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GC-MS Analysis of Phyto-Chemical Constituents in Aqueous, Methanol and Ethyl Acetate Extracts of *Vitis Vinifera* Peel and Its Characterization Studies by Using AGNPs

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Abstract

Vitis Vinifera peel (Red) has major components such as Organic acids, Malate, higher moisture content and it is the source of medicine with high antioxidant activity for hundreds of years, *Vitis vinifera* belongs to family Vitaceae. But in our present work is designed to identify the possible phyto-chemicals compounds present in the Aqueous extracts, methanolic extract, and Ethyl acetate extracts of of *Vitis vinifera* peel by using GC-MS spectrum with their retention times indicating the peaks. This Vitis vinifera peel were shown nearly Thirty to Forty compounds from the Aqueous, Methanol and Ethyl acetate extracts the major chemical compounds were Xylose, Cyclo-hexanidiol, Octane, Butanoic acids and Octa-deca-diyndioic acids etc and from the Aqueous extracts we synthesized the AgNPs for preliminary characterization studies such as UV, DLS and SEM analysis.

Keywords

Vitis vinifera peel, AgNPs, Aqueous extract, Methanolic extract, Ethyl acetate extract, GC-MS spectrum.

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1. INTRODUCTION:

Vitis vinifera is a member of the Vitaceae family, native to the Mediterranean region, central Europe and southwest Asia and cultivated today in all temperature regions of the world [1]. *Vitis vinifera* is used in conditions like hemorrhages, anemia, leprosy, skin diseases, syphilis, asthma, jaundice, bronchitis, anti-inflammatory, anti-carcinogenic, platelet aggregation inhibiting, and metal chelating properties [2-4]. Red Grapes or *Vitis vinifera* is a Berry fruit and belongs to the group of versatile fruits which are used in a wide range as popular foods - from raisins to jelly to wine. Over 72 million tons of grapes are grown every year and 7.2 trillion gallons of wine is produced. Grapes are rich source of many vital nutrients and antioxidants. [5] *V.vinifera* seed contains lipid, protein, carbohydrates and 5-8% polyphenols. The pulp majorly contains water (65%-

85% of grape weight), sugars (15%-25%), it directs the sweetness. It is attributed to different mix of acids such as malic acid, tartaric acid, succinic acid, ascorbic acid, citric acid, phenols, and flavonoids. [6] These are considered to have biological properties, not only limited to antioxidant, anti-inflammatory, anti-cancer, antimicrobial, antiviral, cardio-protective, neuroprotective, hepatoprotective activities but also as a nutraceutical [7].

GC-MS is a method that couples two different analytical techniques, gas-liquid chromatography, and mass spectrometry to identify different phyto-chemical compounds present in a test sample. GC can separate volatile as well as semi-volatile compounds with higher resolution, but it cannot identify them. MS can be used to obtain structural information of the compound, but it cannot separate readily. It is used to analyze complex biochemical and organic mixtures and it is also highly compatible. [8] In addition, the size of the peaks determined by the spectrum is a directly proportional to the amount of material present in the test sample.

Several studies have indicated that extracts obtained from grape seed inhibit enzyme systems that are responsible for the production of free radicals, and that they have anti-mutagenic and anti-carcinogenic. It has a protective effect on oxidant-induced production and deposition of extracellular matrix components [9].

Hence the objective of the present study was aimed to identify the possible Phyto-chemical compounds using GC-MS Aqueous, Methanol and Ethyl acetate extracts of *Vitis vinifera* peel with the aid of GC-MS Technique and the AgNPs were synthesized by using the aqueous extracts of peel for UV, DLS and SEM analysis.

2. MATERIALS AND METHODS:

2.1. Preparation of *Vitis vinifera* peel aqueous extract.

The cleaned and air dried *Vitis vinifera* peels was taken and it was grounded by mortar and pestle until it turns in to thin fine powder then the powder was stored in refrigerator at 4ºC for further analysis. 10g of *Vitis vinifera* powder was taken and dissolved in 100ml of distilled water and heated at 80°C for 1h then the extract was filtered by using Whatman No. 1 filter paper and collected in plastic bottle and stored at 4±C for further characterization and experimentation [10-11].

2.2. Preparation of *Vitis vinifera* peel extract mediated silver (Ag) nanoparticles.

Silver nitrate (>99% pure) was purchased from Sigma- Aldrich, India. To prepare the AgNPs, a 90-mL aqueous solution of $1.0x10^{-3}$M silver nitrate was mixed with a 10-mL of 5% aqueous solution of *vitis vinifera* peel extract. The *vitis vinifera* Ag solution was yellow in color and the solution was stirred repeatedly for an hour, and it was observed that the color of the solution has been changed to brown which visually confirms the formation of Nanoparticles. These *vitis vinifera* silver Nanoparticles were characterized by using the techniques such as UV–Vis spectrophotometry, Dynamic light scattering (Particle size), zeta potential and Scanning electron microscopy (SEM) analysis [12].

2.3. *Vitis vinifera* peel sample extractions

Twenty grams of the powdered peels were extracted with 100mL of 40% methanol overnight in a stopped bottle and with occasional stirring at room temperature (28°C). The sample was first sieved using muslin cloth and then filtered using Whatman No.1 filter paper. This process was repeated three times to remove the contaminants in sample. The filtrate was concentrated under rotary vacuum evaporator for one hour at 50°C and then lyophilized to get a compounds extract. The dry extract was preserved under 4ºC until further use and the same procedure used for ethyl acetate compound extraction [13].

2.4. Gas chromatography-mass spectrometry (GC-MS) and identification of phytocompounds

GC-MS analysis was carried out on a GC-MS (Model: QP2010 PLUS Shimadzu, Japan) comprising a AOC-20i auto-sampler and chromatograph interfaced to a mass spectrometer (GC-MS). The instrument was equipped with a VF 5 ms fused silica capillary column of 30 m length, 0.25 mm diameter and 0.25µm film thickness. The temperatures employed were column oven temperature 80°C, Injection Temp 250°C at a pressure of 108.0 kPa, scan range 40-800 u and an injection volume of 1µL of the plant extract (split ratio 10:1). The total running time of GC-MS was 30 min. The relative percentage of the extract was expressed as percentage with peak area normalization. The fragmentation pattern spectra of the unknown components were compared with those of known components stored in the NISTV.3.2 library [14]. The compound bioactivity prediction was based on Dr. Dukes Phytochemical and Ethnobotanical Databases. The name, molecular weight, and structure of the components of the test materials were ascertained [15].

3. RESULTA AND DISCUSSION:

3.1. UV-visible spectrum of *Vitis vinifera* Peel aqueous extract mediated synthesized AgNPs

In this study, extract when interacting with the silver nitrate salt solution form a dark brown solution due

to the reduction of the silver ion to AgNPs followed by a colour change indicating the biotransformation of ionic silver to reduced silver and the subsequent formation of AgNPs in an aqueous medium. The colour change was monitored visually and the peak at 316nm in the UV-visible spectra indicated the presence of AgNPs which may be due to the excitation of surface plasmon resonance vibrations in AgNPs (Figure 1) [16].

3.2. Dynamic light scattering analysis of *Vitis vinifera* Peel aqueous extract mediated synthesized AgNPs

The hydrodynamic diameter (size) of the AgNPs was found to be 87.6nm (Figure 2a) and was measured as a function of scattering angle of the laser from the surface of the particle. Further, zeta potential of AgNPs was also measured and was recorded as 48.7mV (Figure 2b). The zeta potential clearly indicates stability of the prepared AgNPs [17].

3.3. Scanning electron microscopic analysis of *Vitis vinifera* Peel aqueous extract mediated synthesized AgNPs

Surface morphology of silver nanoparticles was studied from the SEM micrograph. It is evident that AgNPs were spherical, irregular in shape and some of them were poly dispersed. The measured average size of AgNPs was 30-50µm (Figure 3) [12, 18].

3.4. Identification of Phyto-compounds present in Aqueous, Methanolic and Ethyl acetate extractions from *Vitis vinifera* peel

3.4.1. GC-MS analysis of Aqueous extract of V*itis vinifera* peel

GC-MS chromatogram of the aqueous extract of *Vitis vinifera* peel showed four peaks (Figure. 4) in chromatogram indicating the presence of four phyto-chemical constituents. On comparison of the mass spectra of the constituents with the NIST08, WILEY8 and FAME libraries the four phyto-constituents were characterized and identified in (Figure 5)

The retention time present at **2.86** each showing the compound of amphetamine-3-methyl.

The retention time at **19.74** each showing the compounds of Xylose,1-P-Toluidino-1-Deoxy-Beta-D-Idopyranose,2-1,2-Dihydroxyethyl-9-Beta-D-RibofuranosylHypoxanthine,Methyl-Alpha-D-Ribofuranoside,He xanoicacid,Hexanoicacid,6-Bromo,9-Bromononanoicacid,D-Allose,Allo-Inositol,Ribonicacid.Gamma-Lactone, 1,2,5,6-Di-O-Isopropylidene-3-o-Methanesulfonyl,glucofurnose,Beta-D-Glucopyranose,1,6-Anhydro,5-Thio-D-Glucopyranose,1,6-Anhydro-Beta-D-Talopyranose,D-Galactose,6-Deoxy,Lactose,Beta-Glucopyranose,1,6-Anhydro,5-Cyano-Desoxinojirimycin,D-Chiro-Inositol,3-o-2-Amini-4-Carboxyminomethylamino-2,3,4,6-TE.

The retention time at **26.05** showing the compounds of 1, 3-Cyclohexanediol, 1, 3-Cyclohexanediol,Cis-Ethylamine,1-Methyl-2-5-Methyl-1H-Pyrazol-3-yl-, 1, 3-Cyclohexanediol,Trans-1H-Imidazole-4-Ethanamine,n, 5-Dimethyl-, 4H-1, 3, 4-Triazol-3-Amine, N-Dimethyl amino methylene-, Ethyl2-2-Chloroacetamido-3,3,3-Trifluor olactate,1H-Pyrazole,1-Methyl-4-Methylaminomethyl-,1H-Pyrazole,1-Methyl-4-Methylaminomethyl-,1-Beta -D-Ribofuranosyl-s-Triazol(2,3-A-S-Triazin-5,7-Dione,Ribavirin,Glucopyranuronamide,1-4-Amino-2-oxo-1(2H) -Pyrmidinyl-1-4-Dideoxy,1H-Imidazole,2-Ethyl-4,5-Dihydro-,Histamie,N-Triflouroacetyl-2-Amino-,Cyclohexan e-3-5-diol,Cis-,2-Hydroxymethylcyclopentanol,1H,3H-Furo(3,4Furan,Tetrahydro-,1H-Imidazole,2-Ethyl-4,5-Dihydro-4-Methyl.

The retention time at **26.58** showing the compounds 22, 23-Dibromostigmasterolacetate, 1-Hydroxy-1, 7-Dimethyl-4-Isopropyl-2, 7-Cyclodecadiene, 10-12-Pentacosadiynoicacid, Methyl, 10, 12-Pentacosadiyonate,5,8, 11,14-eicosatetraenoicacid, Methyl ester, All-Z-, Pregn-4-Ene-3,20-Dione,17,21-dihydroxy-Bis-o-Methyloxime.

3.4.2. GC-MS analysis of Ethyl acetate extract of *Vitis vinifera* peel

GC-MS chromatogram of the ethyl acetate extract of *Vitis vinifera* peel showed thirteen peaks (Figure 6) in chromatogram indicating the presence of thirteen phyto-chemical constituents. On comparison of the mass spectra of the constituents with the NIST08, WILEY8 and FAME libraries the thirteen phyto-constituents were characterized and identified in (Figure7).

The retention time present at **2.85** each showing the compounds of S (-)- Cathionone, N-Acetyl, Acetamide, 2, 2, 2-Triflouro-, Acetamide, 222, Trifluro-, 2, 3-Pyridinecarboxylic acid.

The retention time present at **19.27** each showing the compounds of 1,3-Cyclohexanedioldiacetatecis-, 1, 4-CyclohexanediolDiacetateTrans-,1,3-Cyclohexanediol diacetate Trans-, L-Alanine N-Acetyl-3-Chloro-Methyl ester, 3-Cyclohexen-1-ol-Acetate, 4(H)-Pyridine N Acetyl-

The retention time present at **19.75** each showing the compounds of 2-Butyl-1-2-Oxaborolane, Ether Hexyl Pentyl, Dichloroacetic acid 4-Methyl Pentyl ester, Sulfurous acid Iso hexyl 2-Pentyl ester,6,8-Doixatetradecane, 5iIsoxazolecarboxylix acid 4,5-Dihydro-5-Methyl ester(R), Di(Tetrahydrofurfuryl) Adipate, Pyrrolidine 1,1-Methylenebis,2-Ethyl-1-Butanol Triflouroacetate, sulphurous acid Hexyl Pentyl ester, Succinic acid Hexadecyl

Tetrahydrofurfuryl ester, 1-Butanol 4-Hexyloxy,Succinic acid Octadecyl Tetrahydrofurfuryl ester,2-Ethylbutyl Isobutyrate,Succinic acid Heptadecyl Tetrahydrofurfuryl ester, 1-Octacosanol 2,4,6,8 Tetramethyl-All-R,Sulfurous acid Isohexyl Pentyl ester, Sulfurous acid Nonyl 2-Propyl ester,Butanoic acid 2-Ethyl Butyl Ester, Dichloroacetic acid 6-Ethyl-3-Octyl ester.

The retention time present at **20.51** each showing the compounds of 2,5-Diamino-2-Methylpentanoic acid,4-cycloocten-q-Amine N Methyl,2-T Butylperoxy-2-Ethylbutan-1-ol Butyrate ester, Octane 1,1-Oxybis, Methoxyacetic acid octyl ester,Acetic acid Trichloro-Octyl ester,10-Undecenoic acid octyl ester,butanoic acid octylester,2-Bromoproponoicacidoctylester,5-Octadecenal,4-Amino-6-Methyl-Piperidin-2-one,Chloromethyl octylether,2,4(1H,3H)-Pyridinedione1-Beta-D-Ribofuranosyl,Sulfurous acid Decyl 2-Propyl ester, Hexyl Octyl ether,2-Propenoic acid Pentadecyl ester,1,2,3-cyclohexanetriol,2-Propenoic acid Tridecyl ester.

The retention time present at **21.23** each showing the compounds of Octadecane 2-Methyl,Hexadecane, Nonadecane 2-Methyl,Eicosane 2-Methyl,Tricosane 2-Methyl,Tricosane2-Methyl,Tricosane2-Methyl, Docosane2,21-Dimethyl,Heptadecane2,6,10,14-Tetramethyl,Hexadecane,1-Iodo-2-Methylundecane,Penta decane,Nonadecane2-Methyl,Undecane2,10-Dimethyl,Heptadecane2-Methyl,Hexadecane,Octadecane,1-Iodo,Tetradecane,Heptadecane,4-Methyl,Pentadecane 2-Methyl,Decane 2,6,8-Trimethyl.

The retention time present at **22.29** each showing the compounds of Tricyclo[4.4.0.0(3,8)Dec-9-En-4-Ol,2,4Decadien1-Ol(E,Z),9,10Dimethylenetricyclo[4.2.1.1(2,5)Decane, 1,2,4-Methenocyclobut[CD]Inden-3-Dione3A,4,7,7A-Tetrahydro-5-Methyl,4,7-Methanoisobenzofuran-1,3-Dione,3A,4,7,7A-Tetrahydro-5-Methyl,1-2-Methylenecyclohexyl-3-Phenylpropan-1-OL,1,3,5Dodecatriene,6-[(1E)-1,3-Butadienyl-1,4-Cycloheptadiene,4,7-Methanoisobenzofuran-1,3-Dione3A,4,7,7A-Tetrahydromethyl,3-[(1Z)-1,3-Butadienyl]-1-4-Vinylcyclopentene,6-[(1Z-1,3-Butadienyl]-1,4-Cycloheptadiene,Cyclobutane,1-(1,3-butadienyl-2-Vinyl,1,3,7,11-Cyclotetradecatetraene,2,7-Methanopthalene,1,2,4A,7,8,8A-Hexahydro,Cyclobutane1,2-Bis(1,3Butadienyl),1,2-Bis(3-Cyclohexenyl)ethylene,1,4,4A,5,8,8A-Hexahydronaphthalene,1,2,4a,4B,7,8,8A,8B-Octahydrobiphenylene,Tricyclo[4.3.0.0(3,7)]Non-8-En-4-Ol.

The retention time present at **23.08** each showing the compounds of Methyl 5-2-Phenyl propionyl Hexanoate, 2-Methyl-1-Phenyl-2-Propen-1-Ol, Tricyclo [4.2.1.1(2, 5)DecA-3, 7-Dien-9-One 10-Hydroxy-10-Methyl-Stere.

The retention time present at **26.54** each showing the compound of 1H-4-Azacycloprop [CD]Indene octahydro-4-Methyl-.

The retention time present at **30.58** each showing the compounds of Tricyclo[4.4.0.0(2,7)Dec-3-Ene-3-Methanol,1-Methyl-8-1-Methyethyl,2,6-Dimethyl-4-Nitro-3-Phenyl-Cyclohexanone,2,5-Octadecadiynoicacid,methyl,Ester,10,12-Docasadiyndiocacid,Falcarinol,10-Heneicosene11-Phenyl,4,7-OctadecadiynoicacidMethylester,Methyl5,7-Hexadecadiyonate,Estra-5-(10)-En-3-One-17-OLacetate,(4,4-Dimethyl-2,4,5,6-Tetrahydro-1H-Inden-2-YL)Aceticacid,Methyl5,7-Hexadecadiynoate,Estra-5(10)-En-3-One-17-Olacetate,(4,4-Dimethyl-2,4,5,6-Tetrahydro-1H-Inden-2-YL)Aceticacid,Methyl-8,10-Octadecadiynoate,Methyl-7,9-Octadecadiynoate,1-3,3-Dimethyl-1-YL-2,2-Dimethylcyclopropene-3-Carboxylic acid [19].

3.4.3. GC-MS analysis of Methanol extract of *Vitis vinifera* peel

GC-MS chromatogram of the methanol extract of *Vitis vinifera* peel showed sixteen peaks (Figure 8) in chromatogram indicating the presence of sixteen phyto-chemical constituents. On comparison of the mass spectra of the constituents with the NIST08, WILEY8 and FAME libraries the sixteen phyto-constituents were characterized and identified in (Figure 9)

The retention time present at **9.58** each showing the compounds of 4-Methyl-1-3-Oxazine-2,6[3H]-Dione,Dec-9-En-6-Oxo-1-Ylamide,1,2,5-Oxadiazole-3-Carbohydroxymicacid,4-Amino,4(1H)Pyrimidinone,6-Amino-2-Methyl-5-nitroso-,Propanenitrile3-Amino-2-Methyl-5-Nitroso-,Prpanenitrile,3-Amino-2,3-Dihydroxymino,Glutamine,N-Methyl-Oxime,3(2)H-Isoxazolone,4,5-Dimethyl,2,4(1H,3H)-Pyrimidinededione,1-[3,5-Dihydroxy-6-Hydroxymethyl],1,2,3-Triazole-4-Methanol,1-4-Aminofurazan-3-YL),3-Methyl-3-5-(Cyanoethyl)Tetrahydro-4-Thiopyranone,Cycloheptano[D]Imidazolidine,1,3-Dihydroxy-2-Methyl-,1H-Imidazole,2,4-Dimethyl-,Ronidazole,Propanal,2-Methyl-Oxime,L-Guanindinosuccinimide,5-Amino-3,4-Dimethyl-Isoxazole,Spiro[Tetrahydrofuran-3,5'-Hydantoin,1,3-

Oxazin-2-one,Tetrahydro-3-Methyl-5-6-TrimethyleneCis-,1H-1,2,3-Triazole-5-Methanol,1-4-Amino-1,2,5-Oxadiazole-3-YL)-

The retention time present at **12.27** each consisting compounds of 4-Chloro-1-Butanol,4-Chloro-1-ButanolOxirane,Propyl-,Propylaldoxime,2-Methyl-Anti,3-Ethyl-3-Methyldiaziidine,4-Hydroxybutylacrylate,4-Hydroxybutylacrylate,1,2,5-Triazole-2-oxide,1-sec-Butyl-3-Nitro-4-Amino-,1-Dimethylamino-2-Nitroethylene,L-Gala-L-Ido-Octose,5-Amino-3,4-Dimethyl-Isoxazole,Pentanoicacid,3-Hydroxy-4-Methyl-Methylester,Cycloheptanol,3,8,9-Trioxabicyclo[4.2.1]nonane,aceticacid,Pentylester,Cyclohexanol2-Methyl-Trans-,Isothiourea,2-2-Octylsulfonyl ethyl-4-amino-1-Hexanol.

The retention time present at **14.47** each consisting the compounds of Furazanamine,4-Azido-,3-Ethylamino-5-Hexene-2-OL.

The retention time present at **17.49** each consisting the compounds of Cyclopropaneteteradecanoicacid,2-octyl-methyl ester, 1,3,2,5-Diformal-L-Rhaminitol acetate,Dodecanoicacid,2,3-bis(Acetyloxy)Propylester,Lyxitol,1-0-nonyl,2-Butanyl,3-1,3-Dimethylbutoxy-3-Pentanol-3-Methyl,3-Pentanol-3-Methyl-,Alpha-D-Glucopyranoside,Methyl3,6-Anhydro,Pyrimidine-2,4,6(1H,3H,5H-Trione,1-Octadecyl-,3-Octanol,3,7-Dimethyl-,3-Octanol,3,6-Dimethyl-,3-octanol,3,7-Dimethyl-,2-Methyl-3-Decanol,Eicosanoicacid,1,2,3,4-Pentadecanetetrol,[2R-(2R,3s,4s)],1-Octanamine,N-Methyl-N-Nitroso-,4-Heptanol,2,6-dimethyl-4-Propyl,1,2,3,4-Hexadecanetetrol,2R-2R,3S,4S)],D-Mannohexadecane-1,2-3,4,5-Pentol,Undecanol-4.

The retention time present at **18.42** each consisting the compounds of 2-Pentenoicacid,4-oxo-Methylester(z),Pentanoicacid,3,5-dioxo-Methylester,Hexanoicacid,3-Oxo-Methylester,2-Pentanoicacid,4-oxo-Methylester,(E),2(5H)-Furanone,5,5-Dimethyl-,1,3-Dioxolane,2,2-Dimethyl-4-Hydroxymethyl-5-2-Hydroxypropyl,Xylopyranoside,Methyl4-Thio-Triacetate,Alpha-D-,2(5H)-Furanone,5,5-Dimethyl,1,3-Dixolane,2,2-Dimethyl-4-Hydroxymethyl-5-2-Hydroxypropyl,Xylopyranosidemethyl-4-Thio-Triacetate,Alpha-D,2(5H)Furanone,5,5-Dimethyl-,Heptanedioic acid 4-Methyl-Dimethyl ester, Acetic acid,2-Methyl-6-oxo-Heptyl ester,Hexanoicacid-5-oxo-methyl ester, Heptanedioc acid 3-Methyl-Dimethylester,Methyl-4-oxo-2-Pentenoate,5-Isoxazolidinecarboxylicacid,5-Methyl-2-5-O-Methyl-2-3-O-1-Methy,2-Propanol,1,3-Dimethylbutoxy,3-Ethyl-4-Methyl-3 Heptanol,2-Furanhexanoicacid,Tetrahydro-Beta,Delta,Dihydroxy-5-Metho,5-Isoxazolidine,carboylicacid,5,Methyl-2-5-O-2-3-O-1-Methylethyl,1,4-DI-O-Acetyl-2,5-DI-O-Methyl-3,6-Dideoxy-D-Glucitol.

The retention time present at **18.27** each consisting the compounds of 5-Hexenoicacid Methylester,3-Dodecen-1-OL,2-Heptadecenal,4-OctadecenoicacidMethylester,Undecanenitrile,4-chloro-3-N-Hexyltetrahydropyran,Hexanenitrile,5-Methyl-,Decanitrile,Methyl-3-Cyclopropylpropanoate,Nonanenitrile,E-2-Octadecen-1-OL,Undecanenitrile,Z-3-Octadecen-1-OL-Acetate,5-Hexanoic,acid,methylester,1,19-Eicosadiene,z-2-Octadecen-1-OL,Acetate,Decanenitrile,Cyclohexanol-2-Methyl-AcetateCis,Oxalicacid Cyclohexyl methyl propyl ester,2-Dodecen-1-OL.

The retention time present at **20.04** each consisting the compound of 2-Propenoicacid,3-2-2-Dimethyl-1-3-Dioxolan-4-YL-Methyl ester(s)-

The retention time present at **22.56** each consisting the compounds of Butane,1,1'-Ethylidennebis(Oxy)Bis-2-Methyl,1,6-Heptadien-4-OL,9-Octadecen-12-ynoic acid Methyl ester,5-Dimethylamino-2-Methyl-4-Oxazolecarbonitrile,Disulphide Isopentyl methyl,8,11,14-Eicosatrienoic acid Methyl ester(Z,Z,Z)-, Butanoyl chloride, Methyl Pentyl disulfide,5-Methoxy-cyclooctene,Bicyclo[2.2.2]Oct-5-En-2 Y-Ldimethylamine,1,4-dioxane 2,6-Dimethyl,2,6-Dimethylmorpholine-4-Carbothioic acid,2-1-2-Pyrimidyl]Ethynide.

The retention time present at **24.63** each consisting the compounds of Cyclohexane,2,4-Disopropyl-1,1-Dimethyl, Cyclohexane,1,5-Disopropyl-2,3-Dimethyl-, Cyclohexane,1,1'-1 Methyl propylidene Bis, Oxalic acid Heptadecylic 1-Menthyl ester, Oxalic acid 1-Menthyl pentadactyl ester.

The retention time present at **26.41** each consisting the compounds of 1-Hexanol,2-Hydroxymethyl, AminopropionamideN-Methyl-N-4-1-Pyrrolidinyl-2-Butynyl-N-T-But2-Octenal(E),3-Methyl-4-Phenylthio-2-Prop-2-enyl-2,5-Dihydrothiophene 1,1-Dioxi, Fromamide N-Methyl-N-4-1-Pyrrolidinyl-2-Butynyl.

[20-21], both worked on GC-MS of grape seeds and their results demonstrated 33 and 16 constituents respectively against the outcome of this study where 7 peaks were observed. Also, [22] in aqueous skin extract reported 16 compounds. Out of the compounds posited by other researchers only palmitic and stearic acid were in affirmation with the result. The disparity in the number and nature of compounds found in this research could be due to

differences in plant parts, solvents of extraction and geographical location.

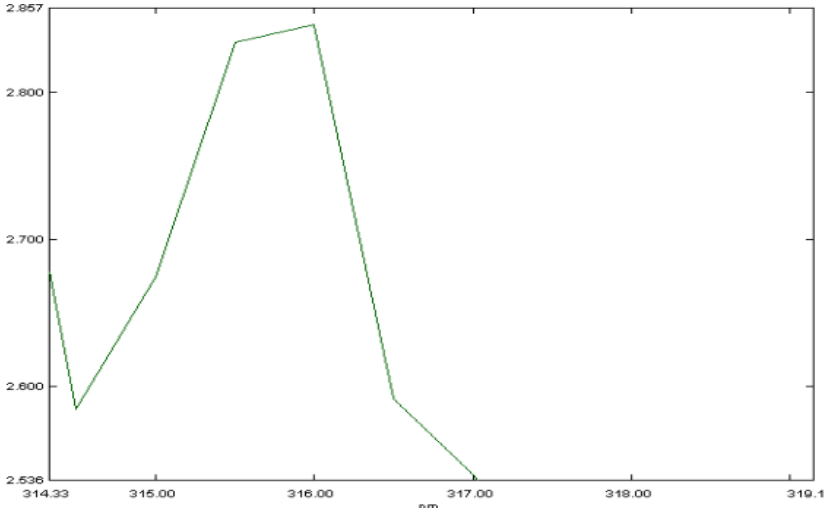
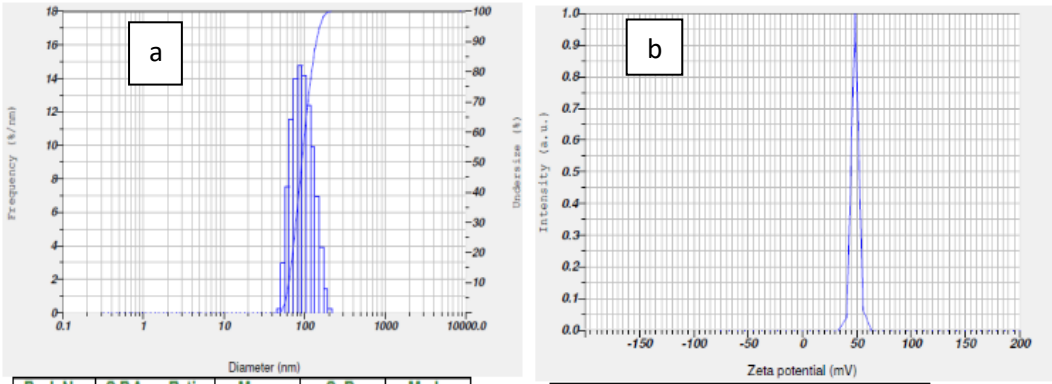


Figure.1 Showing UV-Visible spectrum analysis of *Vitis vinifera* peel extracted mediated synthesized Silver nanoparticles.



Peak No.	S.P.Area Ratio	Mean	S. D.	Mode
1	1.00	97.6 nm	29.4 nm	87.6 nm
2	---	--- nm	--- nm	--- nm
3	---	--- nm	--- nm	--- nm
Total	1.00	97.6 nm	29.4 nm	87.6 nm

Peak No.	Zeta Potential	Electrophoretic Mobility
1	48.7 mV	0.000377 cm2/Vs
2	--- mV	--- cm2/Vs
3	--- mV	--- cm2/Vs

Zeta Potential (Mean) : 48.7 mV
Electrophoretic Mobility mean : 0.000377 cm²/Vs

Figure.2 Showing Dynamic light scattering analysis of *Vitis vinifera* peel extracted mediated synthesized Silver nanoparticles a) Particle size b) Zeta potential.

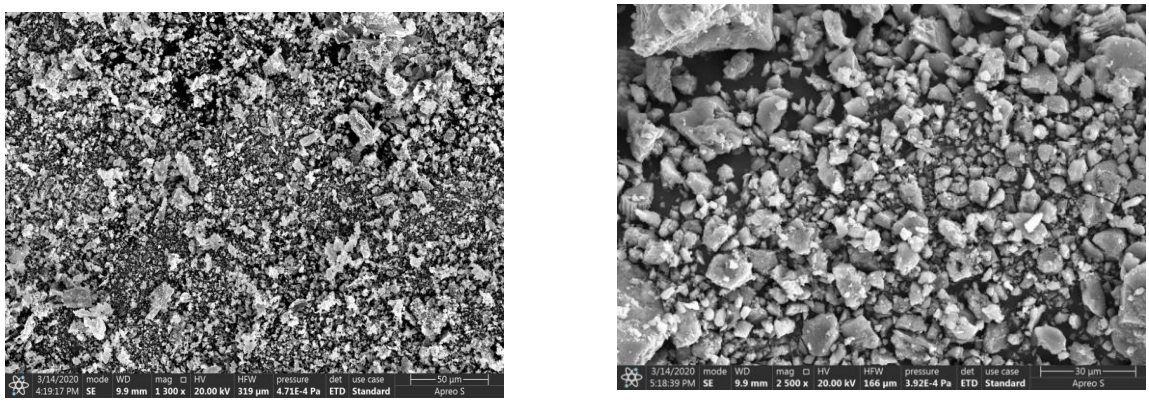


Figure.3 Showing Scanning electron microscopy analysis of *Vitis vinifera* peel extracted mediated synthesized Silver nanoparticles.

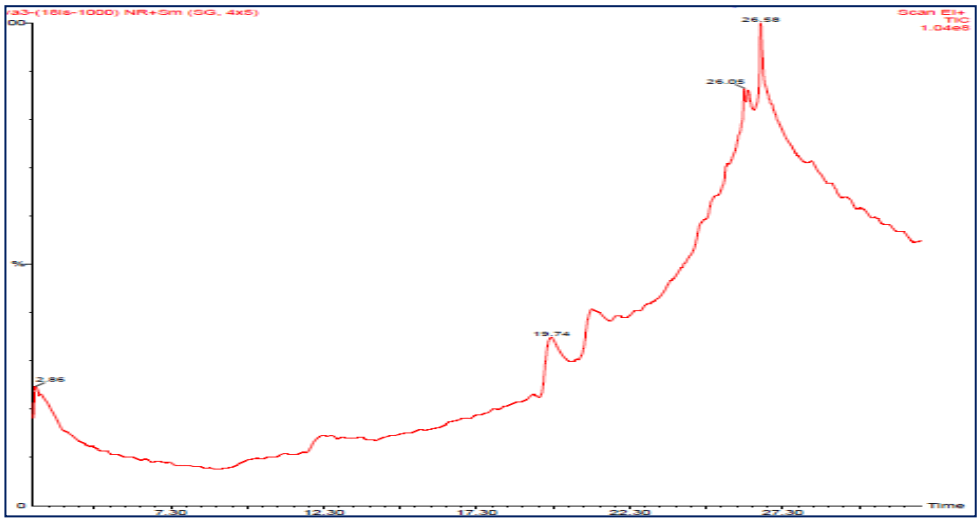
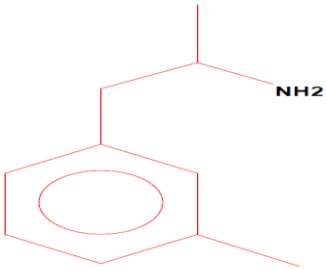


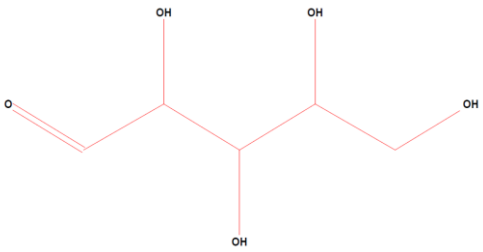
Figure.4 showing GC-MS Chromatogram of Aqueous extract of the *Vitis vinifera* peel

2.86



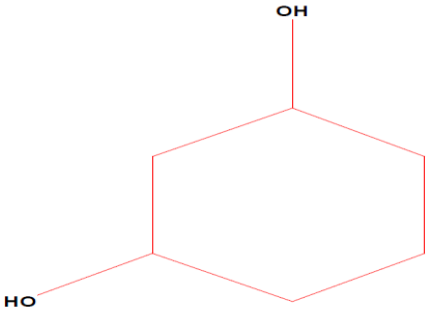
Hit	Compound Name	M.W.	Formula
1	AMPHETAMINE-3-METHYL	149	C10H15N

19.74



Hit	Compound Name	M.W.	Formula
1	XYLOSE	150	C5H10O5
2	1-(P-TOLUIDINO)-1-DEOXY-.BETA.-D-IDOPYRANOSE	269	C13H19O5N
3	2-[1,2-DIHYDROXYETHYL]-9-[.BETA.-D-RIBOFURANOSYL]HYPOXANTHINE	328	C12H16O7N4
4	METHYL-.ALPHA.-D-RIBOFURANOSIDE	164	C6H12O5
5	HEXANOIC ACID	116	C6H12O2
6	HEXANOIC ACID, 6-BROMO-	194	C6H11O2Br
7	9-BROMONONANOIC ACID	236	C9H17O2Br
8	D-ALLOSE	180	C6H12O6
9	ALLO-INOSITOL	180	C6H12O6
10	D-(+)-RIBONIC ACID .GAMMA.-LACTONE	148	C5H8O5
11	1,2,5,6-DI-O-ISOPROPYLIDENE-3-O-METHANESULFONYL GLUCOFURANOSE	338	C13H22O8S
12	HEXANOIC ACID, 6-BROMO-	194	C6H11O2Br
13	.BETA.-D-GLUCOPYRANOSE, 1,6-ANHYDRO-	162	C6H10O5
14	5-THIO-D-GLUCOPYRANOSE	196	C6H12O5S
15	1,6-ANHYDRO- BETA.-D-TALOPYRANOSE	162	C6H10O5
16	D-GALACTOSE, 6-DEOXY-	164	C6H12O5
17	LACTOSE	342	C12H22O11
18	.BETA.-D-GLUCOPYRANOSE, 1,6-ANHYDRO-	162	C6H10O5
19	5-CYANO-DESOXINOJIRIMYCIN	188	C7H12O4N2
20	D-CHIRO-INOSITOL, 3-O-(2-AMINO-4-((CARBOXYIMINOMETHYL)AMINO)-2,3,4,6-TE	379	C14H25O9N3

26.05



Hit	Compound Name	M.W.	Formula
1	1,3-CYCLOHEXANEDIOL	116	C6H12O2

Hit	Compound Name	M.W.	Formula
1	22,23-DIBROMOSTIGMASTEROL ACETATE	612	C31H50O2Br2
2	1-HYDROXY-1,7-DIMETHYL-4-ISOPROPYL-2,7-CYCLODECADIENE	222	C15H26O
3	10-12-PENTACOSADIYNOIC ACID	374	C25H42O2
4	METHYL 10,12-PENTACOSADIYNOATE	388	C26H44O2
5	5,8,11,14-EICOSATETRAENOIC ACID, METHYL ESTER, (ALL-Z)-	318	C21H34O2
6	PREGN-4-ENE-3,20-DIONE, 17,21-DIHYDROXY-, BIS(O-METHYLOXIME)	404	C23H36O4N2

16	1H,3H-FURO[3,4-C]FURAN, TETRAHYDRO-	114	C6H10O2
17	1H-IMIDAZOLE, 2-ETHYL-4,5-DIHYDRO-4-METHYL-	112	C6H12N2

26.58

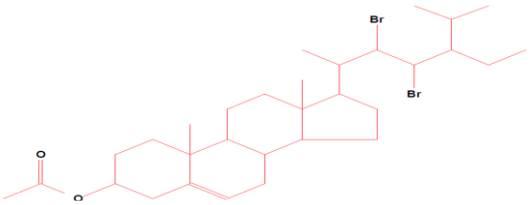


Figure.5 showing Phyto-chemicals identified in the aqueous extract of the *Vitis vinifera* peel by GC-MS

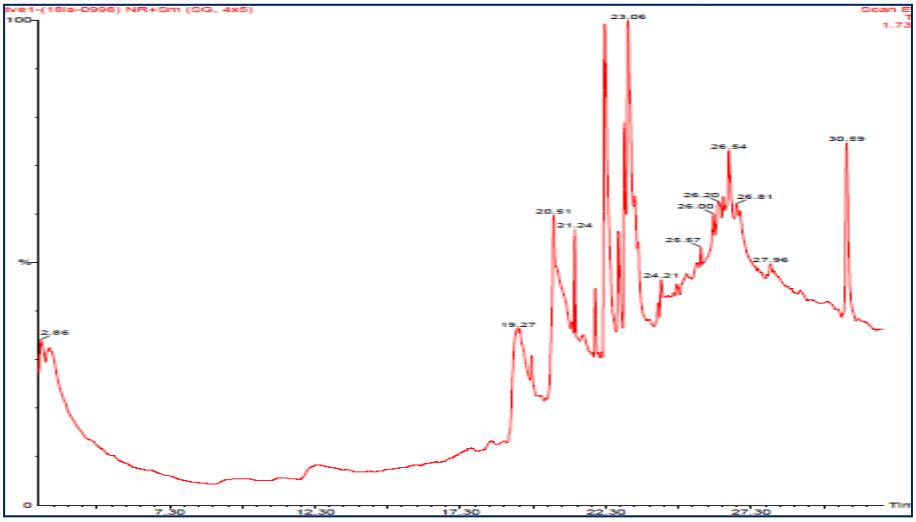
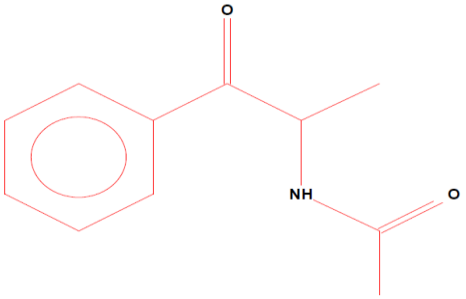


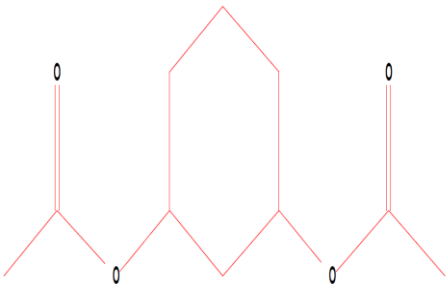
Figure.6 Showing GC-MS Chromatogram of Ethyl acetate extract of the *Vitis vinifera* peel

2.85



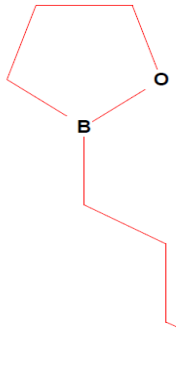
Hit	Compound Name	M.W.	Formula
1	S(-)-CATHINONE, N-ACETYL-	191	C11H13O2N
2	ACETAMIDE, 2,2,2-TRIFLUORO-	113	C2H2ONF3
3	ACETAMIDE, 2,2,2-TRIFLUORO-	113	C2H2ONF3
4	2,3-PYRIDINEDICARBOXYLIC ACID	167	C7H5O4N

19.27



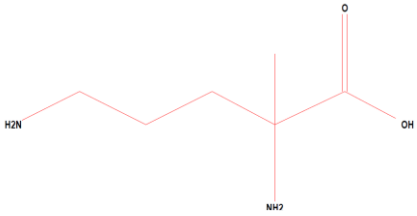
Compound Name	M.W.	Formula
1,3-CYCLOHEXANEDIOL, DIACETATE, CIS-	200	C10H16O4
1,4-CYCLOHEXANEDIOL, DIACETATE, TRANS-	200	C10H16O4
1,3-CYCLOHEXANEDIOL, DIACETATE, TRANS-	200	C10H16O4
L-ALANINE, N-ACETYL-3-CHLORO-, METHYL ESTER	179	C6H10O3NCl
3-CYCLOHEXEN-1-OL, ACETATE	140	C8H12O2
4(H)-PYRIDINE, N-ACETYL-	123	C7H9ON

19.75



Hit	Compound Name	M.W.	Formula
1	2-BUTYL-1,2-OXABOROLANE	126	C7H15OB
2	ETHER, HEXYL PENTYL	172	C11H24O
3	DICHLOROACETIC ACID, 4-METHYLPENTYL ESTER	212	C8H14O2Cl2
4	SULFUROUS ACID, ISOHEXYL 2-PENTYL ESTER	236	C11H24O3S
5	6,8-DOIXATETRADECANE	202	C12H26O2
6	5-ISOXAZOLECARBOXYLIC ACID, 4,5-DIHYDRO-5-METHYL-, METHYL ESTER, (R)-	143	C6H9O3N
7	DI(TETRAHYDROFURFURYL)ADIPATE	314	C16H26O6
8	PYRROLIDINE, 1,1'-METHYLENEBIS-	154	C9H18N2
9	2-ETHYL-1-BUTANOL, TRIFLUOROACETATE	198	C8H13O2F3
10	SULFUROUS ACID, HEXYL PENTYL ESTER	236	C11H24O3S
11	SUCCINIC ACID, HEXADECYL TETRAHYDROFURFURYL ESTER	426	C25H46O5
12	1-BUTANOL, 4-(HEXYLOXY)-	174	C10H22O2
13	SUCCINIC ACID, OCTADECYL TETRAHYDROFURFURYL ESTER	454	C27H50O5
14	2-ETHYLBUTYL ISOBUTYRATE	172	C10H20O2
15	SUCCINIC ACID, HEPTADECYL TETRAHYDROFURFURYL ESTER	440	C26H48O5
16	1-OCTACOSANOL, 2,4,6,8-TETRAMETHYL-, (ALL-R)-	466	C32H66O
17	SULFUROUS ACID, ISOHEXYL PENTYL ESTER	236	C11H24O3S
18	SULFUROUS ACID, NONYL 2-PROPYL ESTER	250	C12H26O3S
19	BUTANOIC ACID, 2-ETHYL-, BUTYL ESTER	172	C10H20O2
20	DICHLOROACETIC ACID, 6-ETHYL-3-OCTYL ESTER	268	C12H22O2Cl2

20.511

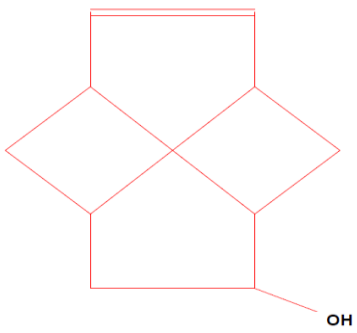


Hit	Compound Name	M.W.	Formula
1	2,5-DIAMINO-2-METHYLPENTANOIC ACID	146	C6H14O2N2
2	4-CYCLOOCTEN-1-AMINE, N-METHYL-	139	C9H17N
3	2-T-BUTYLPEROXY-2-ETHYLBUTAN-1-OL, BUTYRATE ESTER	260	C14H28O4
4	OCTANE, 1,1'-OXYBIS-	242	C16H34O
5	OCTANE, 1,1'-OXYBIS-	242	C16H34O
6	METHOXYACETIC ACID, OCTYL ESTER	202	C11H22O3
7	ACETIC ACID, TRICHLORO-, OCTYL ESTER	274	C10H17O2Cl3
8	10-UNDECENOIC ACID, OCTYL ESTER	296	C19H36O2
9	BUTANOIC ACID, OCTYL ESTER	200	C12H24O2
10	2- BROMOPROPIONIC ACID, OCTYL ESTER	264	C11H21O2Br
11	5-OCTADECENAL	266	C18H34O
12	4-AMINO-6-METHYL-PIPERIDIN-2-ONE	128	C6H12ON2
13	CHLOROMETHYL OCTYL ETHER	178	C9H19OCl
14	2,4(1H,3H)-PYRIDINEDIONE, 1-.BETA.-D-RIBOFURANOSYL-	243	C10H13O6N
15	SULFUROUS ACID, DECYL 2-PROPYL ESTER	264	C13H28O3S
16	HEXYL OCTYL ETHER	214	C14H30O
17	2-PROPENOIC ACID, PENTADECYL ESTER	282	C18H34O2
18	1,2,3-CYCLOHEXANETRIOL	132	C6H12O3
19	2-PROPENOIC ACID, TRIDECYL ESTER	254	C16H30O2

21.23

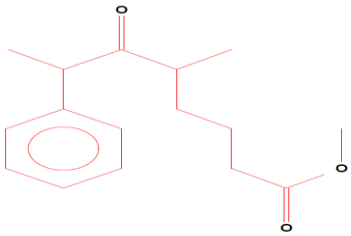
Hit	Compound Name	M.W.	Formula
1	OCTADECANE, 2-METHYL-	268	C19H40
2	HEXADECANE	226	C16H34
3	NONADECANE, 2-METHYL-	282	C20H42
4	EICOSANE, 2-METHYL-	296	C21H44
5	TRICOSANE, 2-METHYL-	338	C24H50
6	TRICOSANE, 2-METHYL-	338	C24H50
7	DOCOSANE, 2,21-DIMETHYL-	338	C24H50
8	HEPTADECANE, 2,6,10,14-TETRAMETHYL-	296	C21H44
9	HEXADECANE	226	C16H34
10	1-IODO-2-METHYLUNDECANE	296	C12H25I
11	PENTADECANE	212	C15H32
12	NONADECANE, 2-METHYL-	282	C20H42
13	UNDECANE, 2,10-DIMETHYL-	184	C13H28
14	HEPTADECANE, 2-METHYL-	254	C18H38
15	HEXADECANE	226	C16H34
16	OCTADECANE, 1-IODO-	380	C18H37I
17	TETRADECANE	198	C14H30
18	HEPTADECANE, 4-METHYL-	254	C18H38
19	PENTADECANE, 2-METHYL-	226	C16H34
20	DECANE, 2,6,8-TRIMETHYL-	184	C13H28

22.29



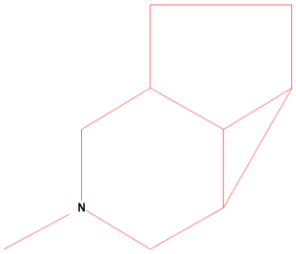
Hit	Compound Name	M.W.	Formula
1	TRICYCLO[4.4.0.0(3,8)]DEC-9-EN-4-OL	150	C10H14O
2	2,4-DECADIEN-1-OL, (E,Z)-	154	C10H18O
3	9,10-DIMETHYLENETRICYCLO[4.2.1.1(2,5)]DECANE	160	C12H16
4	1,2,4-METHENOCYCLOBUT[CD]INDEN-3(1H)-ONE, OCTAHYDRO-	160	C11H12O
5	BENZENE, [(CYCLOHEX-1-EN-3-YL)METHYL]-	172	C13H16
6	4,7-METHANOISOBENZOFURAN-1,3-DIONE, 3A,4,7,7A-TETRAHYDRO-5-METHYL-	178	C10H10O3
7	1-(2-METHYLENECYCLOHEXYL)-3-PHENYLPROPAN-1-OL	230	C16H22O
8	1,3,5-DODECATRIENE	164	C12H20
9	6-[(1E)-1,3-BUTADIENYL]-1,4-CYCLOHEPTADIENE	146	C11H14
10	4,7-METHANOISOBENZOFURAN-1,3-DIONE, 3A,4,7,7A-TETRAHYDROMETHYL-	178	C10H10O3
11	3-[(1Z)-1,3-BUTADIENYL]-4-VINYLCYCLOPENTENE	146	C11H14
12	6-[(1Z)-1,3-BUTADIENYL]-1,4-CYCLOHEPTADIENE	146	C11H14
13	CYCLOBUTANE, 1-(1,3-BUTADIENYL)-2-VINYL-	134	C10H14
14	1,3,7,11-CYCLOTETRADECATETRAENE	188	C14H20
15	CYCLOBUTANE, 1,2-BIS(1,3-BUTADIENYL)-	160	C12H16
16	1,2-BIS(3-CYCLOHEXENYL)ETHYLENE	188	C14H20
17	2,7-METHANONAPHTHALENE, 1,2,4A,7,8,8A-HEXAHYDRO-	146	C11H14
18	1,4,4A,5,8,8A-HEXAHYDRO-NAPHTHALENE	134	C10H14
19	1,2,4A,4B,7,8,8A,8B-OCTAHYDROBIPHENYLENE	160	C12H16
20	TRICYCLO[4.3.0.0(3,7)]NON-8-EN-4-OL	136	C9H12O

23.08



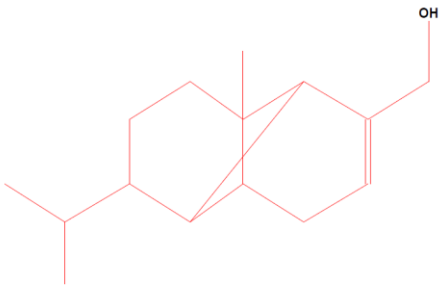
Hit	Compound Name	M.W.	Formula
1	METHYL 5-(2-PHENYLPROPIONYL)HEXANOATE	262	C16H22O3
2	2-METHYL-1-PHENYL-2-PROPEN-1-OL	148	C10H12O
3	TRICYCLO[4.2.1.1(2,5)]DECA-3,7-DIEN-9-ONE, 10-HYDROXY-10-METHYL-, STERE	176	C11H12O2

26.54



Hit	Compound Name	M.W.	Formula
1	1H-4-AZACYCLOPROP[CD]INDENE, OCTAHYDRO-4-METHYL-	137	C9H15N

30.58



Hit	Compound Name	M.W.	Formula
1	TRICYCLO[4.4.0.0(2,7)]DEC-3-ENE-3-METHANOL, 1-METHYL-8-(1-METHYLETHYL)-	220	C15H24O
2	2,6-DIMETHYL-4-NITRO-3-PHENYL-CYCLOHEXANONE	247	C14H17O3N
3	2,5-OCTADECADIYNOIC ACID, METHYL ESTER	290	C19H30O2
4	10,12-DOCASADIYNDIOIC ACID	362	C22H34O4
5	FALCARINOL	244	C17H24O
6	10-HENEICOSENE, 11-PHENYL-	370	C27H46
7	4,7-OCTADECADIYNOIC ACID, METHYL ESTER	290	C19H30O2
8	METHYL 5,7-HEXADECADIYNOATE	262	C17H26O2
9	ESTRA-5(10)-EN-3-ONE-17-OL, ACETATE	316	C20H28O3
10	(4,4-DIMETHYL-2,4,5,6-TETRAHYDRO-1H-INDEN-2-YL)ACETIC ACID	206	C13H18O2
11	METHYL 8,10-OCTADECADIYNOATE	290	C19H30O2
12	METHYL 7,9-OCTADECADIYNOATE	290	C19H30O2
13	METHYL OCTADEC-6,9-DIEN-12-YNOATE	290	C19H30O2
14	1-(3,3-DIMETHYL-1-YL)-2,2-DIMETHYLCYCLOPROPENE-3-CARBOXYLIC ACID	192	C12H16O2

Figure.7 Showing Phyto-chemicals identified in the Ethyl acetate extract of the *Vitis vinifera* peel by GC-MS

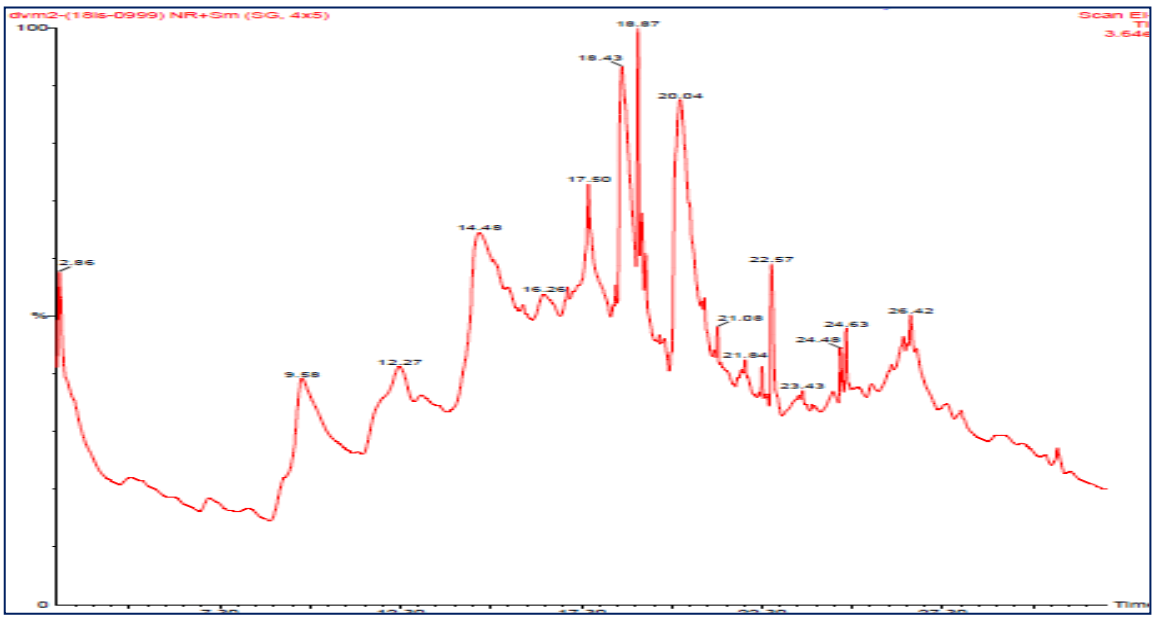
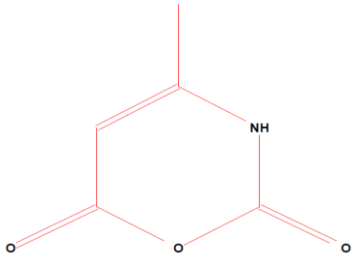


Figure.8 Showing GC-MS Chromatogram of methanol extract of the *Vitis vinifera* peel

9.58

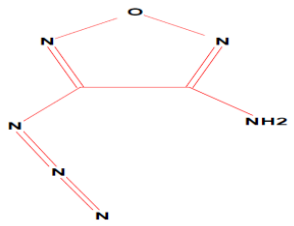


Hit	Compound Name	M.W.	Formula
1	4-METHYL-1,3-OXAZINE-2,6[3H]-DIONE	127	C5H5O3N
2	DEC-9-EN-6-OXO-1-YLAMIDE	183	C10H17O2N
3	1,2,5-OXADIAZOLE-3-CARBOHYDROXYMIC ACID, 4-AMINO-	144	C3H4O3N4
4	4(1H)-PYRIMIDINONE, 6-AMINO-2-METHYL-5-NITROSO-	154	C5H6O2N4
5	PROPANENITRILE, 3-AMINO-2,3-DI(HYDROXYMINO)-	128	C3H4O2N4
6	GLUTAMINE, N-METHYL-	161	C6H11O4N
7	PROPANAL, 2-METHYL-, OXIME	87	C4H9ON
8	3(2H)-ISOXAZOLONE, 4,5-DIMETHYL-	113	C5H7O2N
9	2,4(1H,3H)-PYRIMIDINEDIONE, 1-[3,5-DIHYDROXY-6-HYDROXYMETHYL]-	337	C13H15O6N5
10	1,2,3-TRIAZOLE-4-METHANOL, 1-(4-AMINOFURAZAN-3-YL)-	182	C5H6O2N6
11	3-METHYL-3,5--(CYANOETHYL)TETRAHYDRO-4-THIOPYRANONE	236	C12H16ON2S
12	CYCLOHEPTANO[D]IMIDAZOLIDINE, 1,3-DIHYDROXY-2-METHYL-	186	C9H18O2N2
13	1H-IMIDAZOLE, 2,4-DIMETHYL-	96	C5H8N2
14	RONIDAZOLE	200	C6H8O4N4
15	PROPANAL, 2-METHYL-, OXIME	87	C4H9ON
16	L-GUANIDINOSUCCINIMIDE	141	C5H7O2N3
17	5-AMINO-3,4-DIMETHYL-ISOXAZOLE	112	C5H8ON2
18	SPIRO[TETRAHYDROFURAN-3,5'-HYDANTOIN]	156	C6H8O3N2
19	1,3-OXAZIN-2-ONE, TETRAHYDRO-3-METHYL-5,6-TRIMETHYLENE, CIS-	155	C8H13O2N
20	1H-1,2,3-TRIAZOLE-5-METHANOL, 1-(4-AMINO-1,2,5-OXADIAZOL-3-YL)-	182	C5H6O2N6

12.27

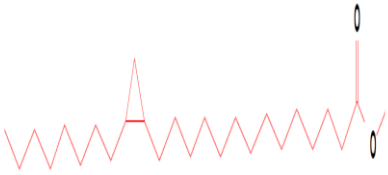
Hit	Compound Name	M.W.	Formula
1	4-CHLORO-1-BUTANOL	108	C4H9OCl
2	4-CHLORO-1-BUTANOL	108	C4H9OCl
3	OXIRANE, PROPYL-	86	C5H10O
4	PROPYL ALDOXIME, 2-METHYL-, ANTI-	87	C4H9ON
5	3-ETHYL-3-METHYLDIAZIRIDINE	86	C4H10N2
6	4-HYDROXYBUTYL ACRYLATE	144	C7H12O3
7	4,5-DIHYDRO-2-METHYLIMIDAZOLE-4-ONE	98	C4H6ON2
8	4-HYDROXYBUTYL ACRYLATE	144	C7H12O3
9	4-HYDROXYBUTYL ACRYLATE	144	C7H12O3
10	1,2,5-TRIAZOLE 2-OXIDE, 1-SEC-BUTYL-3-NITRO-4-AMINO-	201	C6H11O3N5
11	1-DIMETHYLAMINO-2-NITROETHYLENE	116	C4H8O2N2
12	L-GALA-L-IDO-OCTOSE	240	C8H16O8
13	5-AMINO-3,4-DIMETHYL-ISOXAZOLE	112	C5H8ON2
14	PENTANOIC ACID, 3-HYDROXY-4-METHYL-, METHYL ESTER	146	C7H14O3
15	CYCLOHEPTANOL	114	C7H14O
16	3,8,9-TRIOXABICYCLO[4.2.1]NONANE #	130	C6H10O3
17	ACETIC ACID, PENTYL ESTER	130	C7H14O2
18	CYCLOHEXANOL, 2-METHYL-, TRANS-	114	C7H14O
19	ISOTHIOUREA, 2-(2-OCTYLSULFONYL)ETHYL-	280	C11H24O2N2S2
20	4-AMINO-1-HEXANOL	117	C6H15ON

14.47



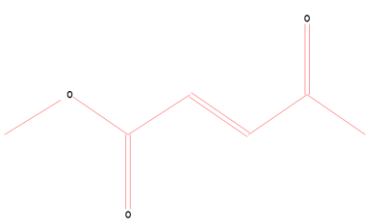
Hit	Compound Name	M.W.	Formula
1	FURAZANAMINE, 4-AZIDO-	126	C2H2ON6
2	3-ETHYLAMINO-5-HEXENE-2-OL	143	C8H17ON

17.49



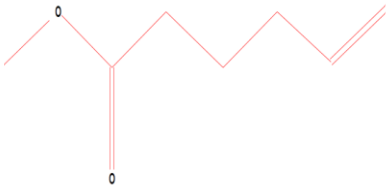
Hit	Compound Name	M.W.	Formula
1	CYCLOPROPANETETRADECANOIC ACID, 2-OCTYL-, METHYL ESTER	394	C26H50O2
2	1,3;2,5-DIFORMAL-L-RHAMNITOL ACETATE	260	C10H12O8
3	DODECANOIC ACID, 2,3-BIS(ACETYLOXY)PROPYL ESTER	358	C19H34O6
4	LYXITOL, 1-O-NONYL-	278	C14H30O5
5	2-BUTANOL, 3-(1,3-DIMETHYLBUTOXY)-	174	C10H22O2
6	3-PENTANOL, 3-METHYL-	102	C6H14O
7	3-PENTANOL, 3-METHYL-	102	C6H14O
8	.ALPHA.-D-GLUCOPYRANOSIDE, METHYL 3,6-ANHYDRO-	176	C7H12O5
9	PYRIMIDINE-2,4,6(1H,3H,5H)-TRIONE, 1-OCTADECYL-	380	C22H40O3N2
10	3-OCTANOL, 3,7-DIMETHYL-, (.+/-.)-	158	C10H22O
11	3-OCTANOL, 3,6-DIMETHYL-	158	C10H22O
12	3-OCTANOL, 3,7-DIMETHYL-	158	C10H22O
13	2-METHYL-3-DECANOL	172	C11H24O
14	EICOSANOIC ACID	312	C20H40O2
15	1,2,3,4-PENTADECANETETROL, [2R-(2R*,3S*,4S*)]-	276	C15H32O4
16	1-OCTANAMINE, N-METHYL-N-NITROSO-	172	C9H20ON2
17	4-HEPTANOL, 2,6-DIMETHYL-4-PROPYL-	186	C12H26O
18	1,2,3,4-HEXADECANETETROL, [2R-(2R*,3S*,4S*)]-	290	C16H34O4
19	D-MANNOHEXADECANE-1,2,3,4,5-PENTAOL	306	C16H34O5
20	UNDECANOL-4	172	C11H24O

18.42



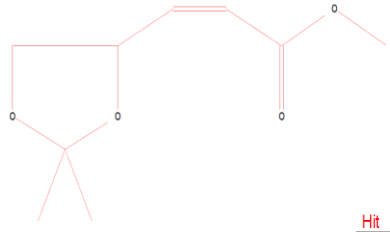
Hit	Compound Name	M.W.	Formula
1	2-PENTENOIC ACID, 4-OXO-, METHYL ESTER, (Z)-	128	C6H8O3
2	PENTANOIC ACID, 3,5-DIOXO-, METHYL ESTER	144	C6H8O4
3	HEXANOIC ACID, 3-OXO-, METHYL ESTER	144	C7H12O3
4	2-PENTENOIC ACID, 4-OXO-, METHYL ESTER, (E)-	128	C6H8O3
5	2(5H)-FURANONE, 5,5-DIMETHYL-	112	C6H8O2
6	1,3-DIOXOLANE, 2,2-DIMETHYL-4-HYDROXYMETHYL-5-(2-HYDROXYPROPYL)-	190	C9H18O4
7	XYLOPYRANOSIDE, METHYL 4-THIO-, TRIACETATE, .ALPHA.-D-	306	C12H18O7S
8	2(5H)-FURANONE, 5,5-DIMETHYL-	112	C6H8O2
9	HEPTANEDIOIC ACID, 4-METHYL-, DIMETHYL ESTER	202	C10H18O4
10	ACETIC ACID, 2-METHYL-6-OXO-HEPTYL ESTER	186	C10H18O3
11	HEXANOIC ACID, 5-OXO-, METHYL ESTER	144	C7H12O3
12	HEPTANEDIOIC ACID, 3-METHYL-, DIMETHYL ESTER	202	C10H18O4
13	METHYL 4-OXO-2-PENTENOATE	128	C6H8O3
14	5-ISOXAZOLIDINECARBOXYLIC ACID, 5-METHYL-2-[5-O-METHYL-2,3-O-(1-METHY	331	C15H25O7N
15	2-PROPANOL, 1-(1,3-DIMETHYLBUTOXY)-	160	C9H20O2
16	3-ETHYL-4-METHYL-3-HEPTANOL	158	C10H22O
17	2-FURANHEXANOIC ACID, TETRAHYDRO-.BETA.,.DELTA.-DIHYDROXY-5-METHO	262	C12H22O6
18	5-ISOXAZOLIDINECARBOXYLIC ACID, 5-METHYL-2-[5-O-METHYL-2,3-O-(1-METHY	331	C15H25O7N
19	.BETA.-L-ARABINOPYRANOSIDE, METHYL 2-O-METHYL-3,4-O-(1-METHYLETHYLI	218	C10H18O5
20	1,4-DI-O-ACETYL-2,5-DI-O-METHYL-3,6-DIDEOXY-D-GLUCITOL	262	C12H22O6

18.87

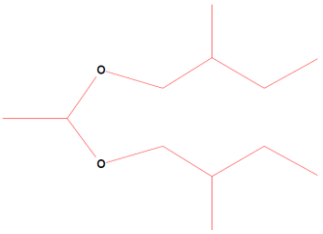


Hit	Compound Name	M.W.	Formula
1	5-HEXENOIC ACID, METHYL ESTER	128	C7H12O2
2	3-DODECEN-1-OL	184	C12H24O
3	2-HEPTADECENAL	252	C17H32O
4	4-OCTADECENOIC ACID, METHYL ESTER	296	C19H36O2
5	UNDECANENITRILE	167	C11H21N
6	4-CHLORO-3-N-HEXYLTETRAHYDROPYRAN	204	C11H21OCl
7	HEXANENITRILE, 5-METHYL-	111	C7H13N
8	DECANENITRILE	153	C10H19N
9	METHYL 3-CYCLOPROPYLPROPANOATE	128	C7H12O2
10	NONANENITRILE	139	C9H17N
11	E-2-OCTADECADECEN-1-OL	268	C18H36O
12	UNDECANENITRILE	167	C11H21N
13	Z-3-OCTADECEN-1-OL ACETATE	310	C20H38O2
14	5-HEXENOIC ACID, METHYL ESTER	128	C7H12O2
15	1,19-EICOSADIENE	278	C20H38
16	Z-2-OCTADECEN-1-OL ACETATE	310	C20H38O2
17	DECANENITRILE	153	C10H19N
18	CYCLOHEXANOL, 2-METHYL-, ACETATE, CIS-	156	C9H16O2
19	OXALIC ACID, CYCLOHEXYLMETHYL PROPYL ESTER	228	C12H20O4
20	2-DODECEN-1-OL	184	C12H24O

20.04



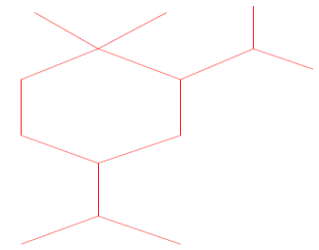
Hit	Compound Name	M.W.	Formula
1	2-PROPENOIC ACID, 3-(2,2-DIMETHYL-1,3-DIOXOLAN-4-YL)-, METHYL ESTER, (S)-	186	C9H14O4



Hit	Compound Name	M.W.	Formula
1	BUTANE, 1,1'-[ETHYLIDENEBIS(OXY)]BIS[2-METHYL-	202	C12H26O2
2	1,6-HEPTADIEN-4-OL	112	C7H12O
3	9-OCTADECEN-12-YNOIC ACID, METHYL ESTER	292	C19H32O2
4	5-DIMETHYLAMINO-2-METHYL-4-OXAZOLECARBONITRILE	151	C7H9ON3
5	DISULFIDE, ISOPENTYL METHYL	150	C6H14S2
6	8,11,14-EICOSATRIENOIC ACID, METHYL ESTER, (Z,Z,Z)-	320	C21H36O2
7	BUTANOYL CHLORIDE	106	C4H7OCl
8	METHYL PENTYL DISULFIDE	150	C6H14S2
9	5-METHOXY-CYCLOOCTENE	140	C9H16O
10	BICYCLO[2.2.2]OCT-5-EN-2-YLDIMETHYLAMINE	151	C10H17N
11	1,4-DIOXANE, 2,6-DIMETHYL-	116	C6H12O2
12	2,6-DIMETHYLMORPHOLINE-4-CARBOTHIOIC ACID, 2-[1-[2-PYRIMIDYL]ETHYLIDE	293	C13H19ON5S

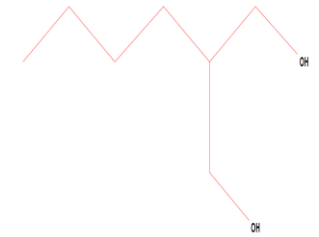
22.56

24.63



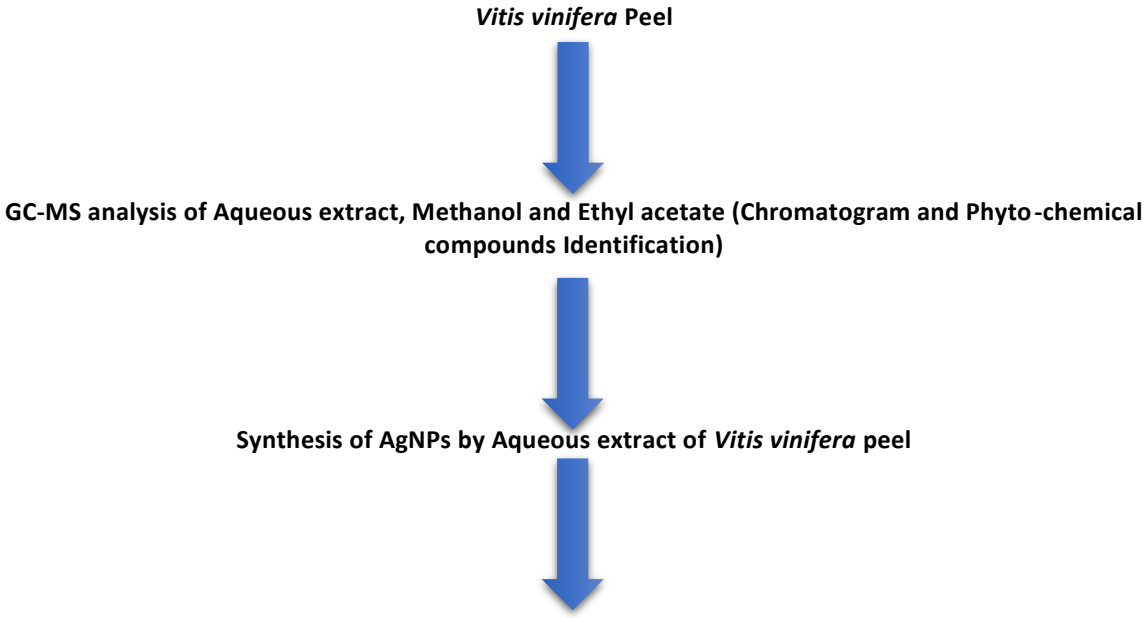
Hit	Compound Name	M.W.	Formula
1	CYCLOHEXANE, 2,4-DIISOPROPYL-1,1-DIMETHYL-	196	C14H28
2	CYCLOHEXANE, 1,5-DIISOPROPYL-2,3-DIMETHYL-	196	C14H28
3	CYCLOHEXANE, 1,1'-(1-METHYLPROPYLIDENE)BIS-	222	C16H30
4	OXALIC ACID, HEPTADECYL 1-MENTHYL ESTER	466	C29H54O4
5	OXALIC ACID, 1-MENTHYL PENTADECYL ESTER	438	C27H50O4

26.41



Hit	Compound Name	M.W.	Formula
1	1-HEXANOL, 2-(HYDROXYMETHYL)-	132	C7H16O2
2	AMINOPROPIONAMIDE, N-METHYL-N-[4-(1-PYRROLIDINYL)-2-BUTYNYL]-N'-T-BUT	323	C17H29O3N3
3	2-OCTENAL, (E)-	126	C8H14O
4	3-METHYL-4-(PHENYLTHIO)-2-PROP-2-ENYL-2,5-DIHYDROTHIOPHENE 1,1-DIOXI	280	C14H16O2S2
5	FORMAMIDE, N-METHYL-N-4-[1-(PYRROLIDINYL)-2-BUTYNYL]-	180	C10H16ON2

Figure.9 Showing Phyto-chemicals identified in the methanol extract of the *Vitis vinifera* peel by GC-MS



Flow chart of the Study

4. CONCLUSION:

In the present study more than twenty-five constituents have been identified from Aqueous, Ethyl acetate and methanolic extracts of *Vitis vinifera* peel by GC-MS analysis. The presence of various bio-active compounds justifies their use for various ailments by traditional practitioners Xylose and Cyclohexane were present. However, further studies are undertaken to identify the mechanisms of these compounds and their potential applications for the diseases in the field of Pharmaceuticals because the peel is having the medical applications (Phyto-chemical and bio-active compounds) for health benefits.

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