TITLE

Validating potent anti-inflammatory and anti-rheumatoid properties of *Drynaria quercifolia* rhizome methanolic extract through *in vitro, in vivo, in silico and* GC-MS-based profiling.

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Title: Additional file 2

Description: List of compounds identified in GC-MS analysis with their chemical class and biological properties.

Sl No.	Compound Name with formula	Chemical class	Molecular Weight (kDa); Retention Time (second)	Area%	SI	Biological Properties with Reference
1.	Silane, ethenylethoxydimethyl- [$C_6H_{14}OSi_2$]	Group 14 hydride	130; 8.227	1.63	78	Not reported
2.	4H-Pyran-4-one, 2,3-dihydro-3,5-dihydroxy-6-methyl- [$C_6H_8O_4$]	Pyranone	144; 9.357	1.11	94	Anti-proliferative and pro-apoptotic [1],Antioxidant [2], Modulate autonomic nerve activity in Rat model [3]
3.	Catechol [$C_6H_6O_2$]	Benzenediols	110; 10.333	5.07	95	Antimicrobial [4]
4.	5-Hydroxymethylfurfural [$C_6H_6O_3$]	Furans	126; 10.743	1.32	90	Antioxidant and Antiproliferative [5], Inhibitory effect on the sickling of red blood cells [6], Anti-allergic (Type I allergic Diseases [7],Anti-inflammatory [8]
5.	Benzeneacetic acid [$C_8H_8O_2$]	Monocarboxylic acid containing a phenyl group	136; 11.050	0.27	85	Antimicrobial [9], Anti-inflammatory [10], Derivatives of phenylacetic acids [11]
6.	Beta.-d-Ribopyranoside, methyl, 3-acetate [$C_8H_{14}O_6$]	D-ribopyranose	206; 14.807	0.40	78	Not reported
7.	Dodecanoic acid [$C_{12}H_{24}O$]	Saturated fatty acid	200; 15.083	0.50	95	Not reported
8.	Benzenepropanoic acid, 4-hydroxy-, methyl ester [$C_{10}H_{12}O_3$]	Phenyl propanoids	180; 15.377	0.34	85	Not reported

9.	1,3,4,5-tetrahydroxycyclohexane carboxylic acid [$C_7H_{12}O_6$]	Cyclitol and cyclohexanecarboxylic acid	192; 16.780	4.44	85	Not reported
10.	Tetradecanoic acid [$C_{14}H_{28}O_2$]	Saturated fatty acid	228; 17.367	0.88	95	Larvicidal and repellent [12]
11.	1,2-Benzenedicarboxylic acid, bis(2-methylpropyl) ester [$C_{16}H_{22}O_4$]	Benzoic acid esters	278; 18.400	1.14	97	Not reported
12.	n-Pentadecanol [$C_{15}H_{32}O$]	Saturated long-chain fatty alcohol	228; 18.590	0.29	97	Antimicrobial [13]
13.	Hexadecanoic acid, methyl ester [$C_{17}H_{34}O_2$]	Saturated fatty acid	270; 19.017	0.91	96	Anti-inflammatory, Anti microbial, Antioxidant [14,15]
14.	2-hydroxycyclopentadecanone [$C_{15}H_{28}O_2$]	Cyclopentadecanone	240; 19.233	0.47	85	Not reported
15.	Dibutyl phthalate [$C_{16}H_{22}O_4$]	Phthalates	278; 19.363	0.17	95	Antimicrobial, Anti-inflammatory [16,17]
16.	n-Hexadecanoic acid [$C_{16}H_{32}O_2$]	Saturated fatty acid	256; 19.507	7.30	96	Anti-bacterial, Anti-fungal [18]
17.	Alpha.-D-Glucopyranoside, methyl [$C_7H_{14}O_6$]	Monosaccharide	194; 20.203	0.79	84	Growth inhibitory effect on mammalian cells and parasites [19]
18.	n-Nonadecanol-1 [$C_{19}H_{40}O$]	Long-chain fatty alcohols	284; 20.593	1.11	97	Antimicrobial, Cytotoxic activity [20]
19.	9,12-Octadecadienoic acid (Z,Z)-, methyl ester [$C_{19}H_{34}O_2$]	Polyunsaturated Omega-6 trans fatty acid (TFA)	294; 20.657	0.58	95	Anti-inflammatory, Anti-cancer [21,22]
20.	6-Octadecenoic acid, methyl ester, (Z)- [$C_{19}H_{36}O_2$]	Monounsaturated omega-12 fatty acid	296; 20.717	0.52	93	Not reported
21.	cis-9-Hexadecenal [$C_{16}H_{30}O$]	Monounsaturated omega-7 fatty acid	238; 21.167	6.04	91	Antimicrobial [23]
22.	Octadecanoic acid [$C_{18}H_{36}O_2$]	Saturated fatty acid	284; 21.347	0.80	93	Antimicrobial [24]
23.	4,8,12,16-Tetramethylheptadecan-4-olide [$C_{21}H_{40}O_2$]	Long-chain methyl-branched fatty acid	324; 22.950	0.23	96	Not reported
24	1-Heptacosanol [$C_{27}H_{56}O$]	Long-chain primary fatty alcohol	396; 24.093	0.47	95	Antimicrobial [20]
25.	Hexadecanoic acid, 2-	2-monoglyceride	330;	2.32	92	Not reported

	hydroxy-1-(hydroxymethyl)ethyl ester [$C_{19}H_{38}O_4$]		24.273			
26.	Bis(2-ethylhexyl) phthalate [$C_{24}H_{38}O_4$]	Diester of phthalic acid and the branched-chain **2**-ethylhexanol	390; 24.407	0.30	96	Antimicrobial, Cytotoxic activity [25]
27.	9,12-Octadecadienoic acid (Z,Z)-, 2-hydroxy-1-hydroxymethyl)ethyl ester [$C_{21}H_{38}O_4$]	2-monoglyceride	354; 25.690	3.98	91	Not reported
28.	Squalene [$C_{30}H_{50}$]	Triterpene	410; 26.753	0.76	97	Anti inflammatory, Anticancer, Antioxidant [26,27,28,29,30]
29.	Gamma.-Tocopherol [$C_{28}H_{48}O_2$]	Tocopherol	416; 29.767	0.40	94	Potent Anti-inflammatory, Anti-cancer [31,32,33,34]
30.	Vitamin E [$C_{29}H_{50}O_2$]	Tocopherol	430; 31.090	2.01	95	Anti-inflammatory, Anti-cancer, Antioxidant, Immunomodulatory, Wound healing [35,36,37,38]
31.	A'-neogammacer-22(29)-ene [$C_{30}H_{50}$]	Triterpene	410; 31.797	0.59	83	Not reported
32.	1-phenanthrenecarboxylic acid, 7-ethyl-1,2,3,4,4a,4b,5,6,7,9,10,10a-dodecahydro-1,4a,7-trimethyl-, methyl Ester, [$C_{21}H_{34}O_2$]	Fatty acid ester	318; 32.357	6.07	65	Not reported
33.	Ergost-5-en-3-ol, (3.beta.,24r) [$C_{28}H_{48}O$]	Steroid	400; 33.110	1.32	93	Not reported
34.	Cholest-5-en-3-ol, 4,4-dimethyl-, (3.beta.) [$C_{29}H_{50}O$]	Steroid	414; 33.703	4.17	82	Not reported
35.	Ergosta-8,24(28)-dien-3-ol, 4,14-dimethyl-, (3.beta.,4.alpha.,5.alpha.)-[$C_{30}H_{50}O$]	3beta-sterol	426; 34.603	3.07	86	Not reported
36.	Stigmast-5-en-3-ol, (3.beta.) [$C_{29}H_{50}O$]	Sterol	414; 35.180	4.98	81	Immunomodulatory,

						Apoptotic, Anti-proliferative [39,40]
37.	Cholest-5-en-3-ol, 4,4-dimethyl-, (3.beta.)- [$C_{29}H_{50}O$]	3beta-sterol	414; 36.577	0.44	78	Antilisterial activity [41]
38.	9,19-Cyclolanost-24-en-3-ol, (3.beta.)-[$C_{30}H_{50}O$]	Triterpenoid	426; 37.313	1.34	91	Not reported
39.	9,19-Cyclolanost-25-en-3-ol, 24-methyl-, (3.beta.,24S)-[$C_{31}H_{52}O$]	Triterpenoid	440; 38.407	0.65	78	Not reported
40.	(1,5-dimethyl-hexyl)-3a,10,10,12b-tetramethyl-1,2,3,3a,4,6,8,9,10,10a,11,12,12a,12b-tetradecahydro-benzo[4,5]cyclohepta[1,2-e]inde [$C_{30}H_{50}O$]	Triterpenoid	410; 38.833	1.34	82	Not reported
41.	Cyclopropa[5,6]-33-norgorgostan-3-ol, 3',6-dihydro-, (3.beta.,5.beta.,6.alpha.,22.xi.,23.xi.)- [$C_{30}H_{50}O$]	Triterpenoid	426; 39.143	3.41	79	Not reported
42.	9,19-Cyclolanostan-3-ol, 24-methylene-, (3.beta.)- [$C_{31}H_{52}O$]	Triterpenoid	440; 40.447	0.89	83	Not reported
43.	5-(7a-Isopropenyl-4,5-dimethyl-octahydroinden-4-yl)-3-methyl-pent-2-en-1-ol [$C_{20}H_{34}O$]	Triterpenoid	290; 41.147	1.29	80	Not reported
44.	9,19-cyclolanostan-3-ol, 24-methylene-, (3.beta.)- [$C_{31}H_{52}O$]	Triterpenoid	440; 41.843	0.78	90	Not reported
44.	9,19-Cyclolanostan-3-ol, 24-methylene-, (3.beta.)- [$C_{31}H_{52}O$]	Triterpenoid	440; 42.387	1.49	91	Not reported
45.	Lanost-8-ene-3,22,23-triol, 24-methylene-, 22-acetate, (3.beta.,22r,23s)- [$C_{33}H_{54}O_4$]	Triterpenoid	514; 44.267	0.98	56	Not reported
46.	9,19-Cyclolanostan-3-ol, 24-methylene-, (3.beta.)- [$C_{31}H_{52}O$]	Triterpenoid	440; 44.943	0.80	83	Not reported
47.	9,19-cycloergost-24(28)-en-3-ol, 4,14-dimethyl-, (3.beta.,4.alpha.,5.alpha.) [$C_{30}H_{50}O$]	Triterpenoid	426; 48.603	0.78	79	Not reported

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