in the lake sediments (Figure 4(b)). The *n*-alkane homologues n-C_{25} show relatively high abundance with distinct odd-carbon preference. The organic carbon isotope values range from –26.0‰ to –26.8‰ with an average of –26.4 ‰. It is believed that the organic carbon isotope in surface soil can distinguish C_3/C_4 plant distribution in *in-situ* vegetation and that this function is identical with the isotopic composition of the long-chain *n*-alkanes [31]. Therefore we conclude that the local vegetation in the Ximen Co lake region is dominated by C_3 species with C_4 species being less abundant. This result is in accord with the observed vegetation and environmental characteristics in this region and is also consistent with previous studies in the Tibetan Plateau [32].

The *n*-alkane distribution of modern soil and lake sediment samples (as shown in Figure 4(a) and (b)) shows clear discrepancies between them. The relative abundance of n-C_{15}–n-C_{19} alkanes, which represent the algal and bacterial

Table 1 Molecular fossil parameters of lake sediment samples and organic carbon isotope values[a)]

Depth (cm)	CPI_h	ACL_{27-33}	P_{aq}	P_{wax}	$\delta^{13}C_{org}$ (‰)
0–2	4.78	29.73	0.36	0.70	–24.4
2–4	5.09	29.67	0.33	0.73	–24.7
4–6	7.04	29.82	0.40	0.67	–24.1
6–8	5.13	29.77	0.33	0.73	–23.6
8–10	5.38	29.80	0.29	0.76	–23.8
10–12	5.31	29.72	0.32	0.74	–24.1
12–14	5.50	29.73	0.39	0.69	–23.7
14–16	5.06	29.68	0.39	0.68	–23.6
16–18	4.81	29.76	0.38	0.69	–23.6
18–20	4.92	29.56	0.39	0.69	–23.8
20–22	4.84	29.57	0.43	0.65	–23.6
22–24	4.68	29.40	0.40	0.68	–23.8
24–26	7.61	29.93	0.34	0.72	–23.7
26–28	5.71	29.70	0.33	0.73	–23.6
28–30	7.03	29.77	0.33	0.74	–23.8
30–32	5.84	29.78	0.36	0.70	–23.9
32–34	6.66	29.91	0.27	0.77	–23.9
34–36	7.66	29.86	0.29	0.75	–23.3
36–38	5.69	29.70	0.36	0.70	–23.6
38–40	6.64	29.75	0.31	0.75	–23.4
40–42	4.90	29.60	0.39	0.69	–23.4
42–44	5.98	29.81	0.32	0.74	–23.6

a) CPI_h= =odd$\Sigma[C_{21-33}]$/even$\Sigma[C_{22-32}]$; ACL_{27-33}= $(27\times C_{27}+29\times C_{29}+31\times C_{31}+33\times C_{33})/(C_{27}+C_{29}+C_{31}+C_{33})$; P_{aq}= $(C_{23}+C_{25})/(C_{23}+C_{25}+C_{29}+C_{31})$, P_{wax}= $(C_{27}+C_{29}+C_{31})/(C_{23}+C_{25}+C_{27}+C_{29}+C_{31})$; the organic carbon isotope values versus V-PDB standard, error is less than 0.15‰.

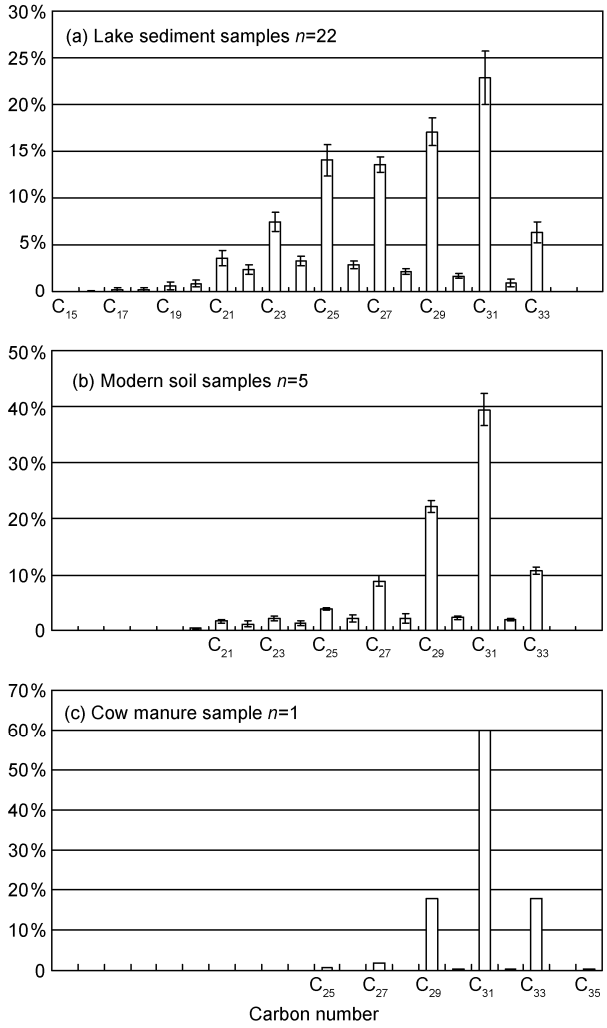

Figure 4 The *n*-alkane distribution in lake sediments, modern soil and cow manure (*y* error bars represent the standard deviation).

contributions and the *n*-C_{21}–*n*-C_{25} alkanes, which represent floating/submerged aquatic plant contributions, are distinctively higher than in the modern soil. However, the *n*-C_{27}–*n*-C_{33} alkanes, which represent the terrestrial higher plants as well as the emergent plant inputs, have a similar distribution in both soil and lake sediment samples. Consequently, the *n*-alkane distribution in lake sediments not only reflects the signals of higher terrestrial vegetation and emergent plant inputs, but also records the organisms living in Ximen Co, including the floating/submerged plants as well as algae and bacteria.

The *n*-alkane distribution of cow manure in Ximen Co lake region ranges from *n*-C_{25} to *n*-C_{35}, with a maximum at C_{31}, and shows a distinct odd-carbon preference which is indicative of an alpine meadow herb contribution (Figure 4(c)). This distribution pattern is very similar to that for *n*-alkanes in the modern soil. Comparison of the *n*-alkane distribution between the modern soil and cow manure demonstrates that cattle and other herbivores selectively feed on local alpine meadow herbs. However, the distribution pattern of C_{27} to C_{33} *n*-alkanes remains unchanged during the feeding and digestion processes of the herbivore. Therefore, varying numbers of grazing animals will not result in the loss of *n*-alkanes as ecosystem and environment indicators.

2.3 The *n*-alkane indexes from Ximen Co are consistent with Tibetan Plateau paleo-temperature records

To maintain a plant's moisture balance and protect its leaf cells, the leaf epicuticular composition of higher plants responds significantly to temperature change. In warmer tropical climates, land plants are postulated to biosynthesize longer chain compounds for their waxy coatings, whereas in cooler temperate regions somewhat shorter chain compounds are produced [27]. The *n*-alkane ACL index, proposed by Poynter (1990), is the concentration weighted mean chain length of the *n*-alkanes present in a geological sample. He studied the ACL index of long-chain *n*-alkanes in marine sediments and suggested that this index can represent the temperature variation in a source area [33]. This result has been supported by observations of *n*-alkanes in

modern leaves. The leaf *n*-alkane distribution in an individual plant species varies with the seasons, mainly responding to temperature change [34]. This phenomenon is also observed in *n*-alkane studies in loess [35] and peat [36]. However, it should be noted that if climate variation causes the plant species to vary or results in sedimentary source changes, then the ACL value cannot effectively reflect the temperature changes and more accurately reflects changes in the vegetation [12]. The ACL value is greater in higher plants than in lower plants and aquatic algae, with values in angiosperms being higher than in gymnosperms, and C_4 plants higher than in C_3 plants [37]. The foregoing analysis shows that the *n*-alkane distribution is basically constant in XMC-6, indicating that higher plants did not significantly change during the depositional period. Therefore it is suggested that the average chain length of C_{27} to C_{33} *n*-alkane homologues, which are mostly derived from vascular plants, have a potential relationship to regional temperature. As shown in Figure 5(a), the $ACL_{27–33}$ of XMC-6 varies between 29.40 and 29.91 with an average value of 29.72 (Table 1). The $ACL_{27–33}$ is comparable to standardized temperatures in the southern Tibetan Plateau (Figure 5(a)) [38]. This is especially the case during the LIA phase in the study area (Figure 5(a) shaded part), coinciding with the low-value phase of the $ACL_{27–33}$ index. The correlation of standardized temperature and $ACL_{27–33}$ index strongly supports the conclusion that $ACL_{27–33}$ is sensitive to temperature changes in the study area.

Recently, the P_{wax} and P_{aq} indexes of *n*-alkanes in sediments have been used to estimate the effective moisture changes in wetland environments in the past [11,39]. The P_{aq} index represents non-emergent aquatic plant inputs to lake sediments relative to that from emergent aquatic and terrestrial plants [28]. It is proposed that a high P_{aq} value corresponds to an increased contribution from aquatic plants, especially submerged and floating plants, indicating high precipitation associated with relatively humid climatic conditions. On the other hand, decreased P_{aq} values correspond to an increase in terrestrial plants and/or emergent plants, indicating decreased precipitation corresponding to a relatively dry climate. This has been confirmed in the Zoigê-Hongyuan peat deposit [11]. P_{wax} reflects the relative abundance of *n*-alkanes derived from terrestrial higher plants as well as emergent vegetation relative to *n*-alkanes derived from other kinds of plants. Low P_{wax} implies relatively humid climate conditions, whereas high values reflect relatively dry conditions [11]. P_{aq} values in Ximen Co lake sediment samples varied between 0.27 and 0.43, with a mean value of 0.35 (Figure 5(c), Table 1), and P_{wax} values varied between 0.65 and 0.77, with an average value of 0.71 (Figure 5(d), Table 1). A low standardized temperature in the southern Qinghai-Tibet Plateau corresponds to a high P_{aq} index and a significant decrease in the P_{wax} index (shaded part in Figure 5), suggesting a period relatively enriched in submerged/floating plants and a reduction in emergent/terrestrial plants. Moreover, the low $ACL_{27–33}$ values just correspond to this phase which is associated with the LIA event. Although the ambient temperature during the LIA was significantly reduced, the effective moisture did not decrease very much. It is suggested that *n*-alkanes derived from submerged and floating plant contribution increased, while the emergent/terrestrial plant contribution decreased during the LIA. The information reflected in the *n*-alkane indexes suggests that the climate characteristics during the LIA in Ximen Co were cold and wet. This inference is consistent with previous results, which were obtained from pollen and peat depositional rates in the study region [40].

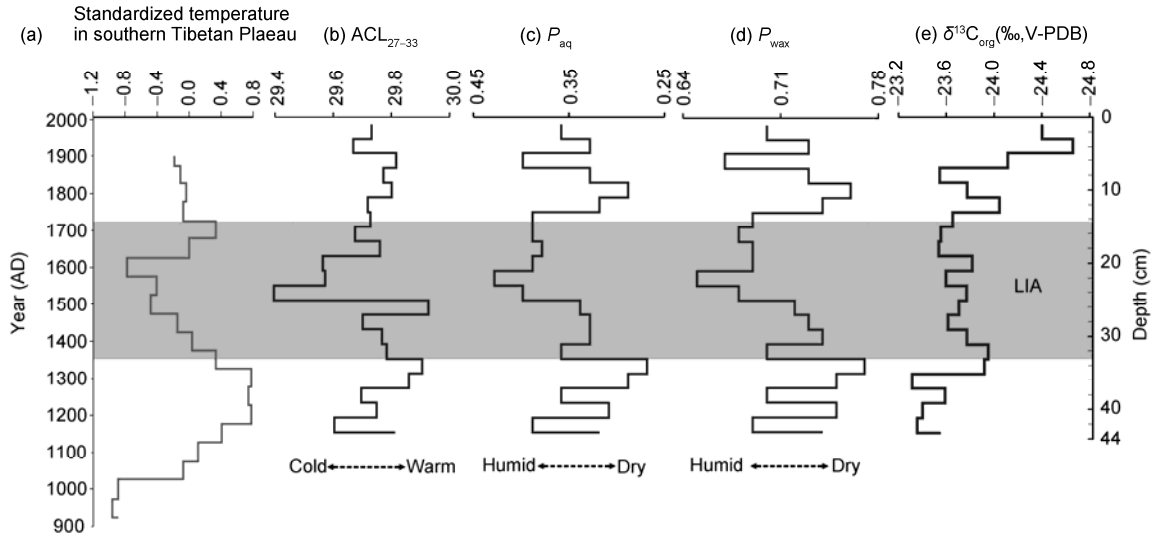

Figure 5 Profile trends of $\delta^{13}C_{org}$, $ACL_{27–33}$, P_{aq} and P_{wax} and comparison with the standardized temperature variation of the southern Tibetan Plateau [38]. Ximen Co is located in the eastern Tibetan Plateau, but it is generally believed that the climate conditions are more similar to the southern Tibetan Plateau.

The organic carbon isotope variation in the XMC-6 core is also comparable with the standardized temperature in the southern Tibetan Plateau as well as the *n*-alkane proxies (Figure 5(e)). However, the $\delta^{13}C_{org}$ proxy is not in perfect accord with the other proxies, even showing a reverse trend in some parts. This phenomenon was also observed in Qarhan paleo-lake [12]. A possible reason is that the organic carbon isotopes in lake sediments are affected by many factors and the mechanism is complex. Therefore a simple corresponding relationship between the organic carbon isotope and regional temperature is unlikely to exist [41]. However, what is interesting is that the organic carbon isotopic ratio shows a slightly positive excursion in the LIA period. A possible explanation is that the low ambient temperature caused the atmospheric CO_2 concentration to decrease, resulting in the dissolved CO_2 concentration also decreasing. Phytoplankton, floating plants and submerged lacustrine plants use HCO_3^- ($\delta^{13}C$=1‰) as their organic carbon source and therefore the organic carbon isotope would show a positive excursion during the LIA period [7].

The molecular fossil record in Ximen Co shows that ambient temperature has a significant impact on *n*-alkanes in higher plants, suggested by the strong correlation between *n*-alkane indexes and the paleo-temperature record. Because *n*-alkanes are considered to be chemical or molecular based species, they show very sensitive responses to climatic and environmental variation [42]. Previous studies have shown that *n*-alkanes have an advantage in reflecting environmental changes in peat in the Tibetan Plateau [43]. For instance, dominant plant species may remain unchanged under slight climate variations but their molecular composition may change slightly in response to the variation [44]. Therefore, *n*-alkane indexes can better reflect the climatic and environmental changes than organic carbon isotopes or other organic indexes and this phenomenon is evident in glacially eroded lake sediments.

3 Conclusions

(1) Comparison of the distribution patterns of *n*-alkanes in lake sediments, surface soils and herbivore feces shows that *n*-C_{27}–*n*-C_{33} alkanes in lake sediments are derived from higher plants in the soil ecosystem in the Ximen Co lake region. The distribution pattern of *n*-C_{27}–*n*-C_{33} alkanes remains unchanged during the feeding and digestion processes of herbivores.

(2) The relative percentages of *n*-C_{27}, *n*-C_{29}, and *n*-C_{31} alkanes decrease from the bottom to the top of the sediment core showing a trend of degradation of higher plants in the Ximen Co lake region during the formation period captured within the 44 cm core. The reasons for higher plant degradation require further study. The present degradation may be due to climatic factors and the rapid development of local animal husbandry.

(3) The trends of *n*-alkanes proxies ($ACL_{27\text{-}33}$, P_{aq}, and P_{wax}) are consistent with regional temperature variation, in particularly displaying a clear excursion during the LIA event. It is suggested that the *n*-alkane homologues are sensitive to climatic and environmental variation, and are reliable indicators of paleo-climate and paleo-environment variation in glacier erosion lakes.

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Product :- Hair Oil and Shampoo

The Hair is index of the Health. The Hair Loss should not be taken carelessly. There are several reasons for Hair Loss: 1. Hereditary (genetic) 2) Hormonal imbalance (Dihydrotestosterone factor & thyroid) 3.Nutrition deficiency (vitamins) 4) cancer treatment. 5) Scalp infection 6.Stress due to work, childbirth etc., 7) hair styling (color, perm (curling) and hair straightening. About 90% human hair is made of Protein called Keratin. Although keratin is very strong and rigid when thick, it can be very flexible when very thin. Keratin is a protein, which in turn is made up of amino acids and cysteine disulphide(a type of sulfurated amino acid), which forms disulfide bonds between molecules, adding rigidity and resistance to the entire hair structure. The levels of the amino acids and disulphide bridges determine how the hair will look like. For the body to produce keratin, the body needs 18 types of amino acids. While amino acids can be supplemented into our diets, a sufficient uptake of amino acids by the hair follicles directly from the hair oil infused with amino acids will undoubtedly boost Anagen /Talogen ratio (hair growth over hair fall) thus emphasizing how vital it is to facilitate hair growth. Hair oil infused with amino acids can help to restore the health and strength of your hair.

Snapping up an exceptional liquid amino acid treatment has the ability to stop excessive shedding of hair and breakage. It's all in the name, by making use of the right hair masks and products that include amino acids, your hair may attain a higher ability to retain moisture and a significant improvement in hair growth.

Gomayashakti Veda 3 hair oil which first of its kind game changer in the world, is infused with amino acids originating from both bio animal derived natural ingredients and bio plant derived natural ingredients to deliver speedy result to Stop Hair Fall ,induce hair growth and Oxidising the Scalp. This product contains only naturally occurring Bio molecules and no synthetic amino acids are added.

Benefits of the Gomayashakti Veda 3 Hair Oil and Shampoo infused with the Amino Acid essence in liquid form are twofold: 1) it helps stop the Hair fall 2) helps induce the hair growth. It will not spoil the drainage water more so it promotes sustainability of the ground water even after use. This significant breakthrough innovation for the prevention of Hair Fall restores the Wellness of the Individual.

Gomayashakti Veda 3 takes care of all the causes of Hair Loss/ Fall listed in the first paragraph except of DHT factor which is only few cases & we advise the user to reduce the intake 90 % DHT inducing food during the use of this oil to stop Hair fall. The Best Kept Secret of India's Traditional Hair care is out from this Liquid extract of Amino Acids in hair care application.

Tobacco Wellness

"WE ARE HERE TO CREATE LIVING TO FORM ETERNITY"

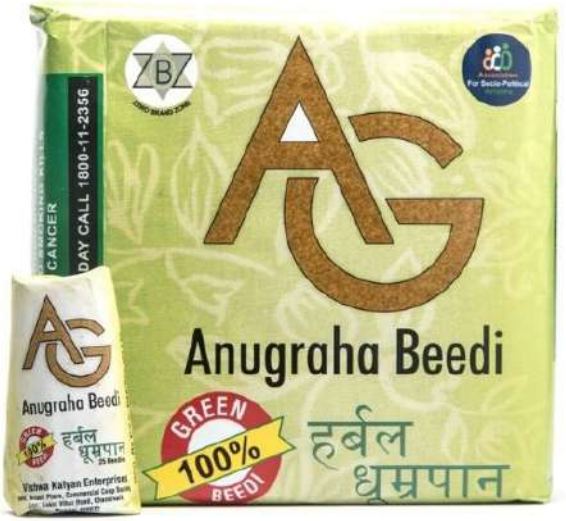
ZERO BRAND ZONE

Eco Friendly Products

100% Product

Sustainable living Validated

Patent No.: 351930 DT.: 23.11.2020



ANUGRAHA
HERBAL OLIO CHEWING
TOBACCO

ANUGRAHA
GREEN CIGARETTE

ANUGRAHA BEEDI

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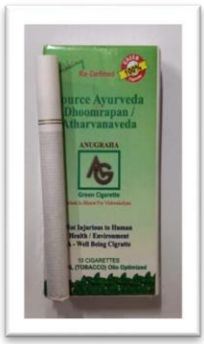
ZERO BRAND ZONE

Tobacco Wellness

Product: - Chewing Tobacco Cigarette Beedi



Tobacco is sanjeveeni, From the 15th Century tobacco is considered as panacea to all ailments, to extent it is being called as a "a Holy Herbs" and" Gods Remedy". Due to geo political and commercial control few monopolists removed the tobacco from the pharmacopeia in 17th Century. This herb is mostly consumed by the population across the globe despite cancer threat widely publicized as well as regulatory restriction in Advertisement and sale of tobacco Product.

The Medicinal Use of tobacco in History research review well documented by Anne Charton BA PHD School of Epidemiology and Health Science ,Manchester M139PT UK published by Royal Society of Medicine Press attached for detail understanding.

Level of Nicotine in the body in relation to particular level of Nicotine intake from smoking are modulated by rate of nicotine metabolism which occurs in the liver largely by means of the enzymes CYP2A6 .Panchagavya and other Herbs works with CYP2A6 erase the memory of cotine, nicotine naricotine and anabasine which are the four biomarkers of Cancer Induced by tobacco. Nitrogen present in Panchagavya removes the blood abnormalities and toxins .Natural stimulant of urinary tract activates kidneys and it diuretic. Hipuric Acid: (-CgNgNox) removes toxins through Urines.

Tobacco blended with Panchagavya and selected herbs redefined tobacco for wellness eventually helps to Quit Tobacco and leads to Cancer Free Future.

Please correlate the above with GCMS analysis, Lab test and Pilot Study of the Siddha Remedy of Tobacco withdrawal

Anugraha - AG GC MS Ananlysis and Claim Analysis

SR.NO.	R. TIME	AREA	AREA %	HEIGHT	BASE M/Z	NAME	FORMULA	Efficacy of the Compaosition Review Remark
1	3.652	968959	39.14	398514	45.00	ETHANE, DIETHOXY	C6H14O2	ethane ,Prpoane are used in LPG for house hold cooking .Hence this compisition Non Hazarduous Non Injurious to Passive Smoker.Cholrobutane is used to treat tapper worm or ring worm intestine treatment of Parasite intestine.Ethoxythoxy has pharaceutical application
						PROPANE, ETHOXYTHOXY	C7H16O2	
						ETHOXY, CHLOROBUTANE	C6H13C1O	
2	4.083	145661	5.88	74113	45.05	PROPYLENE GLYCOL, PROPANEDIOL	C3H8O2	The test concluded that air containing propylene glycol kills off bacteria of all kinds, including disease-causing ones and that PG vapour is invisible, odourless, and non-irritating. It added that PG is essentially non-toxic.Oct 25, 2018 For Passive Smoker. Propanediol is Used skin care product .It give maoisturing /hydrate layer to the Smokers Lips\
						PROPANEDIOL, PROPYLENE GLYCOL	C3H8O2	
3	14.683	991589	40.05	367511	84.10	PYRIDINE, NICOTINE	C10H14N2	**Pyridine** can also be found in **medication** that's **used** to treat cancer. One anti-cancer **medication** that contains **pyridine** is called crizotinib, or Xalkori by its brand name. This **medication** is **used** to treat various forms of non-small cell lung cancer.Threat for Lung Cancer is neutralised inital stage itself.Pyridine is used to dissolve other substances. It is also used to make many different products such as medicines, vitamins, food flavorings,In Our Case it dissolve Nicotine in the blood stream.***A stimulatory alkaloid found in tobacco products that is often used for the relief of nicotine withdrawal symptoms and as an aid to smoking cessation.***
4	20.476	82011	3.31	53614	68.05	HEPTADECENAL	C17H32O	This E-15-heptadecenal compound can impede the normal biological pathway of the K. pneumoniae ATCC 13883 by effecting variations of cell deformations: elongation, shrinkage, lyses, and leakage. A prolonged treatment period with an increase in the extract concentration can be assured to cause a greater killing effect to the tested K. pneumoniae ATCC 13883 cells. Citronellyl Isobutyrate is Bio Active effectived used is Pain management.Pentadecanal is a long-chain fatty aldehyde that is pentadecane carrying an oxo substituent at position . This is critical Bio active naturally occuring Bio chemical process through Bio Chemical Pathaway-Lipid metabolism ,Asthma repairing at happening at cellular signalling.
						CITRONELLYL ISOBUTYRATE, PROPANOI(	C14H26O2	
						CITRONELLYL BUTYRATE, BUTANOIC ACI	C14H26O2	
						OCTEN, DIMETHYL, PROPANOATE	C13H24O2	
						PENTADECANAL	C15H30O	
5	21.733	24137	0.97	13540	149.05	BENZENEDICARBOXYLIC ACID, DIHEXYL E	C20H30O4	**Phthalic acid** is of low chronic **toxicity**. A mixture of **phthalic acid** and phthalate (proportions not given, pH 7.5), administered daily in the diet at a
						PHTHALIC ACID, BUTYL	C15H19C1O4	
						PHTHALIC ACID, ETHYL,	C22H34O4	
						PHTHALIC ACID, CHLOROOCTYL	C22H33C1O4	

Anugraha - AG GC MS Ananlysis and Claim Analysis

SR.NO.	R. TIME	AREA	AREA %	HEIGHT	BASE M/Z	NAME		Efficacy of the Compaosition Review Remark
						PHTHALIC ACID, CHLOROOCTYL	C14H17C1O4	level of 500 mg/kg, is tolerated by rabbits, cats and dogs for weeks without adverse effects on the organism (Oettel 1962b).J
6	21.777	135748	5.48	70503	73.00	HEXADECANOIC ACID	C16H32O2	**Palmitic acid**, or **hexadecanoic acid** in IUPAC nomenclature, is the most common saturated fatty **acid.One of the main uses of palmitic acid is its of its ability to help keep skin smooth it prevents the Smokers Lips stay healthy.Trideconic Acis long chain fatty acid and Pentadecanonic Acis odd even fatty keep the Saliva in tact of smokers from evil nicotine and in blood**
						TRIDECANOIC ACID	C13H26O2	
						PENTADECANOIC ACID, PENTADECYLIC A	C15H30O2	
7	23.489	54526	2.20	31293	55.05	CIS, EPOXYOCTADECAN	C18H36O2	Anti-Microbial
						HEXADECANOL, CETYL ALCOHOL	C16H34O	Antioxidant 5 Alpha reductase inhibitor,Hypocholesterolemic Antiandrogenic
						METHYL, HEXADECEN	C17H34O	No Activity Reported
						TETRADECANEDIOL, TETRADECAMETHYL	C14H30O2	Antioxidant Cancer preventive Cosmetic Nematicide Hypercholesterolemic Lubrican
						OLEYL ALCOHOL , TRIFLUOROACETATE	C20H35F3O2	Anti-inflammatory Antiandrogenic Cancer-Preventive
8	23.695	73194	2.96	31980	73.00	DECANOIC ACID,	C10H20O2	**Decanoic acid** is a C10, straight-chain saturated fatty **acid**. It has a role as an antibacterial agent, an anti-inflammatory agent, a human metabolite, a volatile oil component, a plant metabolite and an algal metabolite. It is a straight-chain saturated fatty **acid** and a medium-chain fatty **acid**..All these Acid are non toxin and non carcinogenic
						OCTADECANOIC ACID, STEARIC ACID	C18H36O2	
						HEXADECANOIC ACID	C16H32O2	
		2475825	100.00	1041068				

Zero Brand Zone_AG Green Cigarette -Fore Noon										Malboro Cigarette Data(Afetr Noon)							
						Tar Stoper Indicator.In Single Smoke	Qualitative detection of Nicotine's presence in smokers body			Cigarette S.No.	Detection of Gaseous pollutants in Cigarette Smoke				Qualitative detection of Nicotine's presence in smokers body		Tar Stoper Indicator.In Single Smoke
Date of analysis	Composition formula S.No.	HCHO HCHO(Formaldehye)	TVOC(Total volatile organic compound	PM2.5(particulate matter of 2.5 micron	PM10(particulate matter of 10 micron diameter)	24 Crystal turing Black /Brown	Urine	Saliva			HCHO (Formaldehye)	TVOC(Total volatile organic compoun	PM2.5(particulate matter of 2.5	PM10(particulate matter of 10 micron diameter)	Urine	Saliva	24 Crystal turing Black /Brown
11.11.2017	1	0.000	0.001	033	006	3 *	Yes	Yes		1	0.09	0.215	101	117	Yes	Yes	15 **
12.11.2017	2	0.000	0	013	150	3 *	Yes	Yes		2	0.12	0.34	120	340	Yes	Yes	13**
13.11.2017	3	0.000	0.001	020	180	3 *	Yes	Yes		3	..84	0.5	320	712	Yes	Yes	12**
15.11.2017	4	0.000	0.001	028	200	3 *	Yes	Yes		4	0.25	0.12	421	620	Yes	Yes	11**
17.11.2017	5	0.000	0.001	011	225	2*	Yes	Yes		5	0.6	0.8	380	510	Yes	Yes	18**
19.11.2017	6	0.000	0.001	009	127	2*	Yes	Yes		6	0.15	0.68	526.1	779.6	Yes	Yes	24**
21.11.2017	7	0.000	0.001	001	111	2*	Yes	Yes		7	0.18	0.775	612	886.2	Yes	Yes	14**
23.11.2017	8	0.000	0.001	003	151	2*	Yes	Yes		8	0.85	0.87	697.9	992.8	Yes	Yes	16 **
25.11.2017	9	0.000	0.001	005	105	2*	Yes	Yes		9	0.95	0.965	783.8	1099.4	Yes	Yes	13**
27.11.2017	10	0.000	0.001	007	245	2*	Yes	Yes		10	1.3	1.06	869.7	1206	Yes	Yes	12**
30.11.2017	11	0.000	0.001	000	136	2*	Yes	Yes		11	0.21	1.155	955.6	1312.6	Yes	Yes	11**
01.12.2017	12	0.000	0.001	001	4	1*	Yes	Yes		12	0.24	1.25	1041.5	1419.2	Yes	Yes	18**
04.12.2017	13	0.000	0.001	004	209	1*	Yes	Yes		13	0.86	1.345	1127.4	1525.8	Yes	Yes	24**
07.12.2017	14	0.000	0.001	007	152	1*	Yes	Yes		14	1.65	1.44	1213.3	1632.4	Yes	Yes	14**
11.12.2017	15	0.000	0.001	001	20	N S C	No	No		15	2	1.535	1299.2	1739	Yes	Yes	17 **
14.12.2017	16	0.000	0.001	004	213	N S C	No	No		16	0.27	1.63	1385.1	1845.6	Yes	Yes	13**
17.12.2017	17	0.000	0.001	007	240	N S C	No	No		17	0.3	1.725	1471	1952.2	Yes	Yes	12**
20.12.2017	18	0.000	0.001	000	136	N S C	No	No		18	0.87	1.82	1556.9	2058.8	Yes	Yes	11**
21.12.2017	19	0.000	0.001	001	158	N S C	No	No		19	2.35	1.915	1642.8	2165.4	Yes	Yes	18**
24.12.2017	20	0.000	0.001	004	294	N S C	No	No		20	2.7	2.01	1728.7	2272	Yes	Yes	24**
26.12.2017	21	0.000	0.001	006	089	N S C	No	No		21	0.33	2.105	1814.6	2378.6	Yes	Yes	14**
27.12.2017	22	0.000	0.001	007	126	N S C	No	No		22	0.36	2.2	1900.5	2485.2	Yes	Yes	18 **
28.12.2017	23	0.000	0.001	008	148	N S C	No	No		23	0.88	2.295	1986.4	2591.8	Yes	Yes	13**
02.01.2018	24	0.000	0.001	002	168	N S C	No	No		24	3.05	2.39	2072.3	2698.4	Yes	Yes	12**
03.01.2018	25	0.000	0.001	003	190	N S C	No	No		25	3.4	2.485	2158.2	2805	Yes	Yes	11**
04.01.2018	26	0.000	0.001	004	154	N S C	No	No		26	0.39	2.58	2244.1	2911.6	Yes	Yes	18**
07.01.2018	27	0.000	0.001	007	211	N S C	No	No		27	0.42	2.675	2330	3018.2	Yes	Yes	24**
10.01.2018	28	0.000	0.001	000	231	N S C	No	No		28	0.89	2.77	2415.9	3124.8	Yes	Yes	14**
11.01.2018	29	0.000	0.001	001	253	N S C	No	No		29	3.75	2.865	2501.8	3231.4	Yes	Yes	19 **
15.01.2018	30	0.000	0.001	005	275	N S C	No	No		30	4.1	2.96	2587.7	3338	Yes	Yes	13**
Finalization of composition																	

Date of analysis	Composition formula S.No.	Detection of Gaseous pollutants in Cigarette Smoke				Tar Stoper Indicator.In Single Smoke	Qualitative detection of Nicotine's presence in smokers body			Cigarette S.No.	Detection of Gaseous pollutants in Cigarette Smoke				Qualitative detection of Nicotine's presence in smokers body		
		HCHO (Formaldehye)	TVOC(Total volatile organic compounds)	PM2.5(particulate matter of 2.5 micron diameter)	PM10(particulate matter of 10 micron diameter)	24 Crystal turing Black /Brown	Urine	Saliva			HCHO (For	TVOC(Total volatile organic compounds)	PM2.5(particulate matter of 2.5 micron diameter)	PM10(particulate matter of 10 micron diameter)	Urine	Saliva	
02.06.2018	15	0	0.17	245	284	N S C	No	No									
05.08.2018	18	0.01	0	110	87	N S C	No	No									
11.09.2018	21	0	0	83	65	N S C	No	No									
21.11.2018	24	0	0	42	81	N S C	No	No									
12.01.2019	30	0	0	33	69	N S C	No	No									
Note : * No Crystal changed Colore ligh t Yellowish Not Brown /Black that indicate TAR presence																	
** No Crysttal Changed colour due to Tar - Brown/Black burning Tobabaco																	
NSC Denote No Significance Change in Colout but there is trace colour change yellowish white																	

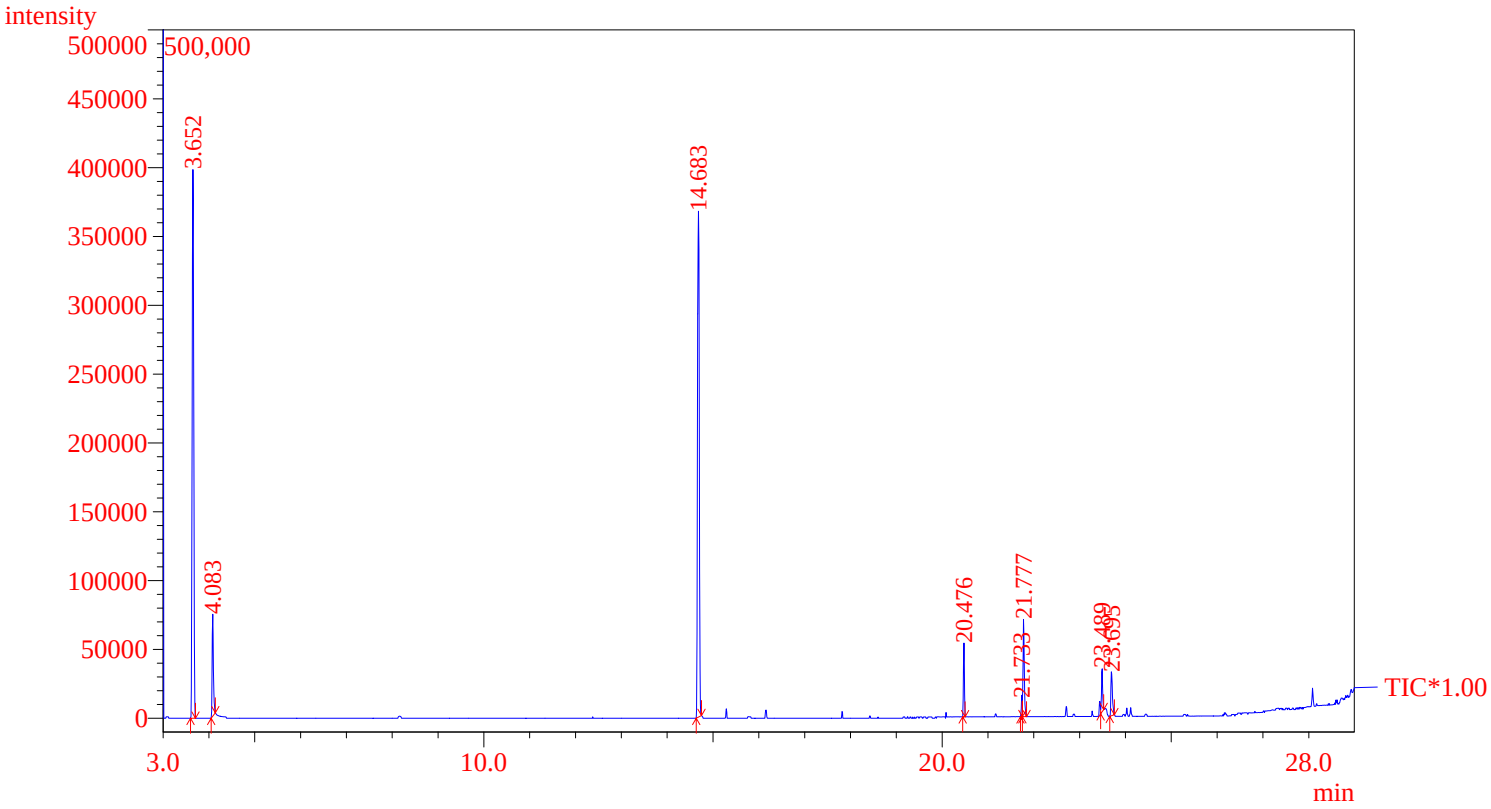
Not Done Any Analysis

GC MS-TIC

Sample Information

Analyzed by :
Analyzed : 2/19/2020 3:01:31 PM
Sample Name : AG CIGERETTE
Sample ID : AG CIGERETTE
Data File : E:\DATA\FEB-20\GREEN CIGERETTE.QGD
Method File : E:\METHODS\GCMS.qgm
Tuning File : E:\TUNE\24092019.qgt
[Comment]
AG CIGERETTE
Modified by :
Modified : 2/19/2020 3:30:31 PM

Chromatogram AG CIGERETTE E:\DATA\FEB-20\GREEN CIGERETTE.QGD



Peak Report TIC

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1	3.652	968959	39.14	398514	45.00	
2	4.083	145661	5.88	74113	45.05	
3	14.683	991589	40.05	367511	84.10	
4	20.476	82011	3.31	53614	68.05	
5	21.733	24137	0.97	13540	149.05	
6	21.777	135748	5.48	70503	73.00	
7	23.489	54526	2.20	31293	55.05	
8	23.695	73194	2.96	31980	73.00	
		2475825	100.00	1041068		

Library

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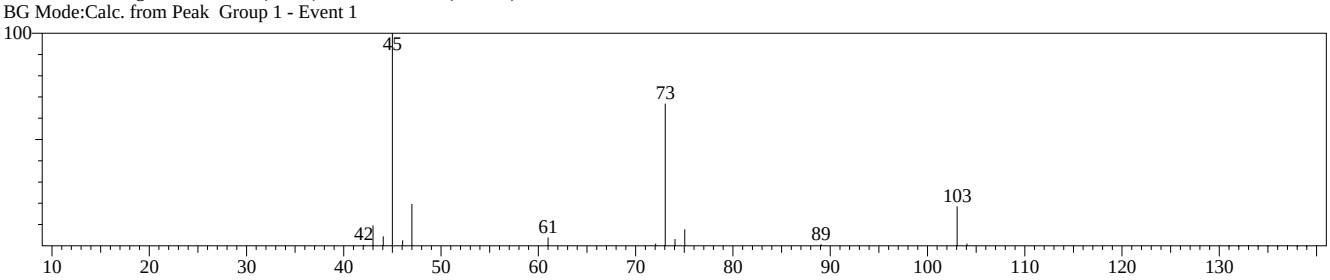
BG Mode:Calc. from Peak Group 1 - Event 1



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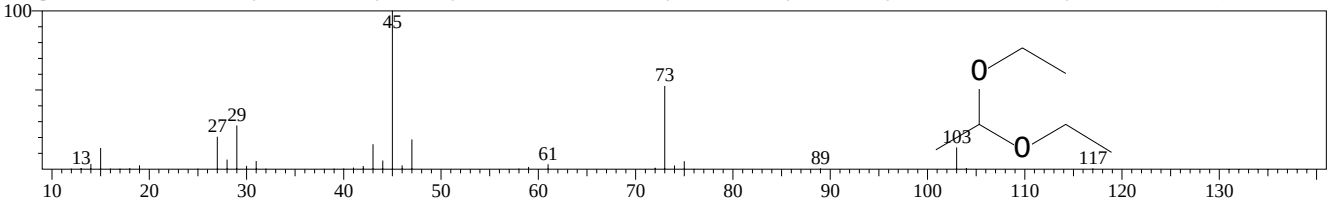

Hit#:2 Entry:3872 Library:NIST11s.lil
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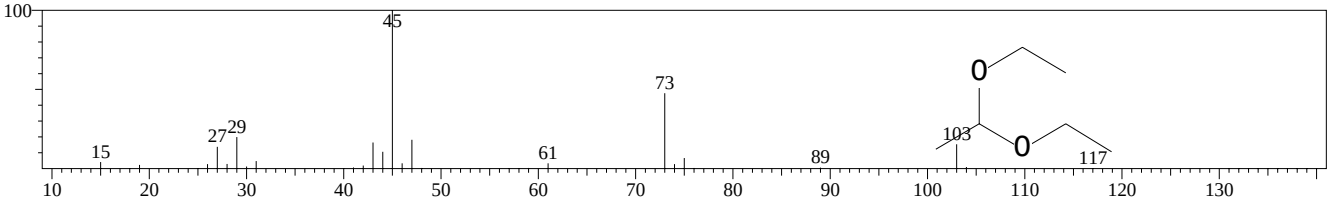
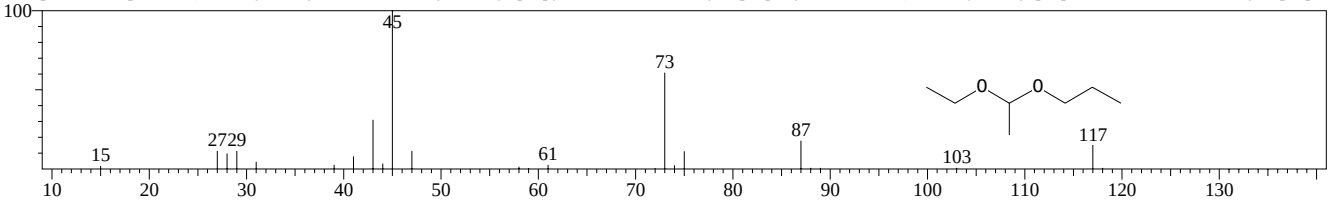


Hit#:3 Entry:8491 Library:NIST11.lil
SI:86 Formula:C7H16O2 CAS:20680-10-8 MolWeight:132 RetIndex:805
CompName:Propane, 1-(1-ethoxyethoxy)- $$ Acetaldehyde, ethyl propyl acetal $$ 1-Ethoxy-1-propoxyethane $$ 1-(1-Ethoxyethoxy)propane $$ Ethane, 1-ethoxy-1-propo



Hit#:4 Entry:9440 Library:NIST11.lil
SI:85 Formula:C6H13ClO CAS:0-00-0 MolWeight:136 RetIndex:770
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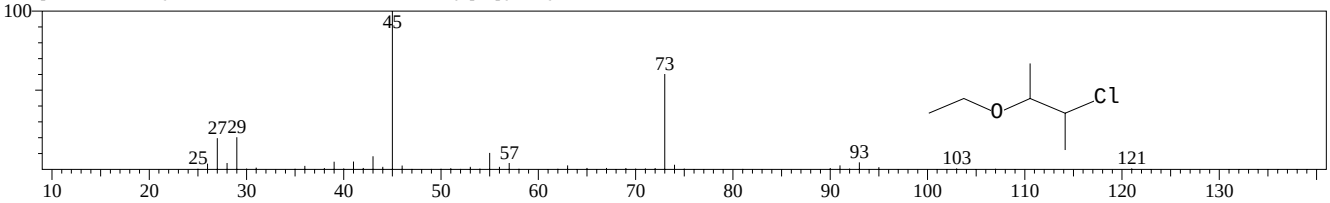
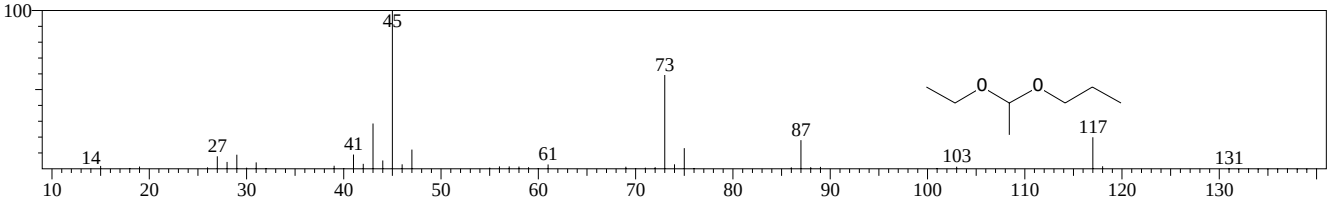


Hit#:5 Entry:5869 Library:NIST11s.lil
SI:84 Formula:C7H16O2 CAS:20680-10-8 MolWeight:132 RetIndex:805
CompName:Propane, 1-(1-ethoxyethoxy)- $$ Acetaldehyde, ethyl propyl acetal $$ 1-Ethoxy-1-propoxyethane $$ 1-(1-Ethoxyethoxy)propane $$ Ethane, 1-ethoxy-1-propo



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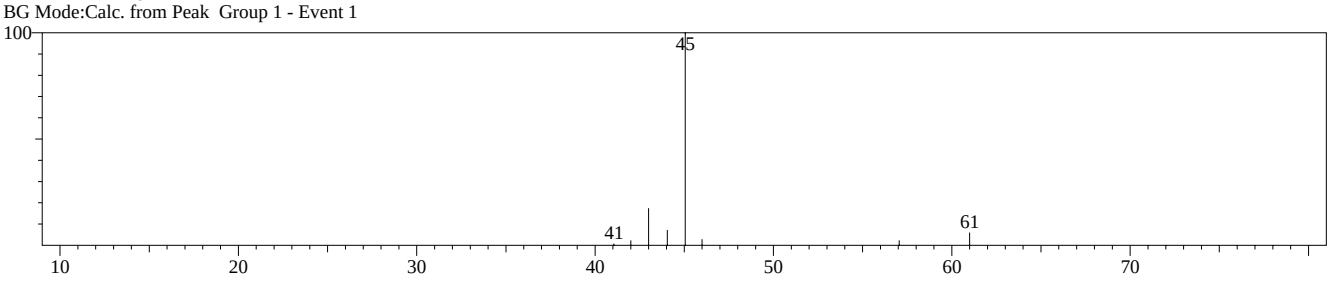
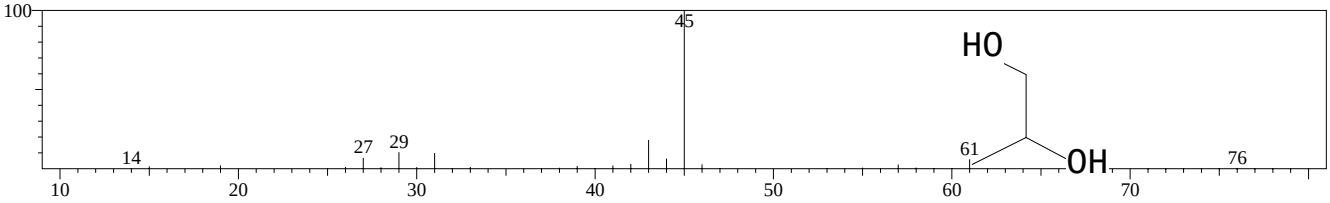
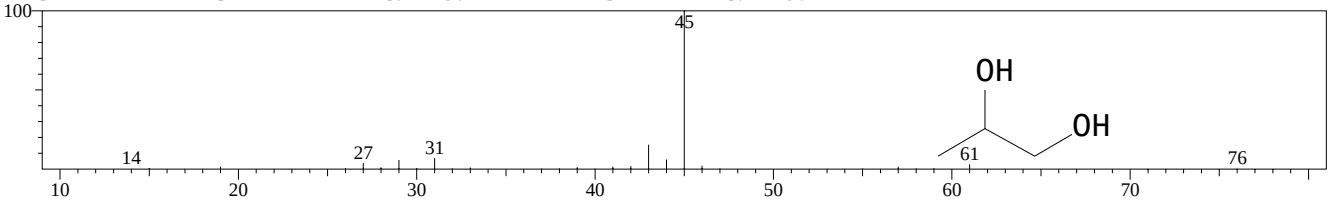


Hit#:1 Entry:444 Library:NIST11.lit
SI:98 Formula:C3H8O2 CAS:57-55-6 MolWeight:76 RetIndex:724
CompName:Propylene Glycol $$ 1,2-Propanediol $$ .alpha.-Propylene glycol $$ Methylethyl glycol $$ Methylethylene glycol $$ Monopropylene glycol $$ PG 12 $$ Sirle



Hit#:2 Entry:507 Library:NIST11s.lit
SI:98 Formula:C3H8O2 CAS:4254-15-3 MolWeight:76 RetIndex:724
CompName:(S)-(+)-1,2-Propanediol $$ S-(+)-Propylene glycol $$ (S)-1,2-Propanediol $$ Propylene glycol # $$



Hit#:3 Entry:443 Library:NIST11.lit
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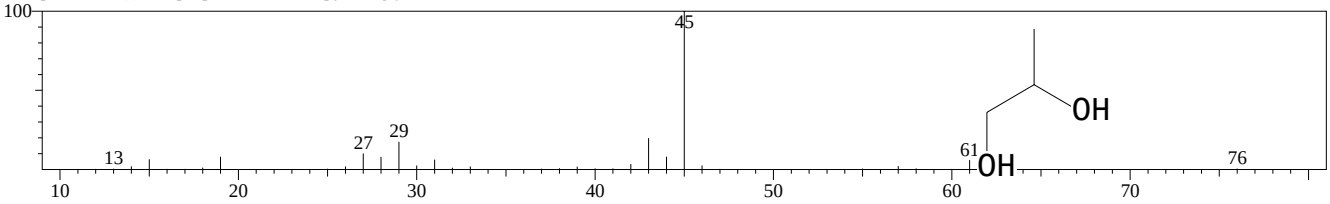
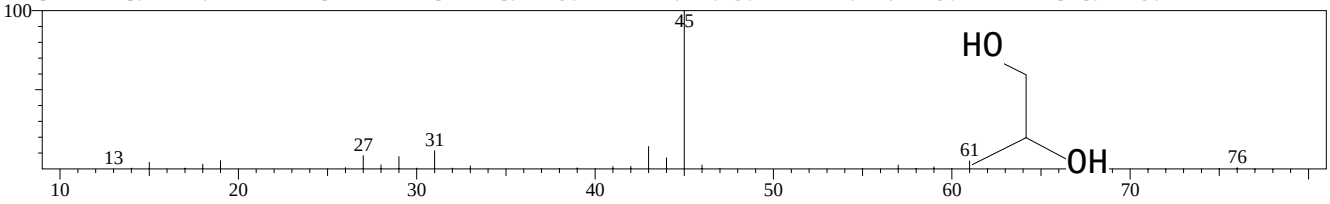
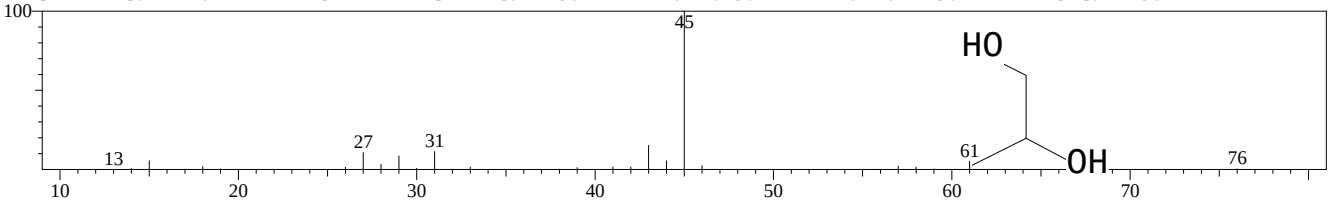


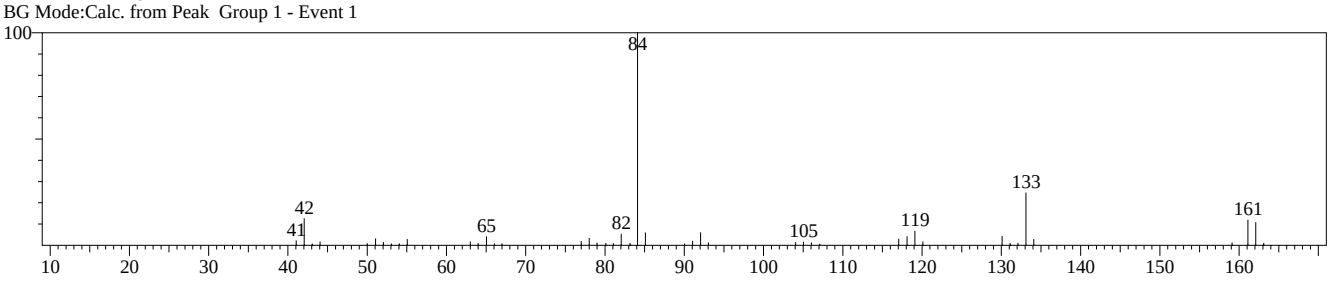
Hit#:4 Entry:508 Library:NIST11s.lit
SI:97 Formula:C3H8O2 CAS:57-55-6 MolWeight:76 RetIndex:724
CompName:Propylene Glycol $$ 1,2-Propanediol $$ .alpha.-Propylene glycol $$ Methylethyl glycol $$ Methylethylene glycol $$ Monopropylene glycol $$ PG 12 $$ Sirle



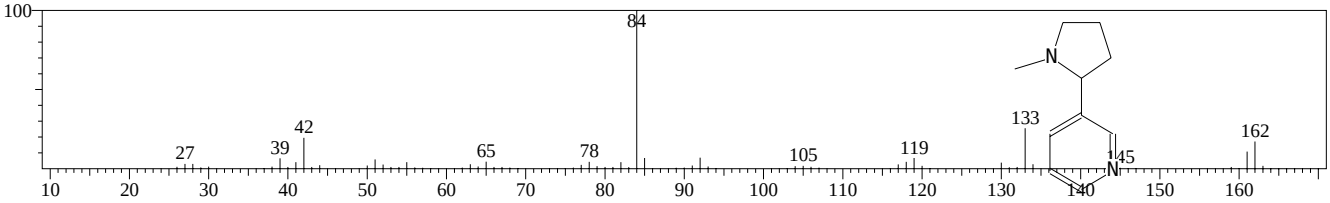
Hit#:5 Entry:509 Library:NIST11s.lit
SI:97 Formula:C3H8O2 CAS:57-55-6 MolWeight:76 RetIndex:724
CompName:Propylene Glycol $$ 1,2-Propanediol $$ .alpha.-Propylene glycol $$ Methylethyl glycol $$ Methylethylene glycol $$ Monopropylene glycol $$ PG 12 $$ Sirle



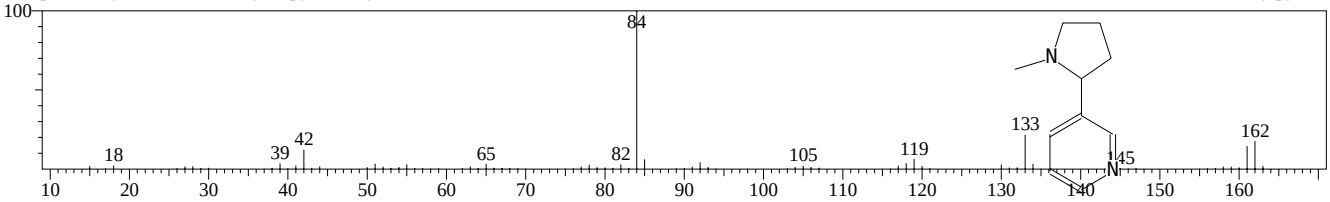
<< Target >>
Line#:3 R.Time:14.683(Scan#:1403) MassPeaks:45
RawMode:Averaged 14.675-14.692(1402-1404) BasePeak:84.10(140506)
BG Mode:Calc. from Peak Group 1 - Event 1



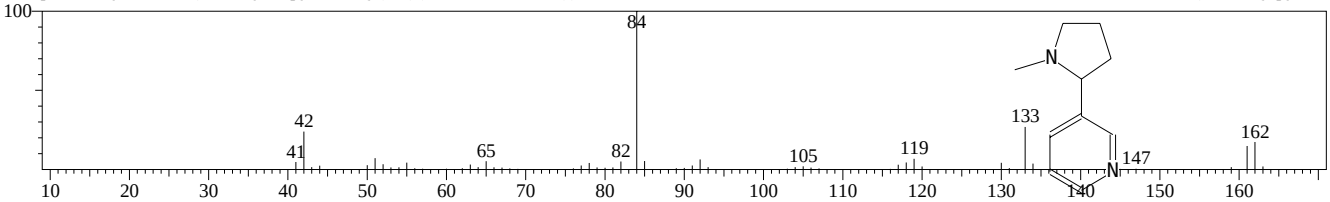
Hit#:1 Entry:11243 Library:NIST11s.lib
SI:97 Formula:C10H14N2 CAS:54-11-5 MolWeight:162 RetIndex:1341
CompName:Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- $$ Nicotine $$ (-)-Nicotine $$ Flux MAAG $$ L-Nicotine $$ Nicotin $$ XL All Insecticide $$ 3-(N-Methylpyrolli



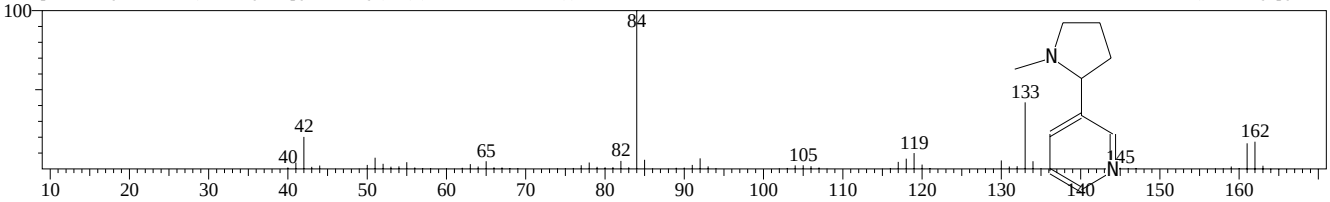
Hit#:2 Entry:21284 Library:NIST11.lib
SI:96 Formula:C10H14N2 CAS:54-11-5 MolWeight:162 RetIndex:1341
CompName:Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- $$ Nicotine $$ (-)-Nicotine $$ Flux MAAG $$ L-Nicotine $$ Nicotin $$ XL All Insecticide $$ 3-(N-Methylpyrolli



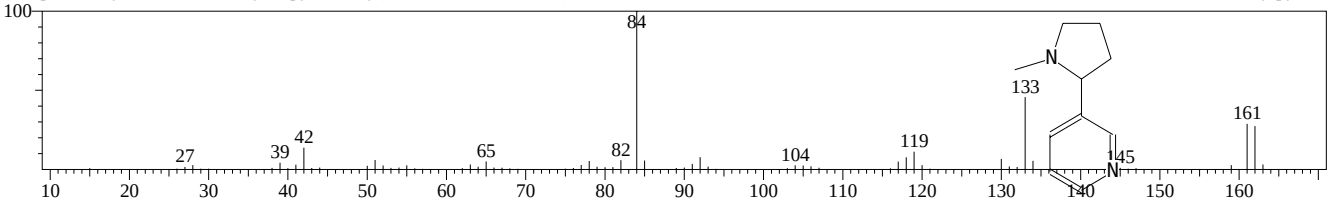
Hit#:3 Entry:11242 Library:NIST11s.lib
SI:95 Formula:C10H14N2 CAS:54-11-5 MolWeight:162 RetIndex:1341
CompName:Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- $$ Nicotine $$ (-)-Nicotine $$ Flux MAAG $$ L-Nicotine $$ Nicotin $$ XL All Insecticide $$ 3-(N-Methylpyrolli



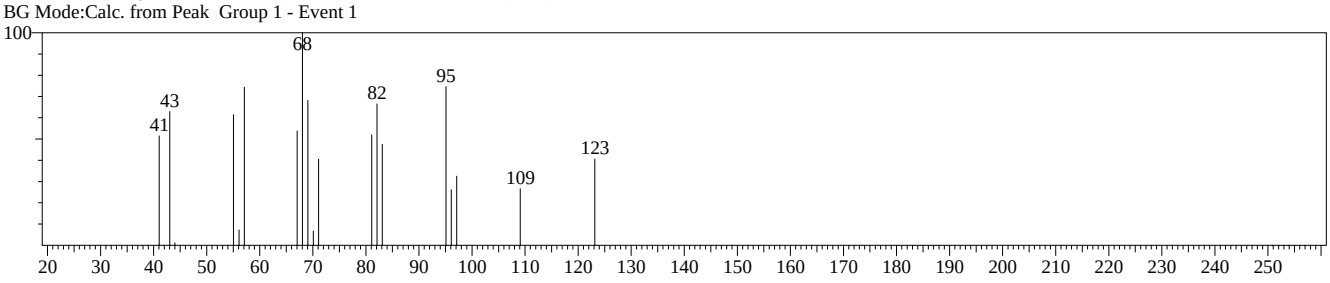
Hit#:4 Entry:11244 Library:NIST11s.lib
SI:94 Formula:C10H14N2 CAS:54-11-5 MolWeight:162 RetIndex:1341
CompName:Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- $$ Nicotine $$ (-)-Nicotine $$ Flux MAAG $$ L-Nicotine $$ Nicotin $$ XL All Insecticide $$ 3-(N-Methylpyrolli



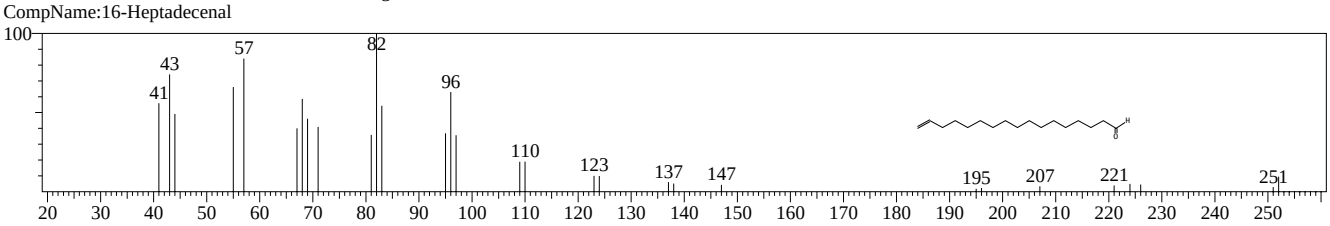
Hit#:5 Entry:11245 Library:NIST11s.lib
SI:91 Formula:C10H14N2 CAS:54-11-5 MolWeight:162 RetIndex:1341
CompName:Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- $$ Nicotine $$ (-)-Nicotine $$ Flux MAAG $$ L-Nicotine $$ Nicotin $$ XL All Insecticide $$ 3-(N-Methylpyrolli



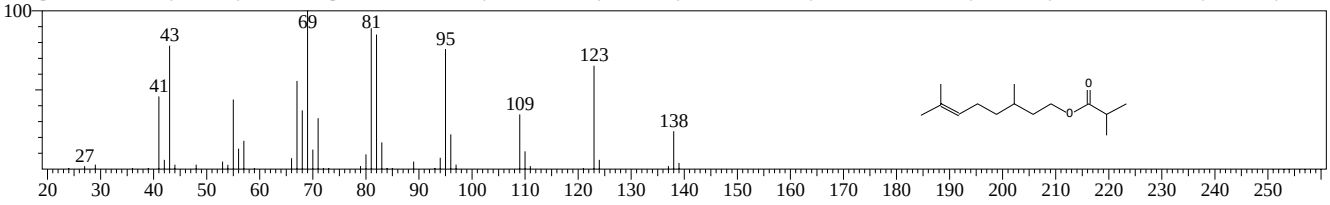
<< Target >>
Line#:4 R.Time:20.475(Scan#:2098) MassPeaks:19
RawMode:Averaged 20.467-20.483(2097-2099) BasePeak:68.05(4977)
BG Mode:Calc. from Peak Group 1 - Event 1



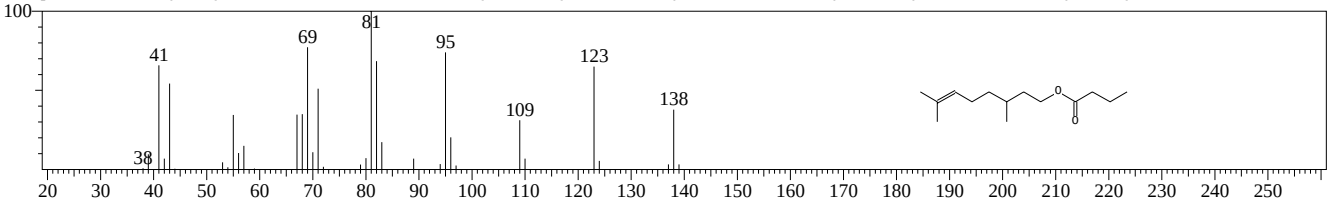
Hit#:1 Entry:81326 Library:NIST11.lit
SI:86 Formula:C17H32O CAS:0-00-0 MolWeight:252 RetIndex:1890
CompName:16-Heptadecenal



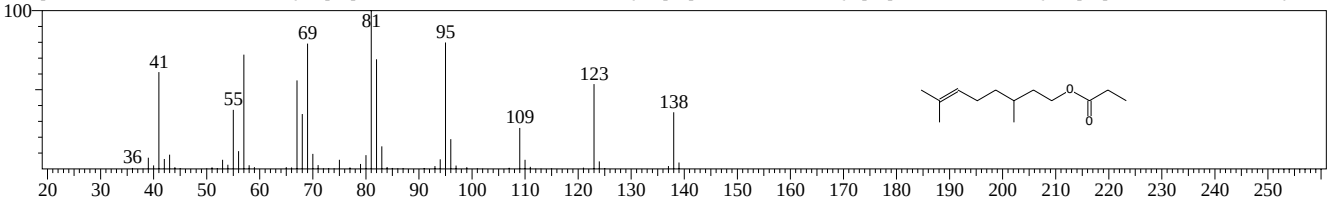
Hit#:2 Entry:62298 Library:NIST11.lit
SI:85 Formula:C14H26O2 CAS:97-89-2 MolWeight:226 RetIndex:1437
CompName:Citronellyl isobutyrate $$ Propanoic acid, 2-methyl-, 3,7-dimethyl-6-octenyl ester $$ Isobutyric acid, 3,7-dimethyl-6-octenyl ester $$ Citronellyl iso-butyrate $



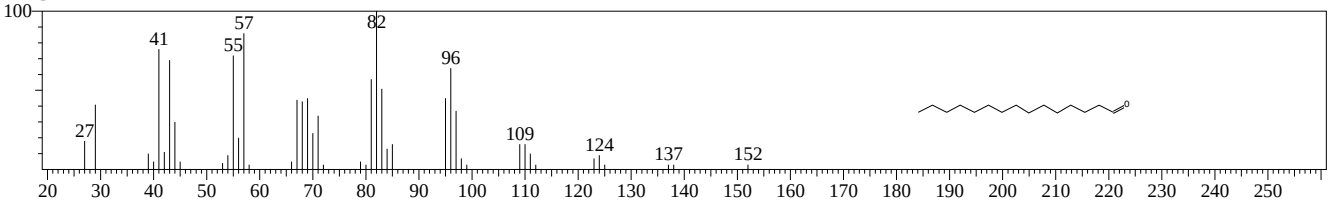
Hit#:3 Entry:20706 Library:NIST11s.lit
SI:84 Formula:C14H26O2 CAS:141-16-2 MolWeight:226 RetIndex:1501
CompName:Citronellyl butyrate $$ Butanoic acid, 3,7-dimethyl-6-octenyl ester $$ Butyric acid, 3,7-dimethyl-6-octenyl ester $$ Citronellyl n-butyrate $$ Natural rhodinol,



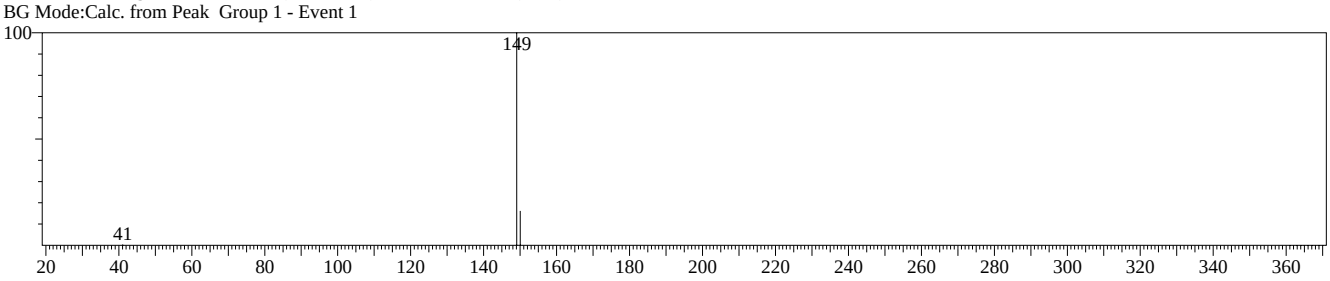
Hit#:4 Entry:19100 Library:NIST11s.lit
SI:84 Formula:C13H24O2 CAS:141-14-0 MolWeight:212 RetIndex:1402
CompName:6-Octen-1-ol, 3,7-dimethyl-, propanoate $$ 6-Octen-1-ol, 3,7-dimethyl-, propionate $$ Citronellyl propionate $$ Citronellyl n-proprionate $$ 3,7-Dimethyl-6-c



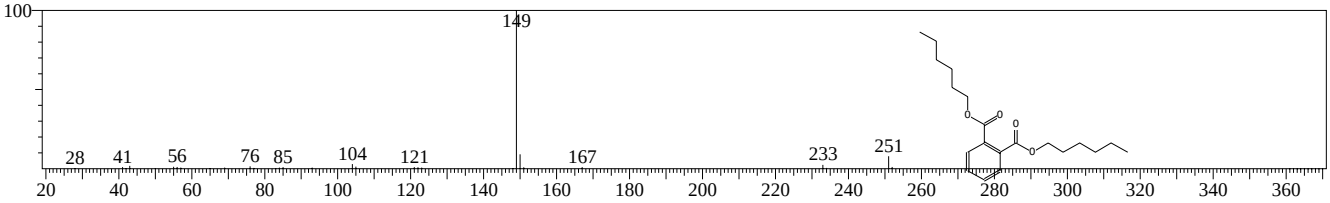
Hit#:5 Entry:20737 Library:NIST11s.lit
SI:84 Formula:C15H30O CAS:2765-11-9 MolWeight:226 RetIndex:1701
CompName:Pentadecanal- $$ 1-Pentadecanal $$ n-Pentadecanal $$



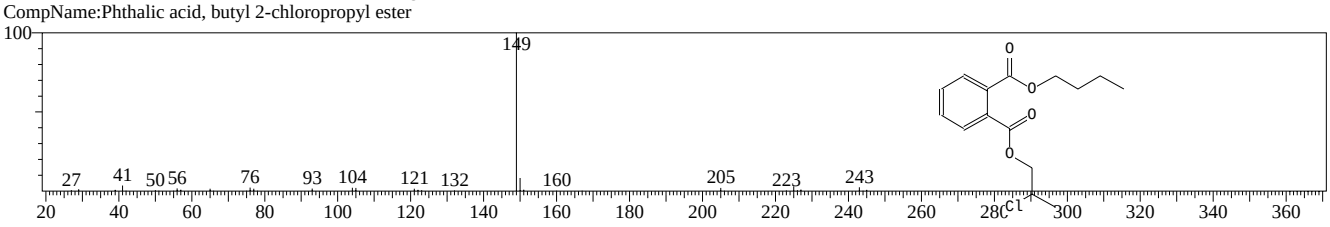
<< Target >>
Line#:5 R.Time:21.733(Scan#:2249) MassPeaks:3
RawMode:Averaged 21.725-21.742(2248-2250) BasePeak:149.05(4743)
BG Mode:Calc. from Peak Group 1 - Event 1



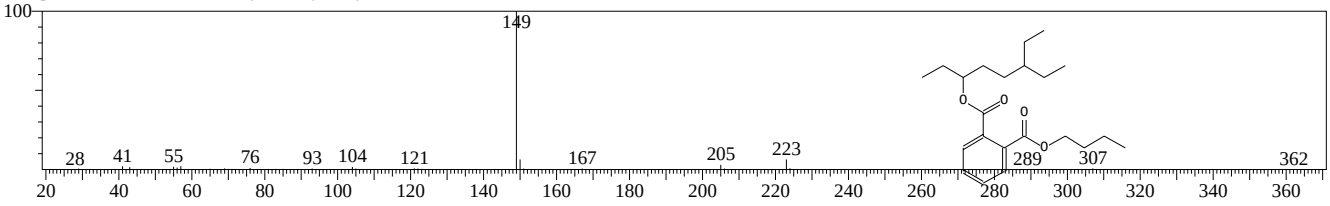
Hit#:1 Entry:27845 Library:NIST11s.lib
SI:86 Formula:C20H30O4 CAS:84-75-3 MolWeight:334 RetIndex:2434
CompName:1,2-Benzenedicarboxylic acid, dihexyl ester $$ Phthalic acid, dihexyl ester $$ Dihexyl phthalate $$ di-n-Hexyl phthalate $$ Dihexylester kyseliny ftalove $$



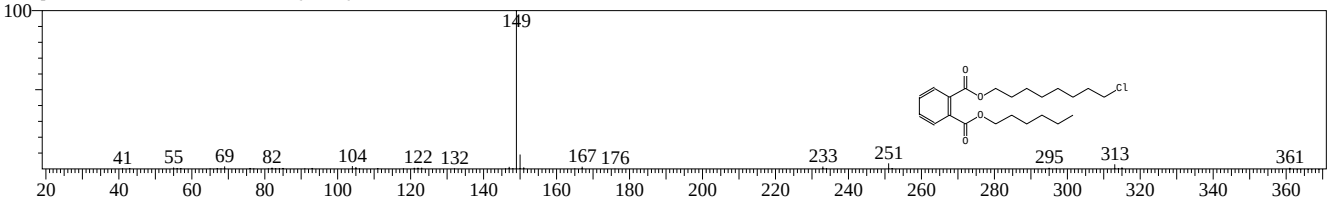
Hit#:2 Entry:116542 Library:NIST11.lib
SI:86 Formula:C15H19ClO4 CAS:0-00-0 MolWeight:298 RetIndex:2078
CompName:Phthalic acid, butyl 2-chloropropyl ester



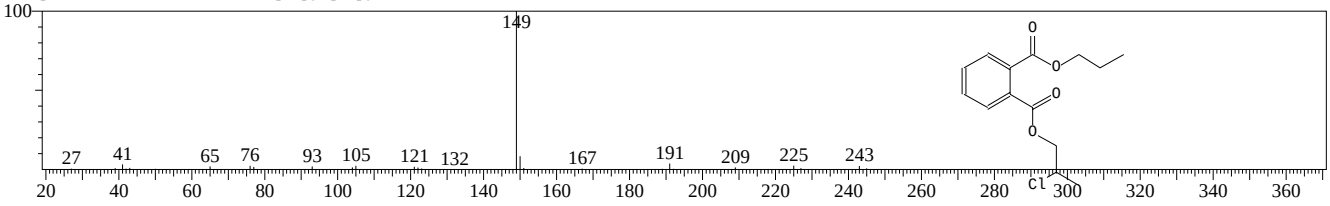
Hit#:3 Entry:163254 Library:NIST11.lib
SI:85 Formula:C22H34O4 CAS:0-00-0 MolWeight:362 RetIndex:2505
CompName:Phthalic acid, 6-ethyl-3-octyl butyl ester



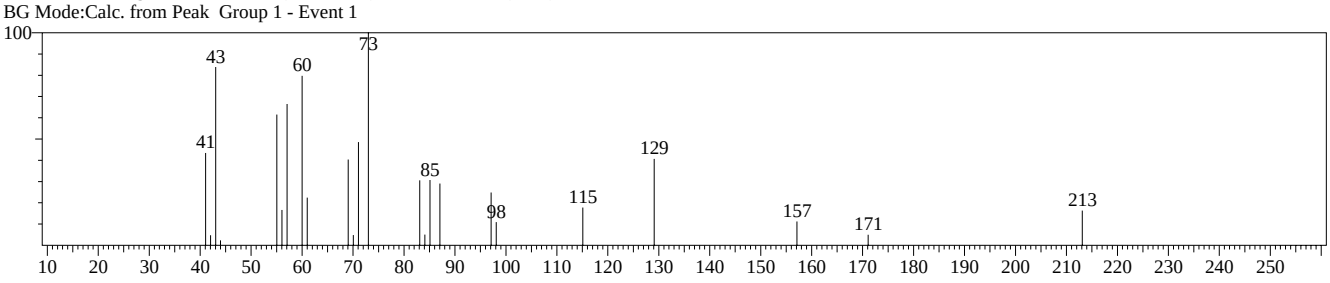
Hit#:4 Entry:180534 Library:NIST11.lib
SI:85 Formula:C22H33ClO4 CAS:0-00-0 MolWeight:396 RetIndex:2858
CompName:Phthalic acid, 8-chlorooctyl hexyl ester



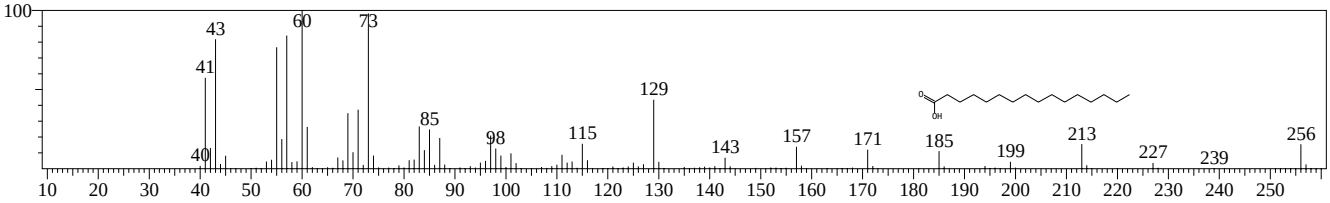
Hit#:5 Entry:105555 Library:NIST11.lib
SI:85 Formula:C14H17ClO4 CAS:0-00-0 MolWeight:284 RetIndex:1979
CompName:Phthalic acid, 2-chloropropyl propyl ester



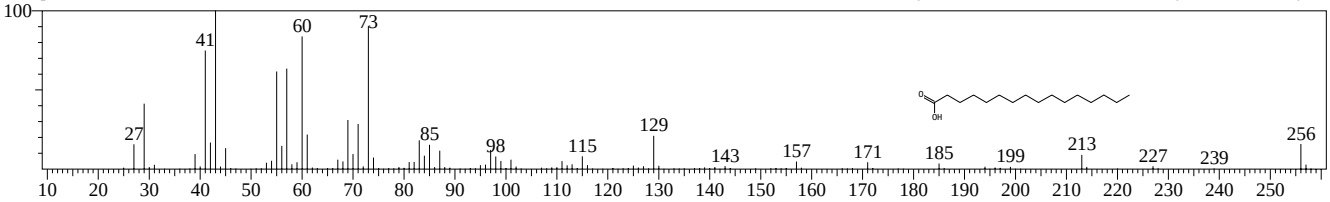
<< Target >>
Line#:6 R.Time:21.775(Scan#:2254) MassPeaks:24
RawMode:Averaged 21.767-21.783(2253-2255) BasePeak:73.00(7214)
BG Mode:Calc. from Peak Group 1 - Event 1



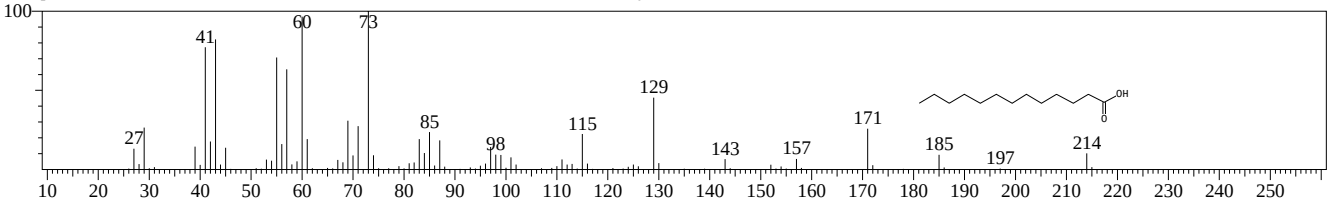
Hit#:1 Entry:23313 Library:NIST11s.lib
SI:87 Formula:C16H32O2 CAS:57-10-3 MolWeight:256 RetIndex:1968
CompName:n-Hexadecanoic acid $$ Hexadecanoic acid $$ n-Hexadecoic acid $$ Palmitic acid $$ Pentadecanecarboxylic acid $$ 1-Pentadecanecarboxylic acid $$ Cetylic



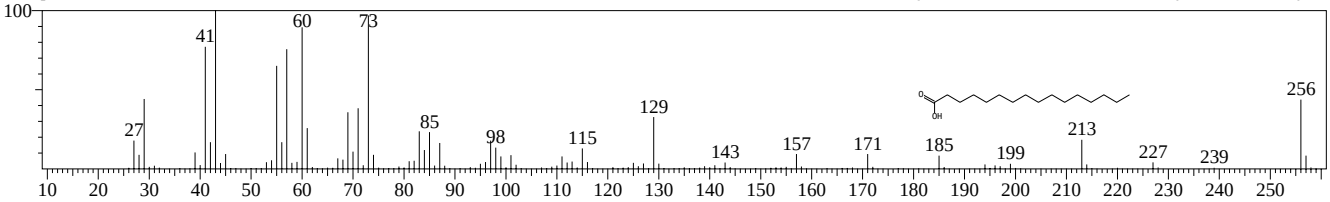
Hit#:2 Entry:84362 Library:NIST11.lib
SI:86 Formula:C16H32O2 CAS:57-10-3 MolWeight:256 RetIndex:1968
CompName:n-Hexadecanoic acid $$ Hexadecanoic acid $$ n-Hexadecoic acid $$ Palmitic acid $$ Pentadecanecarboxylic acid $$ 1-Pentadecanecarboxylic acid $$ Cetylic



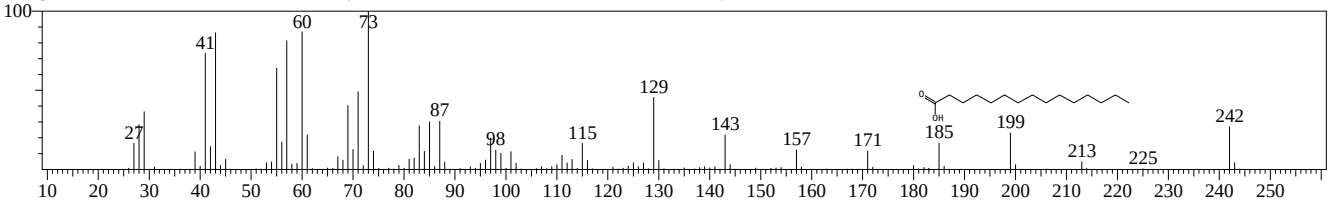
Hit#:3 Entry:53599 Library:NIST11.lib
SI:86 Formula:C13H26O2 CAS:638-53-9 MolWeight:214 RetIndex:1670
CompName:Tridecanoic acid $$ n-Tridecanoic acid $$ n-Tridecoic acid $$ Tridecylic acid $$



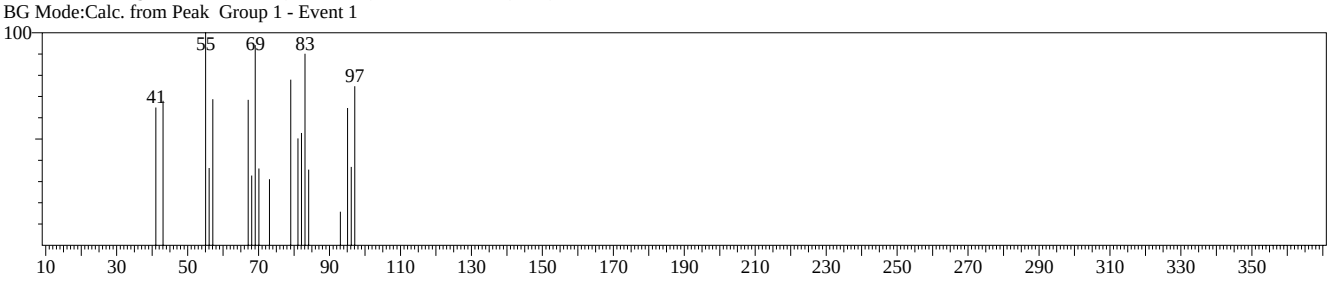
Hit#:4 Entry:23305 Library:NIST11s.lib
SI:85 Formula:C16H32O2 CAS:57-10-3 MolWeight:256 RetIndex:1968
CompName:n-Hexadecanoic acid $$ Hexadecanoic acid $$ n-Hexadecoic acid $$ Palmitic acid $$ Pentadecanecarboxylic acid $$ 1-Pentadecanecarboxylic acid $$ Cetylic



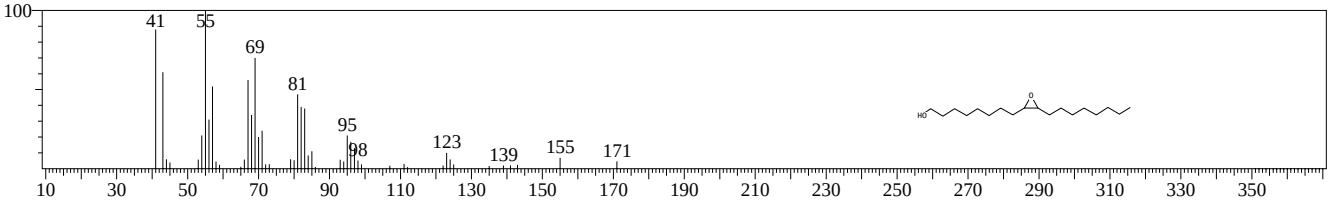
Hit#:5 Entry:22188 Library:NIST11s.lib
SI:85 Formula:C15H30O2 CAS:1002-84-2 MolWeight:242 RetIndex:1869
CompName:Pentadecanoic acid $$ Pentadecylic acid $$ n-Pentadecanoic acid $$ n-Pentadecylic acid $$



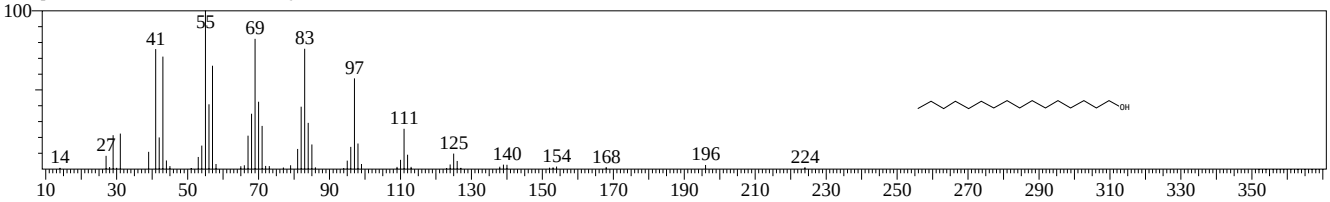
<< Target >>
Line#:7 R.Time:23.492(Scan#:2460) MassPeaks:19
RawMode:Averaged 23.483-23.500(2459-2461) BasePeak:55.05(2242)
BG Mode:Calc. from Peak Group 1 - Event 1



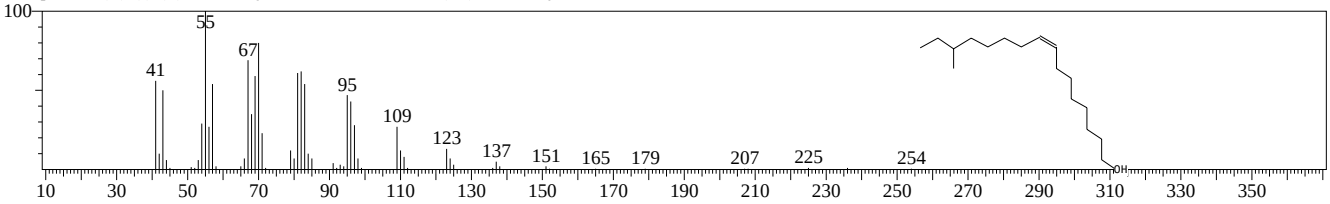
Hit#:1 Entry:106161 Library:NIST11.lit
SI:81 Formula:C18H36O2 CAS:13980-12-6 MolWeight:284 RetIndex:2105
CompName:cis-9,10-Epoxyoctadecan-1-ol $$ 8-(3-Octyl-2-oxiranyl)-1-octanol # $$



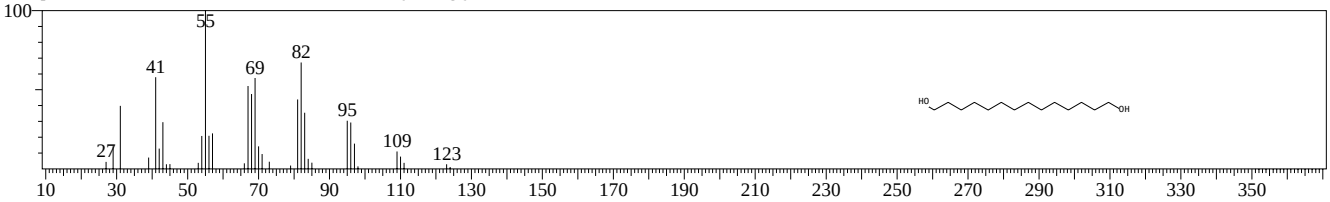
Hit#:2 Entry:73939 Library:NIST11.lit
SI:81 Formula:C16H34O CAS:36653-82-4 MolWeight:242 RetIndex:1854
CompName:1-Hexadecanol $$ n-Cetyl alcohol $$ n-Hexadecan-1-ol $$ n-Hexadecanol $$ n-1-Hexadecanol $$ Adol 52 $$ Adol 52 NF $$ Adol 54 $$ Aldol 54 $$ Alfol 1(



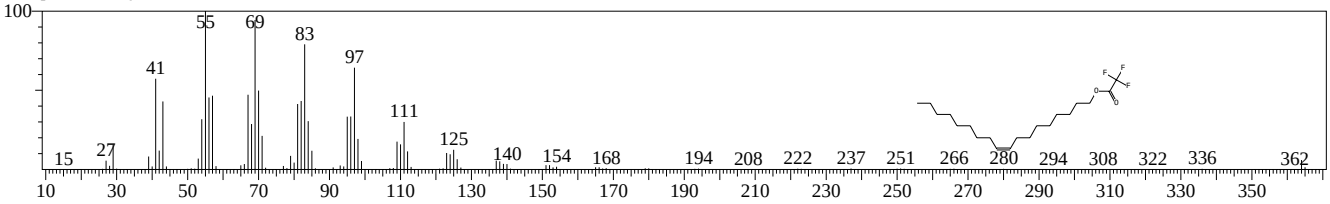
Hit#:3 Entry:82831 Library:NIST11.lit
SI:81 Formula:C17H34O CAS:30689-78-2 MolWeight:254 RetIndex:1898
CompName:(R)-(-)-(Z)-14-Methyl-8-hexadecen-1-ol $$ (8Z)-14-Methyl-8-hexadecen-1-ol # $$



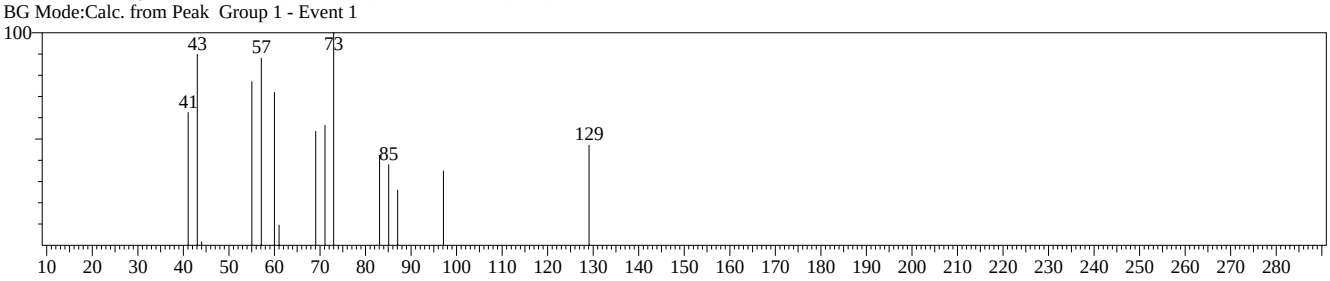
Hit#:4 Entry:65174 Library:NIST11.lit
SI:81 Formula:C14H30O2 CAS:19812-64-7 MolWeight:230 RetIndex:1898
CompName:1,14-Tetradecanediol $$ tetradecamethylene glycol $$



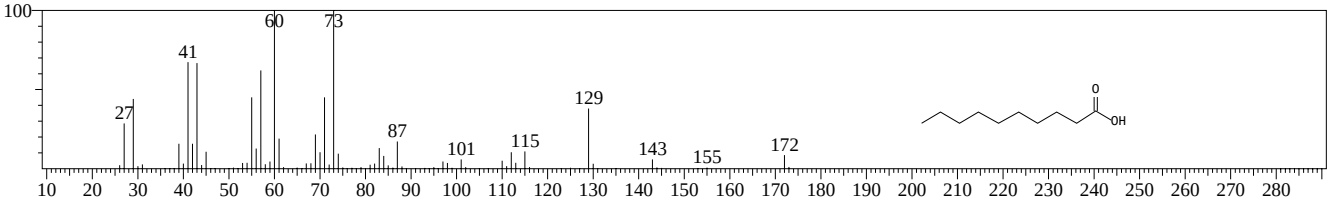
Hit#:5 Entry:164237 Library:NIST11.lit
SI:81 Formula:C20H35F3O2 CAS:0-00-0 MolWeight:364 RetIndex:2019
CompName:Oleyl alcohol, trifluoroacetate



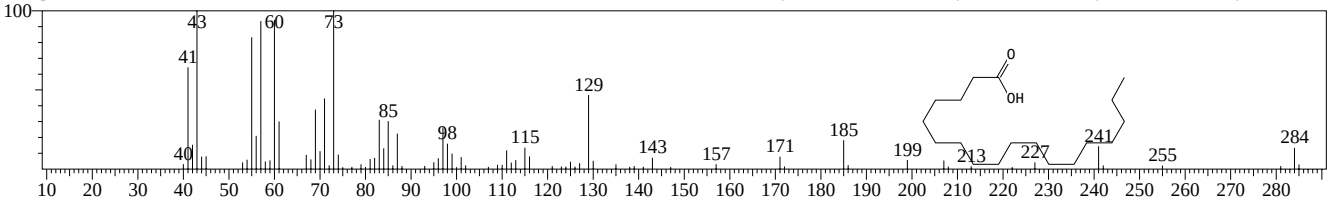
<< Target >>
Line#:8 R.Time:23.692(Scan#:2484) MassPeaks:15
RawMode:Averaged 23.683-23.700(2483-2485) BasePeak:73.00(3466)
BG Mode:Calc. from Peak Group 1 - Event 1



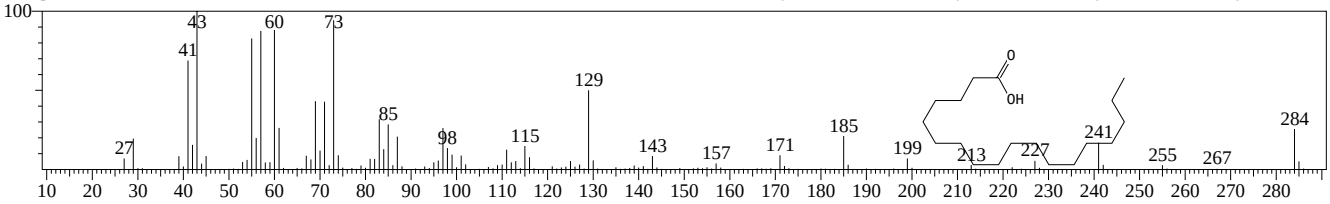
Hit#:1 Entry:13090 Library:NIST11s.lit
SI:81 Formula:C10H20O2 CAS:334-48-5 MolWeight:172 RetIndex:1372
CompName:n-Decanoic acid $$ Decanoic acid $$ n-Capric acid $$ n-Decoic acid $$ n-Decylic acid $$ Capric acid $$ Caprinic acid $$ Caprynic acid $$ Decoic acid $$ De



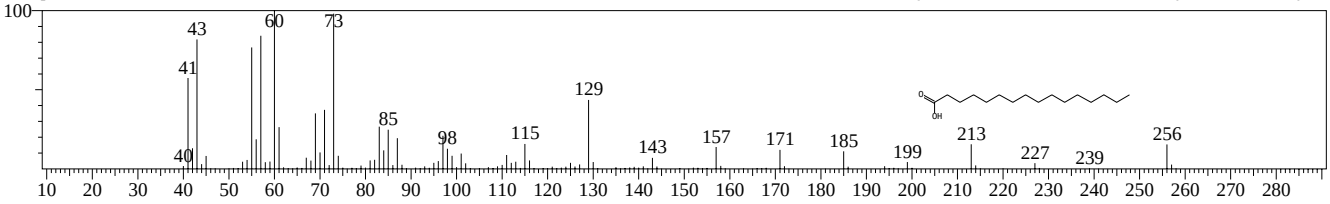
Hit#:2 Entry:25165 Library:NIST11s.lit
SI:81 Formula:C18H36O2 CAS:57-11-4 MolWeight:284 RetIndex:2167
CompName:Octadecanoic acid $$ Stearic acid $$ n-Octadecanoic acid $$ Humko Industrene R $$ Hydrofol Acid 150 $$ Hystrene S-97 $$ Hystrene T-70 $$ Hystrene 80 $



Hit#:3 Entry:106158 Library:NIST11.lit
SI:80 Formula:C18H36O2 CAS:57-11-4 MolWeight:284 RetIndex:2167
CompName:Octadecanoic acid $$ Stearic acid $$ n-Octadecanoic acid $$ Humko Industrene R $$ Hydrofol Acid 150 $$ Hystrene S-97 $$ Hystrene T-70 $$ Hystrene 80 $



Hit#:4 Entry:23313 Library:NIST11s.lit
SI:80 Formula:C16H32O2 CAS:57-10-3 MolWeight:256 RetIndex:1968
CompName:n-Hexadecanoic acid $$ Hexadecanoic acid $$ n-Hexadecoic acid $$ Palmitic acid $$ Pentadecanecarboxylic acid $$ 1-Pentadecanecarboxylic acid $$ Cetylic



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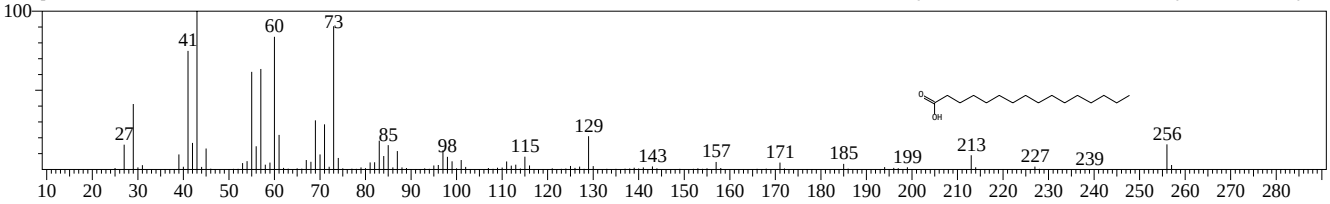

Medicinal uses of tobacco in history

Anne Charlton, BA PhD

The tobacco plant, *Nicotiana*, has probably been responsible for more deaths than any other herb. At present, tobacco smoking is causing over 3 million deaths a year worldwide, and if current smoking trends continue the annual mortality will exceed 10 million by around 2030.[1] Add to this the mortality from cancers caused by oral uses and the death toll becomes still higher. Undoubtedly, tobacco is the most important avoidable cause of premature death and disease in the world.[2]

Tobacco leaves and the smoke generated when they are burned contain over 4 thousand chemicals,[3] the best known of which is nicotine, first isolated from tobacco leaves in 1828 by Posselt and Reimann.[4] It is the nicotine that causes smokers to become addicted to tobacco, and the chemical itself is lethal in small doses.[5] When tobacco smoke is inhaled, the nicotine passes quickly to every organ of the body. The brain and nervous system are stimulated by small doses and depressed by larger ones.[5] Nicotine increases the heart rate and the blood pressure, and may contribute directly to the excess of thrombosis and atheroma in smokers. Nevertheless, nicotine replacement therapy is used in helping people to stop smoking, because it spares them the many other harmful contents of tobacco smoke—for example, the carcinogenic polycyclic aromatic hydrocarbons and N-nitroso compounds; irritant substances such as acrolein; benzene; formaldehyde; ammonia; acetone; acetic acid, and carbon monoxide.[3]

The evidence that tobacco causes cardiovascular disease and lung disease took several hundred years to emerge. In the 15th century, when the use of *Nicotiana* by the indigenous populations in the New World was first observed by Columbus and the plant was brought to Europe, all herbs were considered to have potential therapeutic properties and this new one was used to treat a wide range of conditions. Indeed, *Nicotiana* acquired a reputation as a panacea, to the extent of being called the 'holy herb' and 'God's remedy'.[6] To understand the enthusiasm of Tudor doctors for this newly discovered herb, it is useful to look at the background.

PRECOLUMBIAN AMERICA

There are over sixty species of *Nicotiana*. Apart from a few which appear to be native to Australia,[7] most are indigenous to America.[8] *Nicotiana tabacum*, the plant now raised for commercial tobacco production, is probably of South American origin and *Nicotiana rustica*, the other major species which was carried around the world, came from North America. In 1492, Columbus found Native Americans growing and using tobacco, sometimes for its pleasurable effects but often for treatment of various ills. Some of his sailors observed natives of Cuba and Haiti smoking the leaves,[9] and subsequent European explorers and travellers corroborated both these observations. The name tobacco was originally applied to the plant in error. In fact this term referred to the cane pipe, called a *tabaco* or *tavaco*, with two branches for the nostrils, which was used by the Native Americans for sniffing tobacco smoke.[10] The tobacco itself was variously called *petum, betum, cogioba, cohobba, quauhyetl, picietl* or *yietl*, and these names sometimes appeared later in herbals or pharmacopoeias.[10,11]

As early as 15 October 1492 Columbus noted that dried leaves were carried by a man in a canoe near the island of Ferdinandina because they were esteemed for their healthfulness.[9] In the same year, two members of his crew observed people in what is now Cuba carrying a burning torch that contained tobacco, the purpose of which (it later emerged) was to disinfect and help ward off disease and fatigue.[6] Snuffing of *cogioba* through the *tabaco* caused loss of consciousness, Columbus observed, and it is tempting to speculate that this property was used as an anaesthetic for the trepanning operations which were frequent at that time.

Tobacco, probably mixed with lime or chalk, appears to have been used in these Native American populations as a toothpaste to whiten the teeth, as observed by Nino and Guerra in 1500 and by Vespucci at about the same time in Venezuela.[11] This practice continues today in India, where powdered tobacco, or *masheri*, is rubbed on the teeth for this purpose and tobacco toothpaste is marketed commercially.[12]

It was perhaps in 1500 that the notion of tobacco as a panacea became prevalent. In that year, a Portuguese explorer, Pedro Alvarez Cabral, in Brazil, reported the use of the herb *betum* for treating ulcerated abscesses, fistulas, sores, inveterate polyps and many other ailments, and said it was called the holy herb because of its powerful virtue in desperate cases.[6] Also, reports on medicinal use of tobacco by Native American populations continued to emerge in quantity. For example, in 1529, a Spanish missionary priest, Bernadino de Sahagun, collected information from four Mexican physicians about use of tobacco for medicinal purposes. He recorded that breathing the odour of fresh green leaves of the plant relieved persistent headaches. For colds and catarrh, green or powdered leaves should be rubbed around inside the mouth. Diseases of glands in the neck could be cured by cutting out the root of the lesion and placing on it crushed tobacco plant hot and mixed with salt, on the same spot.[9]

Later reports of tobacco use by the Native Americans might be less reliable than those from contemporary sources, but in 1934 Fernando Ocaranza summed up the medicinal uses of tobacco in Mexico before 1519 as antidiarrhoeal, narcotic and emollient; he said that tobacco leaves were applied for the relief of pain, used in powdered form for the relief of catarrh and applied locally to heal wounds and burns.[6] There are many other reports of medicinal uses of tobacco by precolumbian Native Americans, but the foregoing list is sufficient to indicate the wide usage[6,9,13] and to explain why travellers wished to take the plants and seeds back to Europe.

EARLY USE IN EUROPE

In the days when treatments for many diseases were being sought and herbs of all kinds were considered worth trying, the news of an unfamiliar herb with reputed therapeutic efficacy generated much enthusiasm. So great was the excitement that Nicolas Monardes, the Spanish physician-botanist, included it in a work originally published in the 1570s and later rendered into English as *Joyful Newes out of the New-Found World*.[14] It contains much of what we know about medicinal tobacco at that stage. Tobacco came to feature in a plethora of herbals and pharmacopoeias produced throughout Europe by physicians, botanists, explorers, missionaries and historians. Between 1537 and 1559, books published in Europe and Mexico commonly referred to the medicinal uses of tobacco among the indigenous populations of the New World, with eyewitness accounts of its therapeutic application in general bodily ills, catarrh, colds, and fevers, as an aid to digestion and in prevention of hunger and thirst, as a purgative and as a narcotic.[13]

There is some uncertainty which species of *Nicotiana* was first brought to Europe. Probably it was the Flemish herbalist Rembert Dodoens, in Antwerp, who in 1554 published the earliest figure of *N. rustica*, in his *Cruydeboeck*, seemingly drawn from a specimen plant.[15] Dodoens incorrectly captioned the figure *Hyoscyamus luteus*, yellow henbane, possibly because of its narcotic qualities. Fuchs in Vienna included four illustrations of *N. rustica* and *N. tabacum* in his extended herbal of 1542, though this had not been published.[10] Figure 1 is from about 1570.

Figure 1

The first published illustration of *Nicotiana tabacum* by Pena and De L'Obel, 1570-1571 (*shrpium adversana nova*: London). The small illustration on the right of the picture shows how the Indians and sailors smoked *Nicotiana* leaves in a funnel [from New ...

Herbals at this time described not only the plants but also their medicinal applications. A notable example is the illustration from about 1555 by the Franciscan monk André Thevet in Brazil, of smoke being blown at a man from a primitive cigar.[16] The condition being treated was later identified as yaws.[17] He warned that the smoking of this material (*petum*) could cause weakness and fainting, and Thevet was not the only one to express reservations about the safety of tobacco. Conrad Gesner, the botanist, physician and scientist, analysed tobacco leaves and reported on their poisonous qualities.[18] However, numerous herbs used in medicine had similar toxic properties, and during the sixteenth century there were few ailments for which tobacco was not prescribed.[19] The most interesting, and perhaps the most convincing, indication was in the treatment of *Noli-me-tangere*. This name was given to slow-spreading ulcerating lesions of the skin.[20] Later publications suggest that the condition embraced such conditions as lupus and syphilis but that the most frequent cause was probably basal cell cancer (rodent ulcer).[20]

In about 1560, according to Monardes, the French ambassador to Lisbon, Jean Nicot, was presented with a herb by the keeper of a prison he was visiting.[14] It was described as a strange plant brought from Florida. The ambassador had it planted in his garden where ‘it grewe and multiplyed maruellously’. One of Nicot's pages had a *Noli-me-tangere* on his cheek which was beginning ‘to take root already in the gristles of the nose’, and had himself been applying bruised tobacco leaves and juice to it. Hearing of this, Nicot ordered that the tobacco treatment should be continued for eight or ten days, and at the end of this time ‘this saide *Noli me tangere* was utterly extinguished and healed’. Throughout the treatment Nicot had the patient's progress monitored by a respected physician to the King of Portugal, who certified the happy outcome. So pleased was Nicot with this cure that, when he heard of two ladies in France who had carcinomas for which no cure could be found, he sent the herb to King Francis II, the Queen Mother and many Lords of Court. Nicot was so liberal and generous with tobacco that it became known as the ambassador's herb or *nicotiane*—the origin of the name by which we now know it. Nicot used it to treat the father of one of his pages for an ulcerated leg of two years' duration, and healing was reported after ten to twelve days. Similarly, complete healing was described after eight or ten days' treatment in ‘a woman that had her face covered with a Ringworme rooted, as though she had a visor on her face’, and a captain's son was cured of the ‘king's euill’ (scrofula). When a cook in Nicot's household nearly cut off his thumb with a chopping knife, the steward ran for the tobacco plant and bound the thumb back on; after five or six dressings of the same sort, the wound healed. All these uses involved external application of tobacco leaf and its juice, and various recipes are described. Monardes, for instance, specifies that the leaves must be stamped in a clean mortar and both the juice and the leaves applied to the lesion. To ‘cleanse, incarnate, and knit together all maner of wounds’,

> *‘Take a pound of the freshe Leaves of the sayed Hearbe, stampe them and mingle tham with a newe Waxe, Rosine, common oyle, of each three ounces, let tham boyle altogether, untill the juice of the Nicotiane be consumed, then add thereto three ounces of Venise Turpentine, straine the same through a linen cloth, and keep it in Pottes to your use.’*

However, even in this first flush of enthusiasm for the medicinal uses of tobacco, there were those who questioned its efficacy.[21] Philaretes, a doctor writing in 1602, raised many criticisms, especially of the indiscriminate use of the herb for all diseases in all age groups without specific measured prescriptions.[22] Vaughan in 1612, although declaring that ‘tobacco well dried, and taken in a cleane Pipe fasting, in a moist morning, during the Spring or Autumne, cureth the megrim, the toothache, obstructions proceeding of cold and helpeth the fits of the mother’, warned that it could do much harm when abused.[23] John Cotta, commenting in 1612 on the use of tobacco as a panacea, remarked ‘Is not this high-blased remedy now manifestly discovered, through intemperance and custome, to be a monster of many diseases?’;[24] and in 1633 James Hart, another Doctor in Physick, wrote ‘let no man deceive himself so farre, as to think this to be some famous Panacea, Nepenthe or some golden Elixir, whereof hath beene much bragging, but small benefit as yet reaped’, and added ‘And of this I am verily perswaded, that the excessive and disorderly use of this simple, is as no small cause, as of the more frequent raigning of divers dangerous diseases among us...’.[25] As the seventeenth century moved on, doctors increasingly mistrusted tobacco as a medicine, but this did not prevent its retention in pharmacopoeias. John Wesley's *Primitive Physick*, first published in 1747, recommended it for earache (‘blow the smoke of tobacco strongly into it’), for falling sickness, and for piles (‘apply a tobacco leaf steeped in water twenty-four hours’). Such advice continued as late as the edition of 1847.[26]

THE NINETEENTH CENTURY

After the isolation of nicotine from tobacco leaves in 1828,[4] the medical world became yet more mistrustful of tobacco as a general treatment, now aware that the plant contained a dangerous alkaloid. Nicotine began to be used alone and more effort was made to measure doses. For example, a preparation of nicotine salicylate as a 0.1% salve replaced an infusion of leaf tobacco boiled in water as a treatment for scabies.[17] However, even tobacco smoke *per rectum* was still being advocated, for conditions as varied as strychnine poisoning, constipation, strangulated hernia, tetanus, hydrophobia and worms.[9] In a 1958 paper Silvette and co-workers[17] scanned the medical press for case studies of tobacco treatments published between 1785 and 1860 and provided an overview of treatment outcomes for a range of conditions. Subsequently Stewart[13] analysed these 128 cases and came up with the following breakdown: 97 treatments successful, 4 fatal, 10 poisoned the patient, 17 other outcomes. The allegedly successful ones are summarized in Box 1.

Box 1 **'Successful' uses of tobacco as identified by Stewart**

Tobacco administered externally

Bites of poisonous reptiles and insects; hysteria; pain, neuralgia; laryngeal spasm; gout; growth of hair; tetanus; ringworm ; rodent ulcer; ulcers; wounds; respiratory stimulant

Tobacco administered by rectum

Constipation; haemorrhoidal bleeding

Tobacco administered by mouth

Strangulated hernia (smoke by mouth); malaria or intermittent fever; dislodging obstructive material from oesophagus by inducing vomiting

Tobacco administered by inhalation

Nasal polyps.

Among those who doubted the claims of success was Todd, in his Lumleian Lecture of 1849. 'Tobacco', he declared, 'undoubtedly reduces the polar state of the cord, but it produces at the same time a state of fearful depression. It is likewise an unsafe and not a manageable remedy. I have seen more than one patient die, cured of Tetanus under this remedy.'[27] During the nineteenth century, new methods of administering tobacco treatments included aetherial tincture, poultices and snuff patches.

THE TWENTIETH CENTURY AND AFTER

Even in the twentieth century, the therapeutic use of tobacco did not completely lapse. For example, in 1924, a salve made of burned tobacco leaves mixed with lanolin was said to be dessicant, stimulant and antiseptic for pruritus, ringworm, athlete's foot, superficial ulcers and wounds (it was also said to be good as a metal polish).[17] Moreover, its disinfectant properties continued to generate debate. We have seen how, in the New World discovered by Columbus, tobacco smoke was used to ward off disease, and the sixteenth century doctors applied the leaves or a tobacco ointment or poultice to infected wounds. During the London plague of 1665 children were instructed to smoke in their schoolrooms;[28] and in 1882, in a Bolton outbreak of smallpox, tobacco was actually issued to all the residents of a workhouse.[29] However, claims for such protective effects did not go indisputed. For example, in 1889 an anonymous article in the *British Medical Journal*,[30] whilst acknowledging the experimental evidence that the pyridine in smoke kills germs and the evidence that smokers appeared to be at lower risk of diphtheria and typhus, concluded that people who can tolerate tobacco are likely to be robust in other ways and thus able to resist infection; non-smokers, the article concluded, would be ill advised to take up smoking, which would make them more vulnerable. An anonymous article in *The Lancet*[31] in 1913 discusses the 'pyridin' content of tobacco smoke and describes experiments showing that tobacco smoke destroys the comma bacillus of cholera; but again it warns that tobacco smoking can 'give rise to constitutional effects which diminish the resisting power of the body to disease'.

Later in the twentieth century, attention switched to diseases affecting the brain and nervous system. In 1926, Moll reported that, when thirteen patients with post-encephalitic parkinsonism were treated with subcutaneous injections of nicotine, nine showed immediate improvement in muscular movement.[32] He concluded that, although the benefit was only temporary, 'the immediate results were indisputable'. A kindred observation is that, in at least three case-control studies, the relative risk of Parkinson's disease was lower in smokers than in non-smokers, though other factors could be operating to produce this apparent effect.[33] Case-control studies also suggest a possible inverse association between cigarette smoking, Alzheimer's disease[34] and Tourette's syndrome,[35] but the same reservations apply.

CONCLUSION

Tobacco has long been removed from pharmacopoeias and from medical practice. Stewart's conclusion from her review to 1860 was that 'The best that can be said of it was that in many cases tobacco alleviated pain.'[13] In my own review of the published work four points struck me forcibly. First, too much was expected of tobacco. In medieval times, most herbs would be used only for a few conditions in which it was deemed effective—not for a vast range of disorders from head lice to haemorrhoids, from hysteria to tetanus, as happened with tobacco. Secondly, writings on this subject commonly imply that nicotine is the only active medicinal constituent, yet the various species of *Nicotiana* contain many other alkaloids.[36,37] Thirdly, the leaves and juice were much used for skin disorders, possibly including basal cell cancer. Might tobacco leaves contain an anticancer agent, as proved to be the case with periwinkle (vinca alkaloids)? Fourthly, in therapeutic applications of tobacco, dosage was largely uncontrolled. With any useful agent, excess dosage will do harm. I suggest we should set aside the prejudices generated by the ill-effects of tobacco smoking and examine the leaves systematically for substances of therapeutic value.

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Pilot Study on Efficacy Evaluation of Siddha Remedy Adathoda Cigarette in Reducing the Serum Nicotine Level for Tobacco Smoking De-Addiction

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Abstract

Cigarette smoking remains the leading cause of death throughout the world, further it becomes the serious factor contributing premature death in the developing countries like India. Tobacco addiction involves the interplay of pharmacology, learned or conditioned factors, genetics, and social and environmental factors .The pharmacologic reasons for nicotine use are enhancement of mood, either directly or through relief of withdrawal symptoms, and augmentation of mental or physical functions. The major drawback of nicotine upon chronic usage causes anxiety and stress. Management of tobacco withdrawal becomes the major concern in subjects of de addiction program. Several methodologies have been adopted around the globe to manage the nicotine with symptoms of such as irritability, depressed mood, restlessness but most of them fail to provide successful relief. As an attempt of modern therapy with the conventional traditional siddha remedy. The present investigation aimed at supplementing the Adathoda cigarette (AC) mentioned in vedic literature Gunapadamporutpanbunool. Present pilot study was carried out in 10 male patients with three AC per day for the period of 2 months with decrement from regular nicotine cigarette (NC) usage starting from 75% at 1st week to 25% in the fourth week of the study. The results of the study have clearly projects that there was a significant decrease in the level of blood nicotine level in the subjects exposed to AC along with regular NC. Hence it was concluded based on the results of the study that the siddha remedy AC being an herbal moiety maybe considered as a drug of choice in tobacco withdrawal subjects.

Keywords: Tobacco withdrawal, Nictoine, Siddha remedy, Adathoda cigarette, Nicotine cigarette

1. Introduction

Tobacco use is associated with 5 million deaths per year worldwide and is considered as one of the leading causes of premature death. Comprehensive tobacco control programs can significantly reduce the prevalence of tobacco use. An important component of a comprehensive program is the provision of treatment for tobacco addiction. Treatment involves targeting multiple aspects of addiction including the underlying neurobiology and behavioral processes. Currently there are about 1.2 billion smokers in the world and half of these smokers today will die of smoking caused diseases. Smoking is responsible for 5 million deaths per year and if current patterns of smoking continue, it is projected to kill 10 million smokers per year in the year 2020. The prevalence varies a great deal, from less than 5% to over 55% in different countries.

Use of nicotine sustains tobacco addiction, which in turn causes devastating health problems, including heart disease, lung disease, and cancer, and increased susceptibility to a variety of infectious diseases. Smoking harms almost every organ of the body [1]. Quitting smoking at any age leads to significant reductions in the risks associated with it, and the vast majority of smokers in the United States indicate an interest in quitting [2]. Natural products still remain the most important source for discovery of new and potential drug molecules. Medicinal plants are important sources of practical drugs for people throughout the year. Nature acts as a prominent reservoir for new and novel therapeutics.

Adhatodavasica (L.)Nees (Acanthaceae), known commonly as Malabar nut tree, is a shrub growing throughout the Indian peninsula. *Adhatodavasica* Nees.leaf (*Vasaka*), is reported to be an expectorant [4], abortifacient [5], antimicrobial [6,7], antitussive and anticancer [8,9]. Important chemical constituents of leaf include pyrroloquinazoline alkaloids, vasicine, vasicol, adhatonine, vasicinone, vasicinol, vasicinolone [10]. Vasicine was reported to have bronchodilatory, respiratory stimulant and uterine stimulant effect [11]. Vasicinone was shown to have bronchodilatory, weak cardiac stimulant and antianaphylactic action [12]. Still now there is no proper alternative therapy available for proper clinical management of tobacco withdrawal on de addiction subjects. Hence the current study has been undertaken to explore the alternate siddha remedy for tobacco de addiction in 10 patients as a pilot study.

2. Materials and Methods

2.1.Collection and Authentication of the Plant Material

The required raw drug *Justiciaadhatoda*linn (Adhatodai) Leaf were collected from kaveri farm virudhachalam. The raw drugs were b authenticated by the Asst. Professor Medicinal botany in NIS Chennai. The raw drug was purified and the medicine will be prepared as per SOP in Gunapadam laboratory of National Institute of siddha.

2.1. Purification and Formulation

Adhatodai leaf with the specification of length of the leaf :8-10 cm, breath of the leaf :3-5 cm and weight of the leaf : 3-5gm were cleaned with wet cloth and dried in shadow , followed by this the mid vein were removed and the dries product were rolled cylindrically with the structure similar to conventional cigarette which is commonly called as Adhatodaisuruttu in Tamil the final rolled form of the leaf were allowed to shadow dry and then stored in clean and dry container for further usage.

2.2. Subject selection and Study design

Pilot study comprises of 10 subjects with the clinical Symptoms of tobacco smoking addiction age between 20 to 60 years. The entire study was conducted on Out-patient department of Ayothidass Pandithar Hospital (OPD), National Institute of Siddha, Tambaram Sanatorium, Chennai-47, Tamil Nadu, India. Institutional ethical committee clearance was obtained for this study with the total study period of 2 months.

2.3. Inclusion criteria

- Age: 20- 60 Years
- Sex: Male
- Patient Having The Symptoms of tobacco smoking addiction .
- Patient Willing To Undergo Routine Blood Investigation.
- Patient Willing To Participate In Trial And Signing In Consent Form.
- Existing Smokers

2.4. Exclusion Criteria

- Renal Disease
- Cardiac disease
- Lung disease such as COPD, Fibrosis, PTB etc.

2.5. Withdrawal criteria:

- Intolerance to the drug and development of adverse reactions during the drug trial.
- Poor patient compliance & defaulters
- Patients turned unwilling to continue in the course of clinical trial
- Patient will not take medication regularly

2.6. Diagnostics Methods

1.Clinical Assessment
2.Siddha Assessment
3.Routine Investigations
4.Special Investigation

2.7.1. Clinical assessment

- Nausea
- constipation
- Abdominal Pain
- Headache
- Dizziness
- Shaking and Tremors
- Seizures
- Dark Gums and Lips
- Chest Pain
- Numbness
- Cold fingers or toes
- Bad breath
- Confusion
- Anxiety
- Insomnia
- High Pulse Rate
- No Appetite
- Increased Blood Pressure
- Fatigue, And General Weakness.
- Central Nervous System Depression

2.7.2. Siddha Assessment

• **Thinai (Living Place)** Kurinchi (Hill Areas) Mullai (Forest) Marutham (Fertile Land) Neithal (Costal land) Paalai (Desert)	• **Paruvakaalam (Season):** KaarKaalamKoothirKaalamMunpaniKaalamPinpaniKaalamElavenilKaalam MuthuvenilKaalam	• **Poripulankal:** Mei (Skin) Vaai (Tongue) Kan (Eye) Mooku (Nose) Sevi (Ear)
• **Gnanenthiriyam and Kanmenthiriyam:** Vaai (Buccal Cavity) Kaal (Lower Limb) Kai (Upper Limb) Eruvaai (Anorectal Region) Karuvaai (Uro- Genital Region)	• **EzhuUdalKattugal:** Saram Senneer Uoon Kozhuppu Enbu Moolai Sukkilam/Suronitham	• **EnnVagaiThervu(Eight Diagnostic Methods)** Naadi Sparisam Naa Niram Mozhi Vizhi Malam Moothiram Neerkuri

2.7.3.Routine Investigations

• Hb (gms/dl) • PCV • MCV • MCHC • MCV • Bleeding Time • Clotting Time • Smear Study	• Total RBC (million/Cu.mm) • Total WBC (cubic mm) • Differential Count : (%) Polymorphs Lymphocytes Monocytes Esinophils Basophils • ESR(mm/Hr)	• Blood Sugar Level Fasting (mg/dl) Post Prandial (mg/dl) Random (mg/dl) ECG Lung X- ray. Lung Function Test

2.8.Specific Investigations

Serum nicotine level

2.9. Treatment Schedule [13]

On the first day onwards the trial drug Adathodasurruttu was provided for 7days. The trial drug given by the investigator in the OP Department of Maruthuvam, NIS, Chennai. The patients will be asked to have a regular treatment in the op department once in 7 days. In every visit the clinical assessment will be recorded in the prescribed proforma. Tapering method with decrement from regular nicotine cigarette (NC) usage starting from 75% at 1st week to 25% in the fourth week of the study. The recommended dosage of treatment schedule would be 3 cigarette per day .The laboratory investigation will be done before and after treatment and recorded in the prescribed format. At the end of the trial the patients advised to come for follow up for two months for observation.

Name of The Drug : Adathoda cigarette (AC)
Dosage : 3 cigarette / day
Tapering method : 1st week-Reduce the No of cigarette into ¾ from those the patient already use
2nd week-2/4.
week -1/4
4th week – 1or 2 only weekly once.
Indication : Tobacco Smoking De-Addiction .
Book ref : Gunapaadam –porutpanbunool-Mooligaivaguppu
Author Name : VaithiyaRathinam K.S MurugaesaMudhaliyar
Edition : 2nd Edition 2008

2.10. Statistical analysis

Data's will be analyzed using data software under the guidance of SRO (stat), NIS. The level of significance will be 0.05 descriptive analysis will be made and necessary tables/graphs generated to understand the profile of the patients included in the study. Student 't' test and chi-square test are proposed to be performed for quantitative and qualitative data.

3. Results

Result analysis of the present study has revealed that patients presented with the symptoms of tobacco withdrawal was concomitantly administered with siddha remedy AC at the dose of three per day with the continuous decrement of conventional nicotine based cigarette. At the end of the trial period subjects were screened for serum nicotine level. The data have shown that there was significant decrease in the level of serum nicotine level before and after treatment with AC. Before treatment the highest serum nicotine level was found to be 220.2 ng/ml treatment with AC has shown significant decrease in the level of serum nicotine at the level of 16.41 ng/ml. As shown in table 1

Table 1: Serum Nicotine level of subjects treated with Adathoda cigarette before and after treatment

Subject No	Before Treatment Nicotine level in ng/ml	After Treatment Nicotine level in ng/ml
1.	170.18	24.8
2.	193.42	16.41
3.	107.66	46.24
4.	121.84	32.1
5.	220.20	20.14
6.	180.14	18.17
7.	140.16	25.13
8.	190.41	58.02
9.	117.28	31.16
10.	144.1	40.24

4. Discussion

The risk of tobacco dependence increases when smoking begins early [14].Studies of the developing brain in animals suggest that nicotine can induce permanent changes that lead to addiction. Brain changes in adolescent rats exposed to nicotine are greater than those in exposed adult rats. Adolescent rats that have been exposed to nicotine have higher rates of nicotine self-administration as adults, which is consistent with the idea that early exposure to nicotine increases the severity of dependence [15,16]

Nicotine acts on nicotinic cholinergic receptors, triggering the release of neurotransmitters that produce psychoactive effects that are rewarding. With repeated exposure, tolerance develops to many of the effects of nicotine, thereby reducing its primary reinforcing effects and inducing physical dependence (i.e., withdrawal symptoms in the absence of nicotine). Smoking behavior is influenced by pharmacologic feedback and by environmental factors such as smoking cues, friends who smoke, stress, and product advertising. Levels of nicotine in the body in relation to a particular level of nicotine intake from smoking are modulated by the rate of nicotine metabolism, which occurs in the liver largely by means of the enzyme CYP2A6. Other factors that influence smoking behavior include age, sex, genetics, mental illness, and substance abuse.

Nicotine withdrawal causes anxiety and stress, both of which are powerful incentives to take up smoking again [17].Cessation of smoking causes the emergence of withdrawal symptoms: irritability, depressed mood, restlessness, and anxiety [18]. The intensity of these mood disturbances is similar to that found in psychiatric outpatients [19].Result analysis of the present study has revealed that patients presented with the symptoms of tobacco withdrawal was concomitantly administered with siddha remedy AC at the dose of three per day with the continuous decrement of conventional nicotine based cigarette. At the end of the trial period subjects were screened for serum nicotine level. The data have shown that there was significant decrease in the level of serum nicotine level before and after treatment with AC. Before treatment the highest serum nicotine level was found to be 220.2 ng/ml treatment with AC has shown significant decrease in the level of serum nicotine at the level of 16.41 ng/ml. The additional benefits offered by AC are its tendency to cause broncho dilation which aids in COPD patients to respire at the maximum comfort.

5. Conclusion

Nicotine withdrawal symptoms such as anxiety, stress and depression offers greater physical and mental discomfort in subjects under tobacco de addiction program. Hence there is a need of the hours of research pertains to alternate therapy in particular form siddha origin which can able to manage such symptoms are at greater demand. In the present study treatment with AC has greatly reduced the serum nicotine level in the subjects underwent treatment. Hence it was concluded from the results that the siddha remedy AC can be used as an alternate strategy in managing the clinical signs of the patients under tobacco de addiction program.

Acknowledgements

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TEST REPORT

Report Number and date	**CTL/CH/N-2881/2021-22 & 15.07.2021**		
Sample Number	**N-2881/21-22**		
Customer Name & Address	**M/s. The Zero Brand Zone Pvt Ltd,**		
	506, Srishti Plaza Commercial Coop Soc Ltd, Off Saki Vihar Road, Chandivalli, Mumbai - 400 072.		
SAMPLE DETAILS			
Sample **Description By Customer**	**Chocolate With Panchagavya & Herbs**		
Quantity Received	1 Kg	**Sampled By**	Customer
Date of Receipt	06.07.2021	**Sample Condition**	Good & Received in Packed Condition
Analysis Starting Date	07.07.2021	**Analysis Completion Date**	15.07.2021

Test Results:

The above sample tested as received, and results are as follows:

S. NO	PARAMETERS	METHOD	UNITS	RESULTS
1	Energy (By Calculation)	FAO Method	Kcal/100g	532
2	Carbohydrate (By Difference)	AOAC 20th Edn. 2016, 986.25	g/100 g	58.0
3	Total Fat	AOAC 20th Edn. 2016, 920.39	g/100g	31.4
4	Saturated Fatty Acid (SFA)	ISO 5509:2000	g/100g	16.6
	Mono Unsaturated Fatty Acid (MUFA)		g/100g	8.20
	Poly Unsaturated Fatty Acid (PUFA)		g/100g	6.60
	Trans Fat		g/100g	BDL(DL:0.1)
5	Cholesterol	CTL/SOP/FOOD/333-2018	mg/100g	BDL(DL:10.0)
6	Dietary Fiber	AOAC 20th Edn.2016, 985.29	g/100g	4.12
7	Total Sugars	AOAC 20th Edn.2016, 925.05	g/100 g	49.0
8	Calcium as Ca	AOAC 20th Edn.2016, 969.23	mg/100 g	155
9	Iron as Fe	AOAC 20th Edn.2016, 999.11	mg/100 g	2.14

BDL - Below Detection Limit; DL - Detection Limit.

For Chennai Testing Laboratory Pvt ltd

Authorised Signatory

Head - Food & Environmental Division
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Date of Receipt	06.07.2021	**Sample Condition**	Good & Received in Packed Condition
Analysis Starting Date	07.07.2021	**Analysis Completion Date**	15.07.2021

Test Results:

The above sample tested as received, and results are as follows:

S. NO	PARAMETERS	METHOD	UNITS	RESULTS	REQUIREMENTS *
1	Total Fat (on dry basis)	IS 6287:1985 (RA.1999)	%	32.4	Min.25.0
2	Milk Fat (on dry basis)		%	BDL(DL:1.0)	-
3	Cocoa Solids (on moisture free and fat free basis)	FSSAI Manual [Beverages, Sugars & Confectioneries]	%	18.1	Min.12.0
4	Milk Solids (on moisture free and fat free basis)		%	BDL(DL:1.0)	-
5	Acid Insoluble ash (on moisture, fat and sugar free basis)		%	0.12	Max.0.2
Microbiology:					
6	Aerobic Plate count	IS 5402: 2012 (RA.2018)	CFU/g	70	-
7	Coliform	IS 5401 (Part 1):2002 (RA.2012)	CFU/g	< 10	-
8	*Salmonella*	IS 5887 (Part 3):1999 (RA.2013)	Per 25g	Absent	Absent
9	*E.coli*	IS 5887 (Part 1):1976 (RA.2013)	Per 10g	Absent	Absent
10	Yeast and Mould	IS 5403:1999 (RA.2013)	CFU/g	< 10	Max.100
11	*Listeria Monocytogenes*	IS 14988 (Part 1):2001 (RA.2018)	Per 25g	Absent	Absent

BDL - Below Detection Limit; DL - Detection Limit; Max.-Maximum; Min.-Minimum;

* As per FSS Regulations 2011

REMARKS: The Sample meets the requirement of FSS Regulations 2011 with respect to the parameters tested.

*****END OF REPORT*****

For Chennai Testing Laboratory Pvt ltd

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(MICROBIOLOGY)

For Chennai Testing Laboratory Pvt ltd

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Reference Number : EQNX:001:LAB: F:21:08:02084 A-R

PARTICULARS OF SAMPLE ANALYSED

Client Name	:	The Zerobrandzone Pvt Ltd			
Address	:	506, Srishti Plaza, Commercial Coop Soc Ltd, Off Saki Vihar Road, Chandivali, Powai, Maharashtra			
Contact Person	:	S Kalyanaraman	Date of Receipt	:	23-Aug-21
Collection Point	:	-	Date of Start of Analysis	:	23-Aug-21
Sample Description	:	Food - Bharam Chocolate (Coco , Panchagavya, Brahmi) Mfg Date - 01-08-2021	Date of End of Analysis	:	28-Aug-21
Sample Drawn By	:	Client	Date of Report	:	2-Sep-21
Sample Quantity & Condition	:	Approx 300g of food in a client packaging is intact without any leaks or breaks.			

RESULTS OF ANALYSIS

Sr.No.	Parameters	Units	Methods	Results of Analysis (Per 100g)	RDA Value*	% RDA
1	Energy	Kcal	SOP-CHM-29-00	572.89	2000	29%
2	Carbohydrate	g	SOP-CHM-28-00	56.41	-	-
3	Protein	g	By FSSAI Manual - 4 (A7) : 2016	4.53	-	-
4	Fat	g	By FSSAI Manual - 4 (C3) : 2016	36.57	67	55%
5	Sugar	g	By FSSAI Manual - 5 (2.6) : 2016	24.86	-	-
6	Trans Fat	g	AOAC 996.06 20th Ed.	BLQ	2	-
7	Saturated fat	g	AOAC 996.06 20th Ed.	26.72	22	121%
8	Cholesterol	mg	AOAC 994.10 20th Ed.	BLQ	-	-

Percentage contribution to Recommended Dietary Allowance calculated on basis of 2000kcal energy
1 Serve = 100g

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Reference Number : EQNX:001:LAB: F:21:08:02084 B-R

PARTICULARS OF SAMPLE ANALYSED

Client Name	:	The Zerobrandzone Pvt Ltd			
Address	:	506, Srishti Plaza, Commercial Coop Soc Ltd, Off Saki Vihar Road, Chandivali, Powai, Maharashtra			
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Sample Drawn By	:	Client	Date of Report	:	2-Sep-21
Sample Quantity & Condition	:	Approx 300g of food in a client packaging is intact without any leaks or breaks.			

RESULTS OF ANALYSIS

Sr.No.	Parameters	Units	Methods	Results of Analysis (Per 100g)	RDA Value*	% RDA
1	Added Sugars	g	By FSSAI Manual - 5 (2.6) : 2016	22.42	50	45%
2	Sodium	mg	SOP-CHM-27-00	26.18	2000	1%

**Percentage contribution to Recommended Dietary Allowance calculated on basis of 2000kcal energy*
1 Serve = 100g

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