Supplementary Material

Investigation of bioactive components responsible for the antibacterial and anti-biofilm activities of *Caroxylon volkensii* by LC-QTOF-MS/MS analysis and molecular docking

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Table S1. List of compounds identified by LC-MS/MS in the methanolic extract of *Caroxylon volkensii* (CVM).

No.	Name	Formula	Polarity	Rt	*m/z*	Observed MW	Theoretical MW	Mass error (ppm)	Peak area	MS/MS fragment ions	Source (reference)
1.	**Alkaloids and nitrogenous compounds**										
1.1	Salsolinol	$C_{10}H_{13}NO_2$	P	24.11	180.10265	179.095	179.09463	4.128	2.69E+07		Cocoa powder [1]
1.2	Salsoline	$C_{11}H_{15}NO_2$	P	28.45	194.1163	193.109	193.1103	-6.42	3.06E+07		*Salsola kali, S. longifolia, S. tragus, S. oppositifolia*, and *S. soda* [2-6]
1.3.1	*N*-Methylisosalsolidine	$C_{12}H_{17}NO_2$	P	15.67	208.1311	207.124	207.1259	-10.01	1.14E+07		*Salsola oppositofolia, S. soda* and *S. tragus* [6]
1.3.2	Salsolidine	$C_{12}H_{17}NO_2$	P	15.67	208.1311	207.124	207.1259	-10.01	1.14E+07		*Salsola oppositofolia, S. soda* and *S. tragus* [6]
1.4.1	Salsoline A (trolline)	$C_{12}H_{13}NO_3$	N	18.35	218.0816	219.0889	219.08954	-2.94	1130706.422		*S. collina, S. vermiculata,* and *S. tetrandra* [7-10]
1.4.2	Salsoline B	$C_{12}H_{13}NO_3$	N	18.35	218.0816	219.0889	219.08954	-2.94	1130706.422		*S. collina* [11]
1.5	Terrestric acid	$C_4H_6N_4O_3$	P	1.71	159.0515	158.0442	158.04399	1.56	1751550.556		*S. collina* [9]
1.6	4-(2-Aminoethyl)phenol (tyramine)	$C_8H_{11}NO$	P	120.63	138.094	137.0867	137.08406	19.61	6256575.185	103.0539, 121.0642	*Spinacia oleracea* (family, Amaranthaceae) [12]
1.7	*N*-Methyltyramine	$C_9H_{13}NO$	P	3.70	152.1048	151.098	151.09971	-14.39	1.46E+09	103.0539, 121.0642	Citrus plants [13]
1.8	*N*,*N*-Dimethyltyramine (hordenine)	$C_{10}H_{15}NO$	P	4.64	166.1236	165.1163	165.11536	5.90	4.47E+08	103.0538, 121.0642	Citrus plants [14]
1.9	Dopamine / octopamine (nor-synephrine)	$C_8H_{11}NO_2$	P	65.98	154.086	153.0787	153.07898	-1.59	4414643.181		*Spinacia oleracea*, family Amaranthaceae [15]
1.10	*N*-Methyloctopamine (synephrine)	$C_9H_{13}NO_2$	N	2.28	166.0861	167.0934	167.09463	-7.65	95751.99		Citrus fruits [13]
		$C_9H_{13}NO_2$	P	17.54	168.1042	167.0969	167.09463	13.65	8201435.68	107.0486, 135.0669, 150.0901	

1.11	Tyramine-*O*-*β*-D-glucoside	$C_{14}H_{21}NO_6$	P	3.47	300.1376	299.1303	299.13689	-21.94	1.92E+07	103.0527, 121.0639, 282.1324	Citrus plants [16]
1.12	*N*-Methyltyramine-*O*-*β*-D-glucoside	$C_{15}H_{23}NO_6$	P	1.59	314.1577	313.1504	313.15254	-6.71	9487291.502	121.0640, 176.0916, 296.1496	Citrus plants [16]
1.13	Hordenine *O*-*β*-D-glucoside	$C_{16}H_{25}NO_6$	P	2.88	328.1743	327.167	327.16819	-3.61	4059027.188		*Stapelia hirsuta* [17]
1.14	Dopamine; 3-*O*-*β*-D-glucopyranoside / octopamine-*O*-*β*-D-glucoside	$C_{14}H_{21}NO_7$	N	53.07	314.1239	315.1311	315.1318	-2.07	4811491.371		*Entada pursaetha* (family Leguminosae)
1.15	Norepinephrine	$C_8H_{11}NO_3$	P	2.649	170.0815	169.0742	169.07389	1.77	8080052.314		*Spinacia oleracea* (family Amaranthaceae) [15]
1.16	Norepinephrine-*O*-*β*-D-glucoside	$C_{14}H_{21}NO_8$	N	38.05	330.119	331.1263	331.12672	-1.19	6851915.489		---
1.17	Epinephrine-*O*-*β*-D-glucoside	$C_{15}H_{23}NO_8$	N	3.69	344.1362	345.1434	345.14237	3.12	7332731.648		---
1.18	Methylepinephrine-*O*-*β*-D-glucoside	$C_{16}H_{25}NO_8$	N	40.52	358.1505	359.1577	359.15802	-0.81	8728172.29		---
1.19	*N*-(4-Hydroxyphenethyl)cinnamamide (*N*-cinnamoyltyramine)	$C_{17}H_{17}NO_2$	P	122.86	268.1307	267.1235	267.12593	-9.24	6273338.075		*Phellodendron japonicum* (family Rutaceae) [18]
1.20	*N*-(4-Hydroxyphenethyl)-3-(4-methoxyphenyl)acrylamide	$C_{18}H_{19}NO_3$	P	63.52	298.1452	297.138	297.13649	4.94	2783225.96		Chemically synthesized [19]
1.21	2-Amino-2-phenylpropanoic acid; (*S*)-form, *N*-benzyloxycarbonyl (*N*-caffeoyltyramine)	$C_{17}H_{17}NO_4$	N	42.16	298.1082	299.1155	299.11576	-0.79	6751001.093		*S. vermiculata,* and *S. tetrandra* [10]
1.22	*N*-*trans*-Feruloyltyramine (moupinamide)	$C_{18}H_{19}NO_4$	P	52.96	314.1373	313.13	313.13141	-4.43	3.33E+07		*S. collina, S. tetrandra, S. vermiculata, S. Tetrandra Forssk, S. baryosoma*, and *S. komarovii* [9-11, 20-23]
1.23	(*E*)-3-(4-Hydroxy-3-methoxyphenyl)-*N*-(4-methoxyphenethyl)acrylamide	$C_{19}H_{21}NO_4$	P	57.54	328.1534	327.1461	327.14706	-2.83	2.27E+07	121.0619, 145.0269, 177.0540, 285.0762	*Sinomenium acutum* [24] *Zanthoxylum piperitum* [25]
1.24.1	2`-Hydroxy- 3``-	$C_{19}H_{21}NO_6$	N	40.52	358.1287	359.1359	359.13689	-2.65	5698740.994		*S. collina* [26]

	methyoxymoupinamide										
1.24.2	*N*-[2`-(3``,4``-Dihydroxyphenyl)-2`-hydroxyethyl]-3-(3```,4```-dimethoxyphenyl)prop-2-enamide (*N*-(3`,4`-dimethoxy-cinnamoyl)-norepinephrine)	$C_{19}H_{21}NO_6$	N	40.52	358.1287	359.1359	359.13689	-2.65	5698740.994		*S. foetida, S. vermiculata,* and *S. tetrandra* [10, 27]
1.25	*N-trans*-Feruloyl 3-*O*-methyldopamine	$C_{19}H_{21}NO_5$	P	55.07	344.1509	343.1437	343.14197	4.93	1.39E+07	145.0272, 177.0538	*S. collina*, and *S. komarovi* [9, 11, 23]
1.26	Aristomanoside (4``,4```-diglucopyranoside of *N*-feruloyl-3``-methoxytyramine)	$C_{31}H_{41}NO_{15}$	P	60.23	668.2544	667.2471179	667.24762	-0.75	19587.545		*Aristolochia manshuriensis* [28]
1.27	4```-*O*-*β*-D-Glucopyranosyl caffeoyltyramine	$C_{23}H_{27}NO_9$	P	36.66	462.1758	461.1686	461.16858	-0.03	15889.28	121.0634, 177.0562, 325.1070, 342.1158, 356.1308	New compound
1.28	Rubemamine (*E*)-*N*-(3,4-dimethoxyphenethyl)-3-(3,4-dimethoxyphenyl)acrylamide	$C_{21}H_{25}NO_5$	P	62.23	372.1816	371.1743	371.17327	2.78	113439.74		*Chenopodium album* (family Amaranthaceae) [29]
1.29	Ethyl 2,2-diureidoacetate (allantoic acid ethyl ester)	$C_6H_{12}N_4O_4$	N	12.016	203.0782623	204.0855389	204.08585	-1.52	1.45E+07		
			P	12.03	205.0927277	204.0854511	204.08585	-1.955	5.23E+07	118.0644, 132.0798, 146.0590, 188.068	-
1.30	Vulgaxanthin I	$C_{14}H_{17}N_3O_7$	P	114.30	340.1131897	339.105913	339.10665	-2.17	1.25E+07		*Beta vulgaris* (family Amaranthaceae) [30]
2	**Phenolic acids and simple phenols**										
2.1	Cinnamic acid	$C_9H_8O_2$	N	3.22	147.0467	148.054	148.05243	10.60	3015615.677		*Salsola imbricata* and *S. cyclophylla* [31, 32]
2.2	Ferulic acid	$C_{10}H_{10}O_4$	N	13.54	193.0476	194.0549	194.05791	-15.59	1.18E+07		*S. collina, S. kali, S. imbricata, S. vermiculata, S. Tetrandra*, and *S. cyclophylla* [10, 21, 31-34]
		$C_{10}H_{10}O_4$	P	29.74	195.0644	194.0571	194.05791	-4.02	6695901.622		

2.3	Rosmarinic acid	$C_{18}H_{16}O_8$	N	11.89	359.07724	360.08452	360.08452	-0.009	6926962.023		*S. imbricata* [31]
2.4	3-(4-Hydroxyphenyl)-2 (sulfooxy)propanoic acid (tichocarpol A)	$C_9H_{10}O_7S$	N	8.38	261.00812	262.01539	262.01472	2.56	6.46E+07	107.0498, 119.0488, 135.0435, 163.0384, 181.0489	*Tichocarpus crinitus* [35]
2.5	Vanillic acid glucoside (4-(*β*-D-glucopyranosyloxy)-3-methoxybenzoic acid)	$C_{14}H_{18}O_9$	P	19.068	331.1023254	330.0950488	330.09508	-0.09	4620696		*Chenopodium quinoa* (family Amaranthaceae) [36]
2.6	Resorcinol	$C_6H_6O_2$	P	10.15	111.0443802	110.0371036	110.03678	2.941	4556750.3		*S. kali* [5]
2.7	Ethyl-*p*-digallate	$C_{16}H_{14}O_9$	N	19.75	349.0561523	350.0634289	350.06378	-1.00	2.36E+07	101.0235, 150.9693, 180.9799, 241.0003	*Mangifera indica* [37]
3	**Triterpenoids and their derivatives**										
3.1	2*α*,3*β*,23,24-Tetrahydroxyurs-12-en-28-oic acid	$C_{30}H_{48}O_6$	P	108.55	505.3514	504.3441	504.34509	-1.96	3845504.09		*S. baryosma* [38]
3.2	Oleanolic acid	$C_{30}H_{48}O_3$	N	95.76	455.354	456.3613	456.36035	1.97	1233503.345		*S. inermis* and *S. soda* [39, 40]
3.3	Oleanolic acid-3-*O*-*β*-D-glucopyranosyl	$C_{36}H_{58}O_8$	N	118.98	617.4084	618.4157	618.41317	4.13	1411137.56		*S. inermis* [39]
3.4	Salsoloside C (oleanolic acid 28-*O*-*β*-D-glucopyranoside 3-*O*-[*O*-*β*-D-xylopyranosyl-(l→4)-*β*-*D*-glucuropyranoside])	$C_{47}H_{74}O_{18}$	N	66.67	925.476	926.4833	926.48752	-4.57	4.78E+07		*S. baryosma, S. micranthera, S. grandis,* and *S. soda* [40-43]
3.5	Salsoloside E (oleanolic acid 28-*O*-*β*-D-glucopyranoside 3-*O*-[*O*-*β*-D-glucopyranosyl-(1→2)-[*O*-*β*-D-xylopyranosyl-(l→4)-*β*-D-glucuropyranoside])	$C_{53}H_{84}O_{23}$	N	64.32	1087.53	1088.538	1088.54034	-2.45	2.32E+07		*S. micranthera* [44]
3.6	*β*-D-Glucopyranosiduronic acid, (3*β*,4*α*)-28-(β-D-glucopyranosyloxy)-23-hydroxy-28-oxoolean-12-en-3-yl	$C_{42}H_{66}O_{15}$	N	57.16	809.432251	810.43952	810.44017	-0.802	1.05E+07		*C. quinoa* [45]
3.7.1	*β*-D-Glucopyranosiduronic acid, (3*β*)-28-(*β*-D-glucopyranosyloxy)-28-oxoolean-12-en-3-yl 3-*O*-*β*-D-galactopyranosyl	$C_{48}H_{76}O_{19}$	N	66.2	955.4920044	956.499281	956.49808	1.255	1.31E+07		*Achyranthes aspera* (family Amaranthaceae) [46]
3.7.2	*β*-D-Glucopyranosiduronic acid, (2*β*,3*β*)-28-(*β*-D-glucopyranosyloxy)-2-hydroxy-28-oxoolean-12-en-3-yl 3-	$C_{48}H_{76}O_{19}$	N	66.2	955.4920044	956.499281	956.49808	1.255	1.31E+07		*Amaranthus* spp. [47, 48]

	O-(6-deoxy-*α*-L-mannopyranosyl), Amaranthus saponin I										
3.8	Olean-12-en-28-oic acid, 3-[(3-*O*-*β*-D-glucopyranosyl-*β*-D-galactopyranosyl)oxy]-23-hydroxy-, β-D-glucopyranosyl ester quinoasaponin 2	$C_{48}H_{78}O_{19}$	N	66.2	957.5041504	958.511427	958.51373	-2.4	1147204.2		*C. quinoa* [45]
3.9	28-*β*-D-Glucopyranosyl 29-methyl (3*β*,4*α*,20*β*)-3-[(3-*O*-*α*-L-arabinopyranosyl-*β*-D-glucopyranosyl)oxy]-23-hydroxyolean-12-ene-28,29-dioate (quinoasaponin 4)	$C_{48}H_{76}O_{20}$	N	68.19	971.4869995	972.4942761	972.49299	1.322	6575001.7		*C. quinoa* [45]
3.10	*β*-D-Glucopyranosiduronic acid, (3*β*)-28-(*β*-D-glucopyranosyloxy)-28-oxo-30-noroleana-12,20(29)-dien-3-yl 2-*O*-*β*-D-xylopyranosyl	$C_{46}H_{70}O_{18}$	N	63.15	909.4492	910.4565	910.45622	0.30	1451371.545		*S. imbricata* [49]
4	**Flavonoids**										
4.1	Isorhamnetin	$C_{16}H_{12}O_7$	N	61.86	315.0532	316.0605	316.0583	6.86	1.72E+07		*S. collina, S. imbricata*, and *S. komarovii* [9, 21, 23]
4.2	Isorhamnetin-3-*O*-*β*-D-glucopyranoside	$C_{22}H_{22}O_{12}$	P	42.88	479.1189	478.1117	478.1111262	1.10	5706083.02		*S. collina, S. inermis, S. kali, S. vermiculata, S. tetrandra, S. grandis, S. imbricata, S. oppositifolia,* and *S. komarovii* [10, 21, 23, 34, 39, 42, 43, 50, 51]
4.3	Isorhamnetin-3-*O*-rutinoside (narcissin), narcissoside	$C_{28}H_{32}O_{16}$	N	42.98	623.1586	624.1659	624.16903	-5.00	4.71E+07		*S. kali, S. vermiculata S. tetrandra, S. grandis, S. soda, S. oppositifolia,* and *S. komarovii* [10, 23, 40, 42, 43, 50, 51]
4.4	Isorhamnetin 3-*O*-*β*-D-apiofuranosyl(1→2)-*O*-[*α*-L-rhamnopyranosyl(1→6)]-*β*-D-glucopyranoside	$C_{33}H_{40}O_{20}$	N	38.87	755.2022095	756.2094861	756.2112937	-2.39	1.13E+07		*C. pallidicaule* [52]
4.5	Chrysoeriol-7-*O*-*β*-D-glucopyranoside	$C_{22}H_{22}O_{11}$	N	54.12	461.1097	462.117	462.11621	1.62	1666971.44		*S. baryosma*

4.6.1	5,3`-Dihydroxy-2`-methoxy-6,7-methylenedioxyisoflavone	$C_{17}H_{12}O_7$	N	22.57	327.0507	328.0579	328.0583	-1.11	9998276.45		*S. somalensis* [53]
4.6.2	5,2`-Dihydroxy-5`-methoxy-6,7-methylenedioxyisoflavone (tetranin B)	$C_{17}H_{12}O_7$	N	22.57	327.0507	328.0579	328.0583	-1.11	9998276.45		*S. tetrandra* [54]
4.7.1	5,8,3`-Trihydroxy-7,2`-dimethoxyisoflavone	$C_{17}H_{14}O_7$	P	70.67	331.0814	330.0741	330.07395	0.40	9986.24		*S. somalensis* [55]
4.7.2	5,6,3`-Trihydroxy-7,2`-dimethoxyisoflavone	$C_{17}H_{14}O_7$	P	70.67	331.0814	330.0741	330.07395	0.40	9986.24		*S. somalensis* [55]
4.7.3	6,7,3`-Trihydroxy5,2`-dimethoxyisoflavone	$C_{17}H_{14}O_7$	P	70.67	331.0814	330.0741	330.07395	0.40	9986.24		*S. somalensis* [55]
4.8.1	5,3`-Dihydroxy-7,8,2`-trimethoxyisoflavone	$C_{18}H_{16}O_7$	N	11.43	343.0796	344.0869	344.0896029	-7.95	7262065.283		*S. somalensis* [53]
4.8.2	5,3`-Dihydroxy-6,7,2`-trimethoxyisoflavone	$C_{18}H_{16}O_7$	N	11.43	343.0796	344.0869	344.0896029	-7.95	7262065.283		*S. somalensis* [55]
4.8.3	8,3`-Dihydroxy-5,7,2`-trimethoxyisoflavone	$C_{18}H_{16}O_7$	N	11.43	343.0796	344.0869	344.0896029	-7.95	7262065.283		*S. somalensis* [55]
4.9	Catechin	$C_{15}H_{14}O_6$	N	2.98	289.0718	290.0791	290.07904	0.26	2676342.356		*S. imbricata* [56]
4.10	Salisoflavan	$C_{17}H_{18}O_6$	P	33.49	319.1182	318.1109	318.11034	1.91	1783091.45		*S. imbricata* [57]
5	**Steroids**										
5.1	Campesterol	$C_{28}H_{48}O$	P	80.87	401.3787231	400.3714465	400.37052	2.314	29645.44		*S. collina* [58]
5.2	Amasterol	$C_{28}H_{44}O_2$	P	111.4	413.3404846	412.33321	412.33413	-2.23	404285.4		*A. viridis* [59]
6	**Miscellaneous compounds**										
6.1	9,12,13-Trihydroxyoctadeca-10(*E*),15(*Z*)-dienoic acid	$C_{18}H_{32}O_5$	N	61.98	327.2173	328.2246	328.22497	-1.24	1.38E+07		*S. tetrandra* [20]
6.2	Plastoquinone 3	$C_{23}H_{32}O_2$	N	98.81	339.2299	340.2372	340.24023	-9.01	2.19E+08		*Spinacia oleracea* (family, Amaranthaceae) [60]
6.3	*N*-Cyclohexanecarbonylpentadecylamine	$C_{22}H_{43}NO$	P	113.83	338.3416	337.3343	337.33447	-0.39	1.17E+09	256.26349	*Senna siamea* Pods [61], *Polyporus umbellatus* [62]
6.4	Amarantholidoside IV	$C_{21}H_{38}O_8$	P	77.83	419.2633972	418.2561206	418.25667	-1.314	357744.79		*Amaranthus retroflexus* [63]
6.5	Carvone	$C_{10}H_{14}O$	P	85.91	151.1119385	150.1046619	150.10447	1.278	32232.64		*S. vermiculata* [64]
6.6	Chenopanone	$C_{10}H_{14}O_3$	N	11.78	181.087265	182.0945416	182.09429	1.382	962460.38		*Chenopodium ambrosioides* [65]
6.7	Chenopodiol	$C_{15}H_{26}O_2$	P	99.99	239.2001801	238.1929035	238.19328	-1.58	2116257.9		*Chenopodium*

											botrys [66]
6.8	6,11-Dihydroxy-3-eudesmen-2-one	$C_{15}H_{24}O_3$	P	62.70	253.1794739	252.1721973	252.17254	-1.359	5767135.8		*Chenopodium botrys* [67]

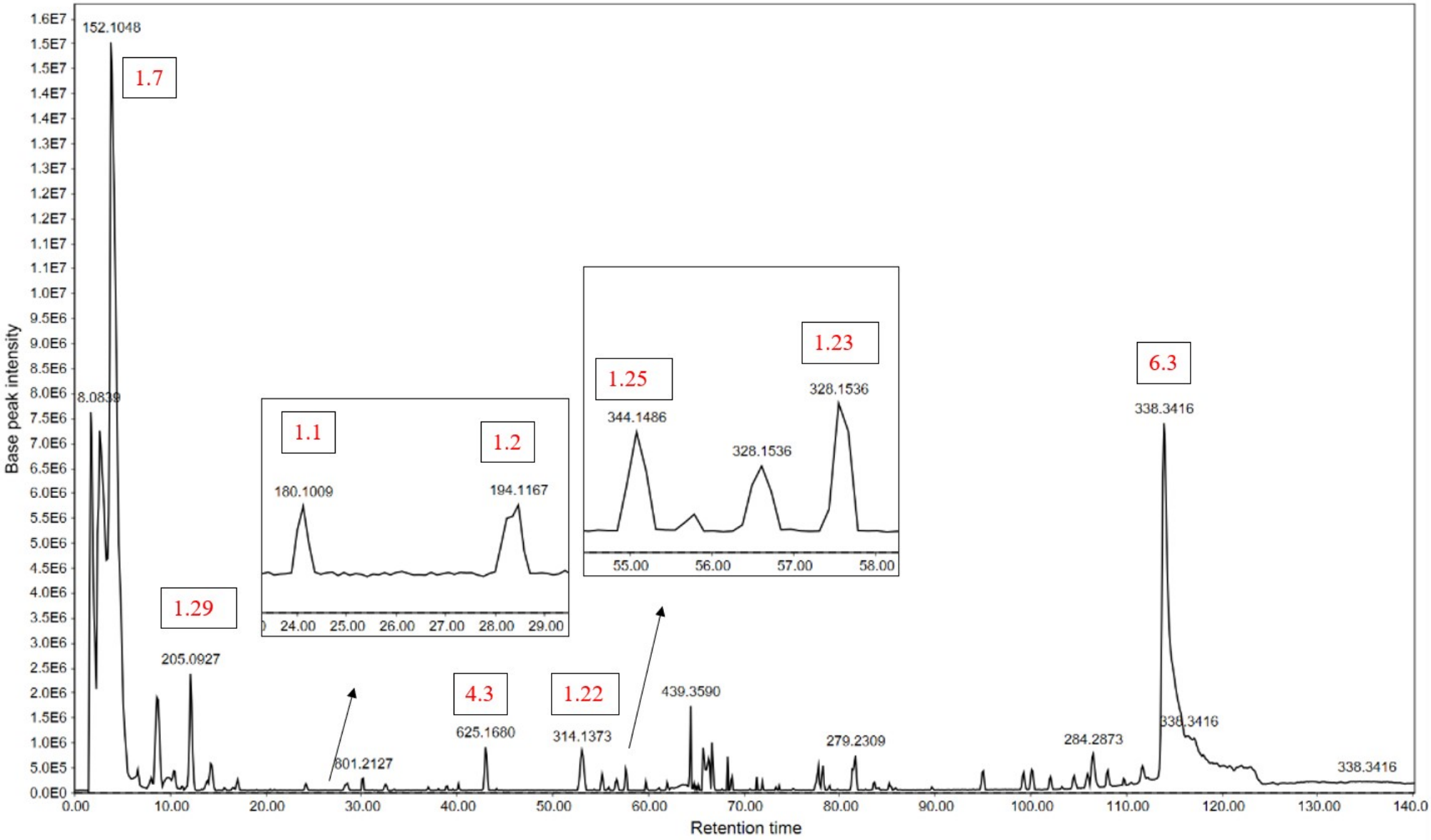


Figure S1. Total ion chromatogram (TIC) from LC/MS-Q-TOF analysis of the crude methanol extract of *Caroxylon volkensii* presenting the labels of the identified compounds in positive ESI ion mode.

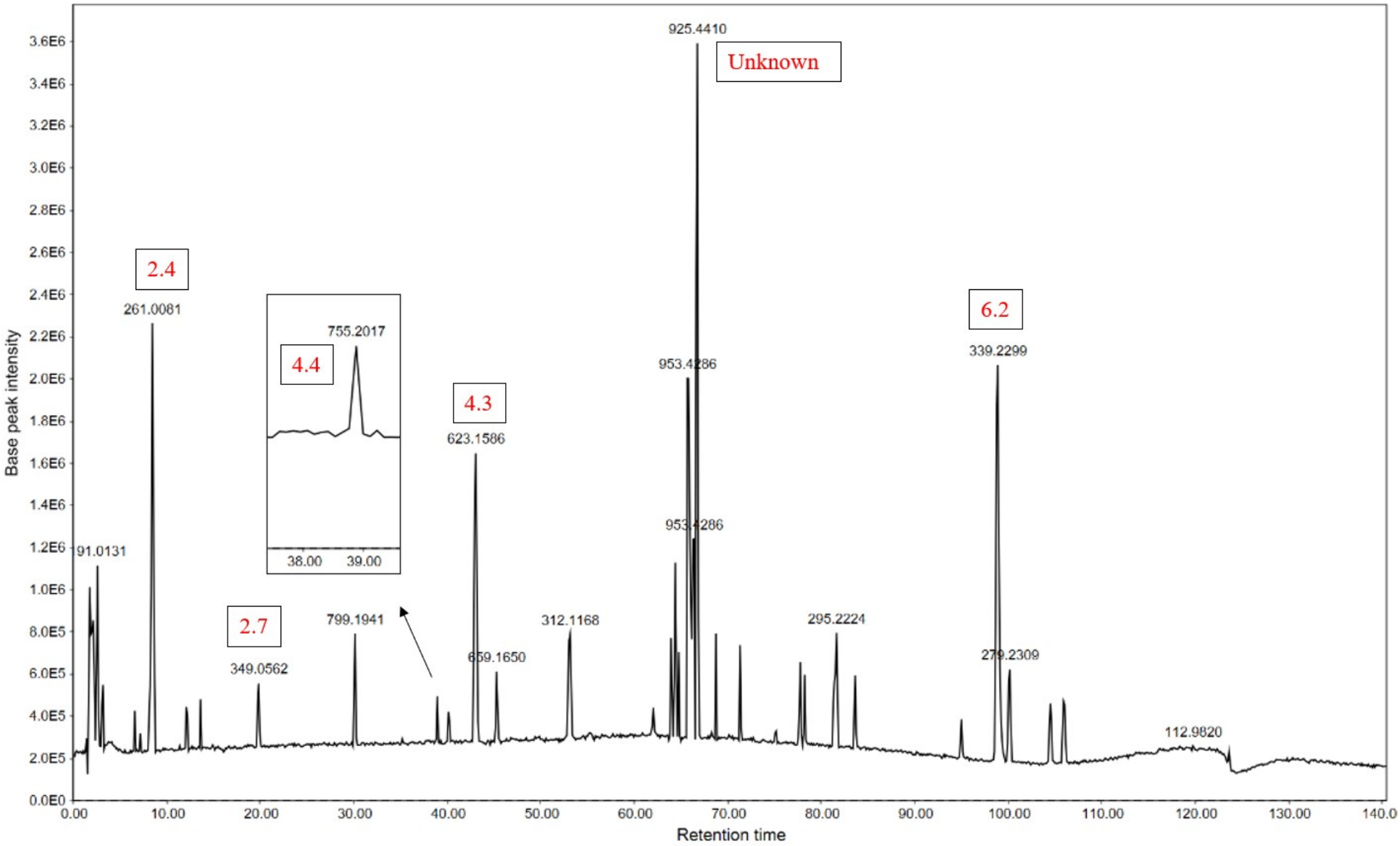


Figure S2. Total ion chromatogram (TIC) from LC/MS-Q-TOF analysis of the crude methanol extract of *Caroxylon volkensii* presenting the labels of the identified compounds in negative ESI ion mode.

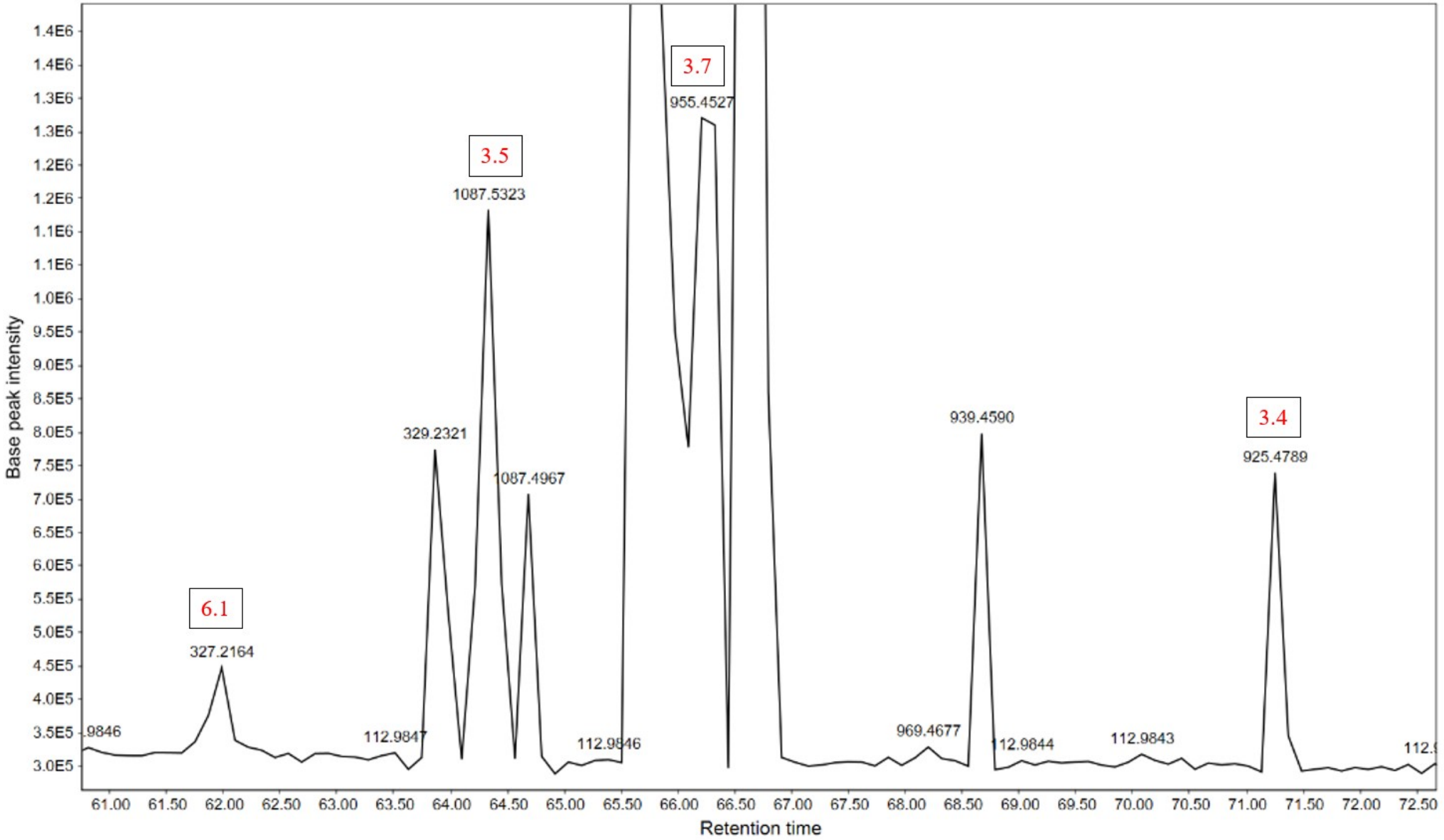


Figure S3. Total ion chromatogram (TIC) from LC/MS-Q-TOF analysis of the crude methanol extract of *Caroxylon volkensii* presenting the labels of the identified compounds in expanded view (R_t 61.0-72.5 min) in the negative ESI ion mode.

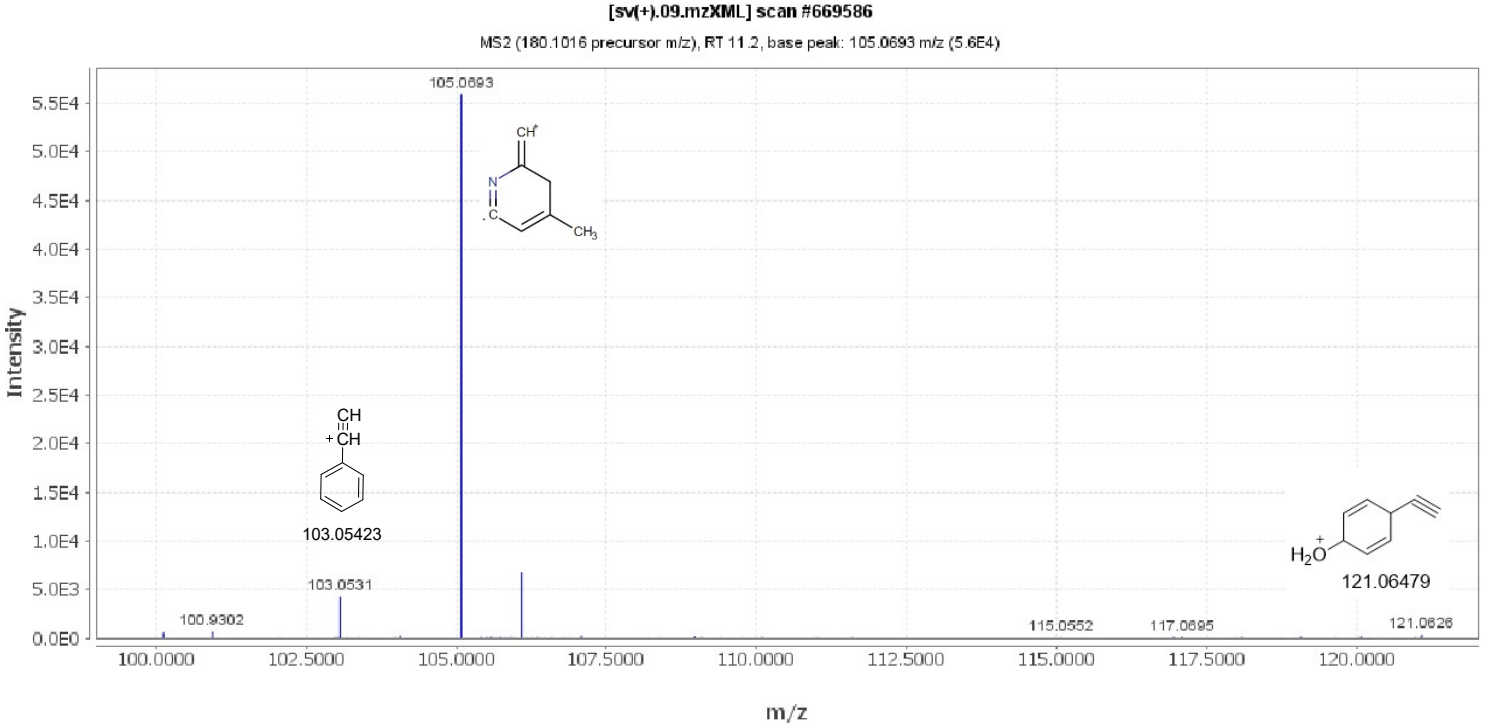


Figure S4. ESI-MS/MS spectrum of salsolinol (**1.1**).

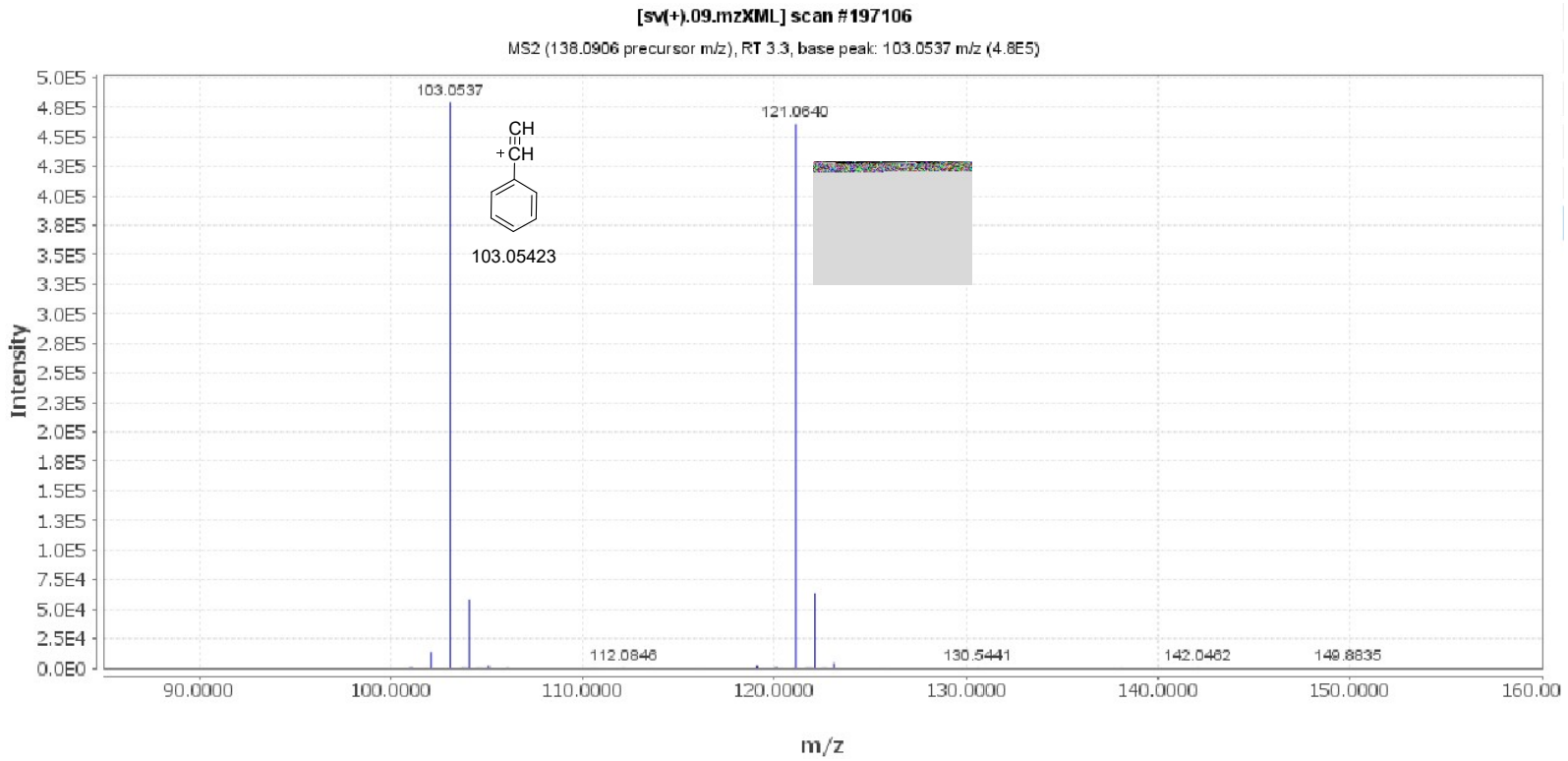


Figure S5. ESI-MS/MS spectrum of tyramine (**1.6**).

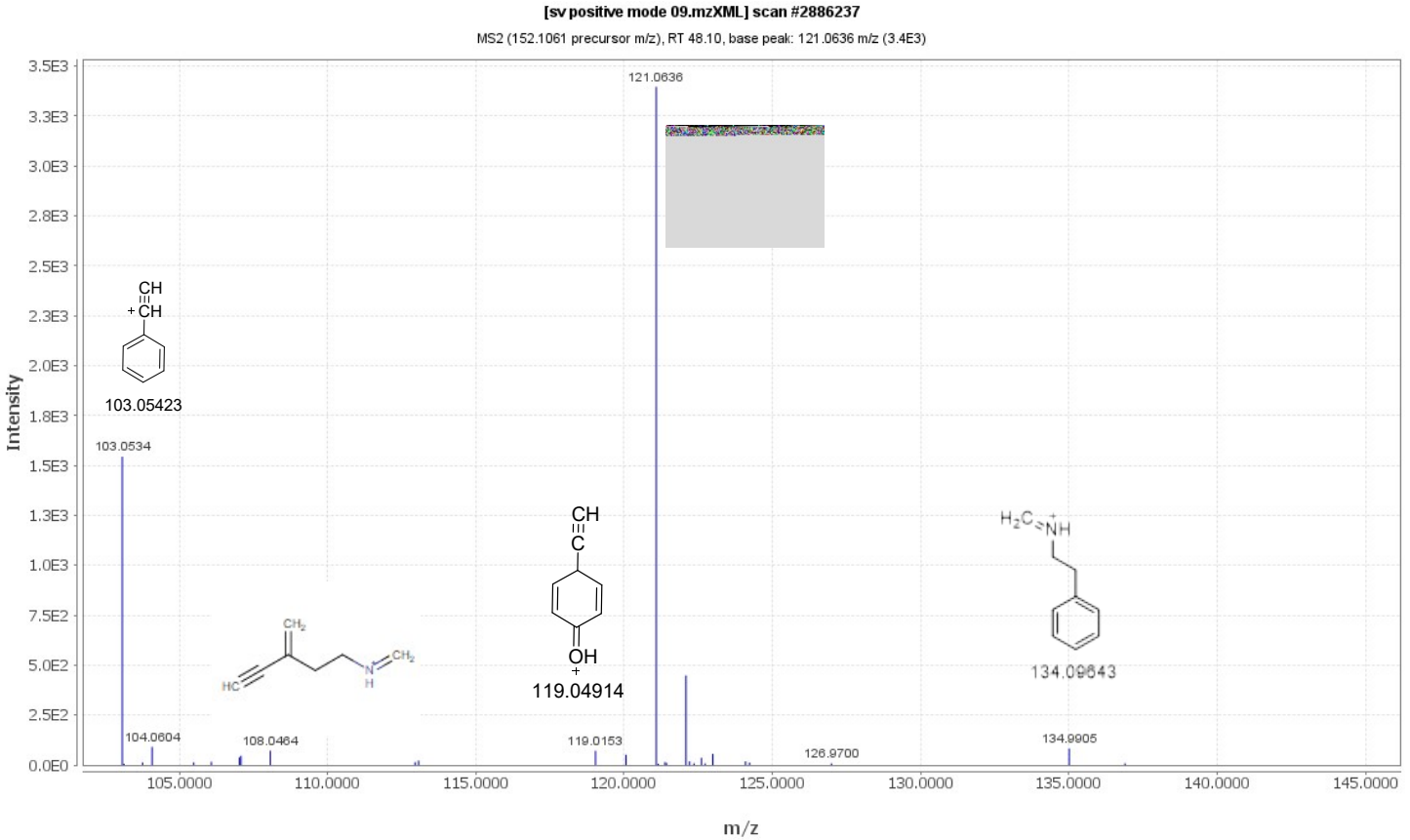


Figure S6. ESI-MS/MS spectrum of *N*-methyltyramine (**1.7**).

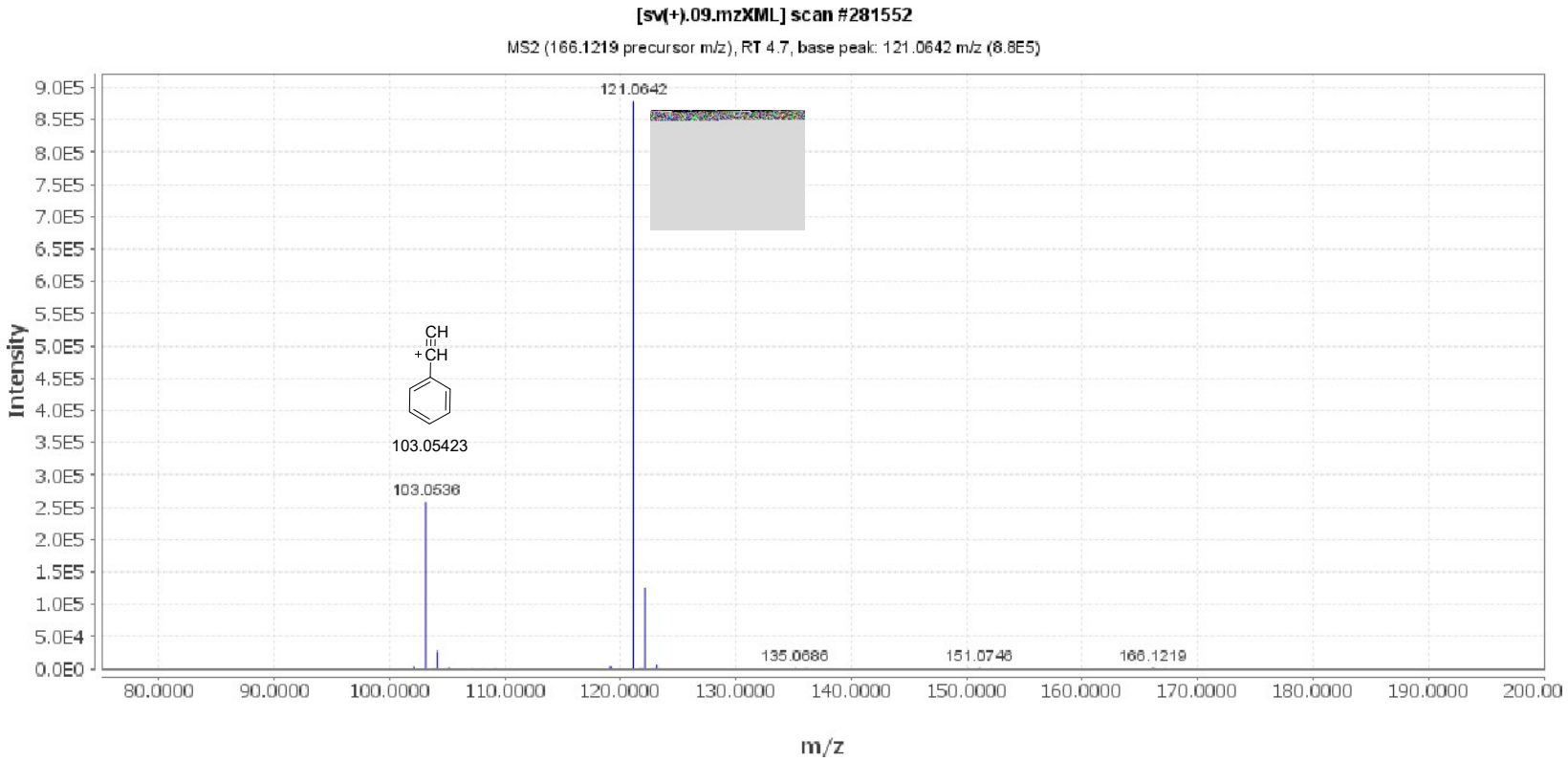


Figure S7. ESI-MS/MS spectrum of *N*,*N*-dimethyltyramine (hordenine) (**1.8**).

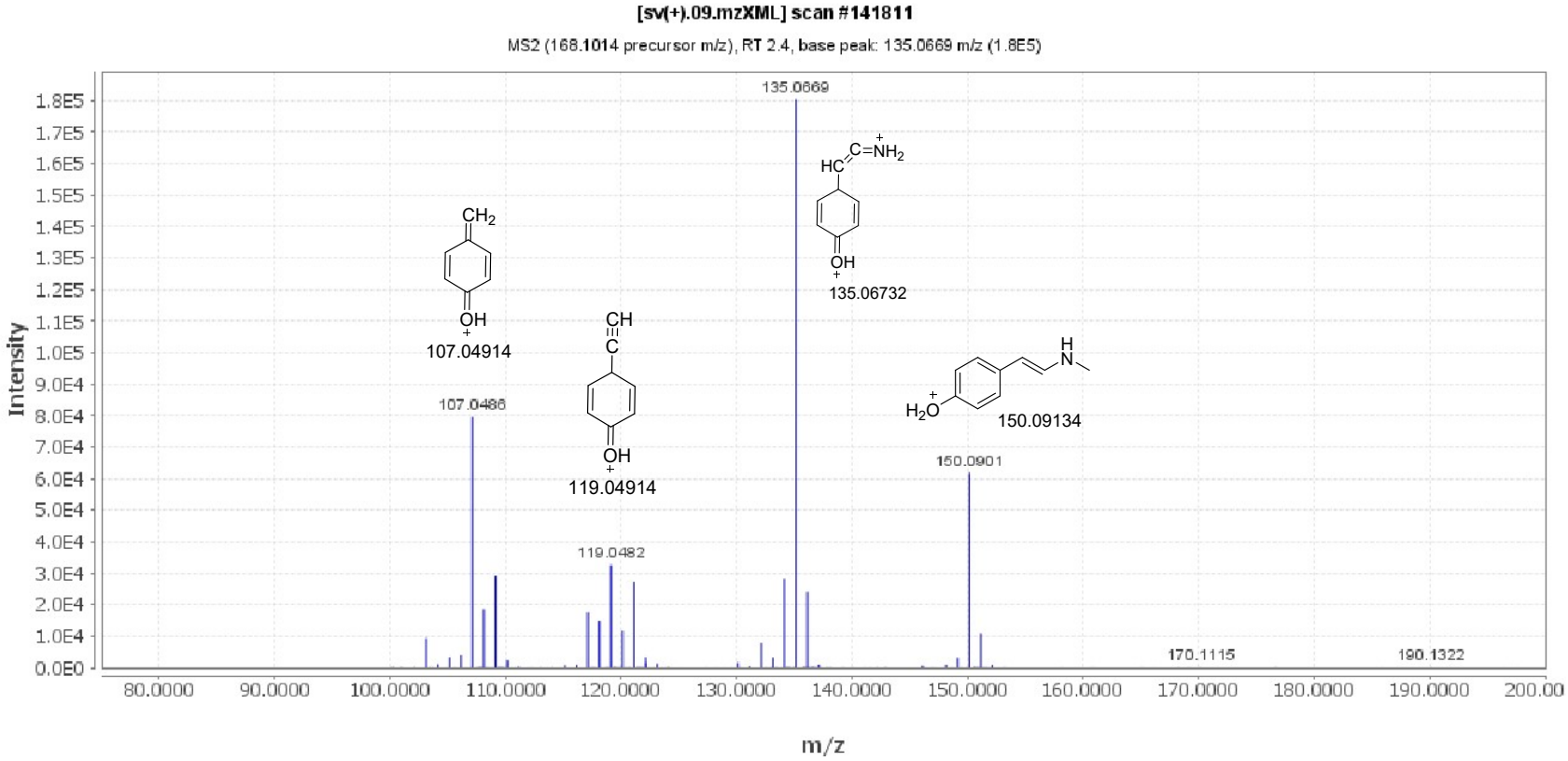


Figure S8. ESI-MS/MS spectrum of *N*-methyloctopamine (synephrine) (**1.10**).

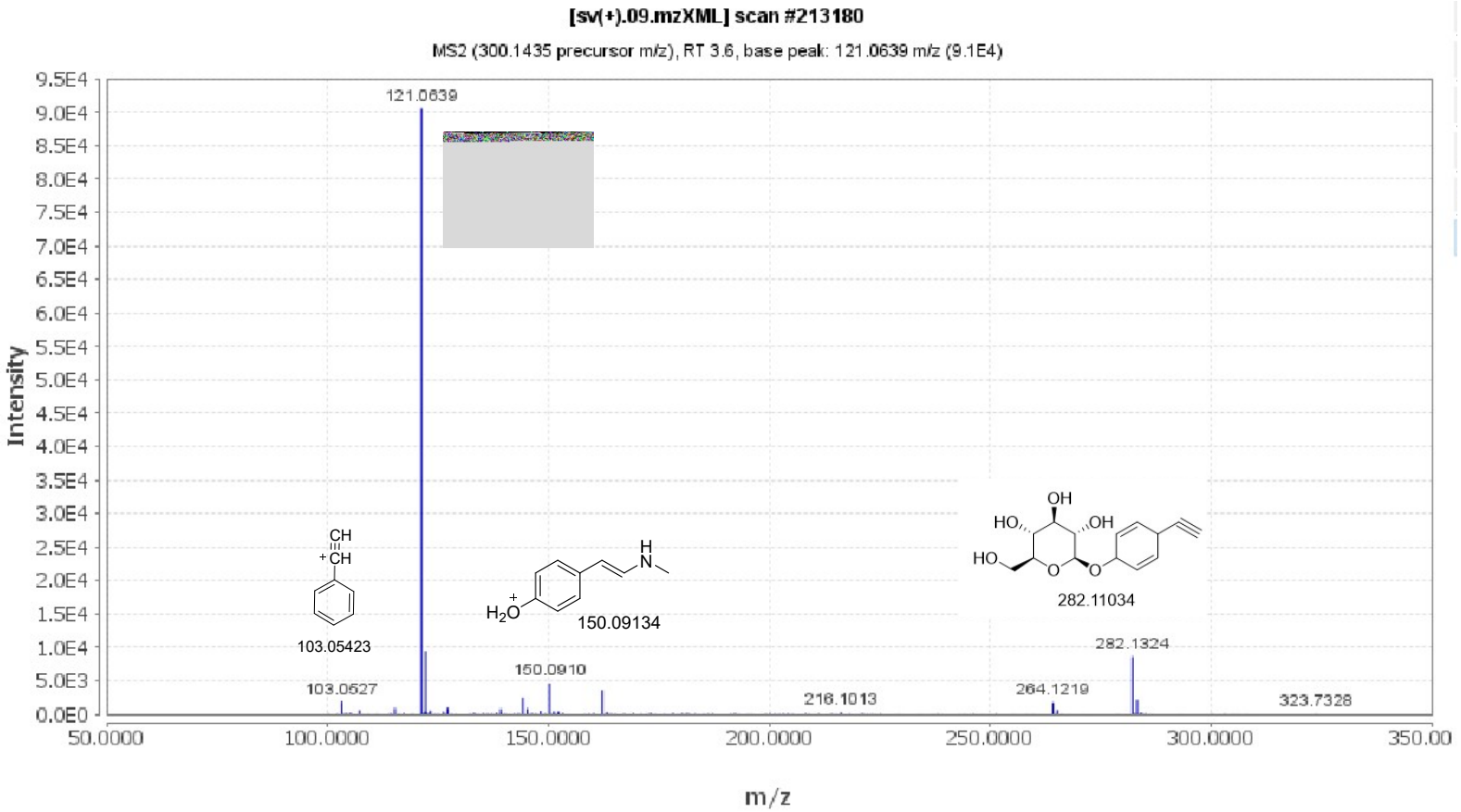


Figure S9. ESI-MS/MS spectrum of tyramine-*O*-*β*-D-glucoside (**1.11**).

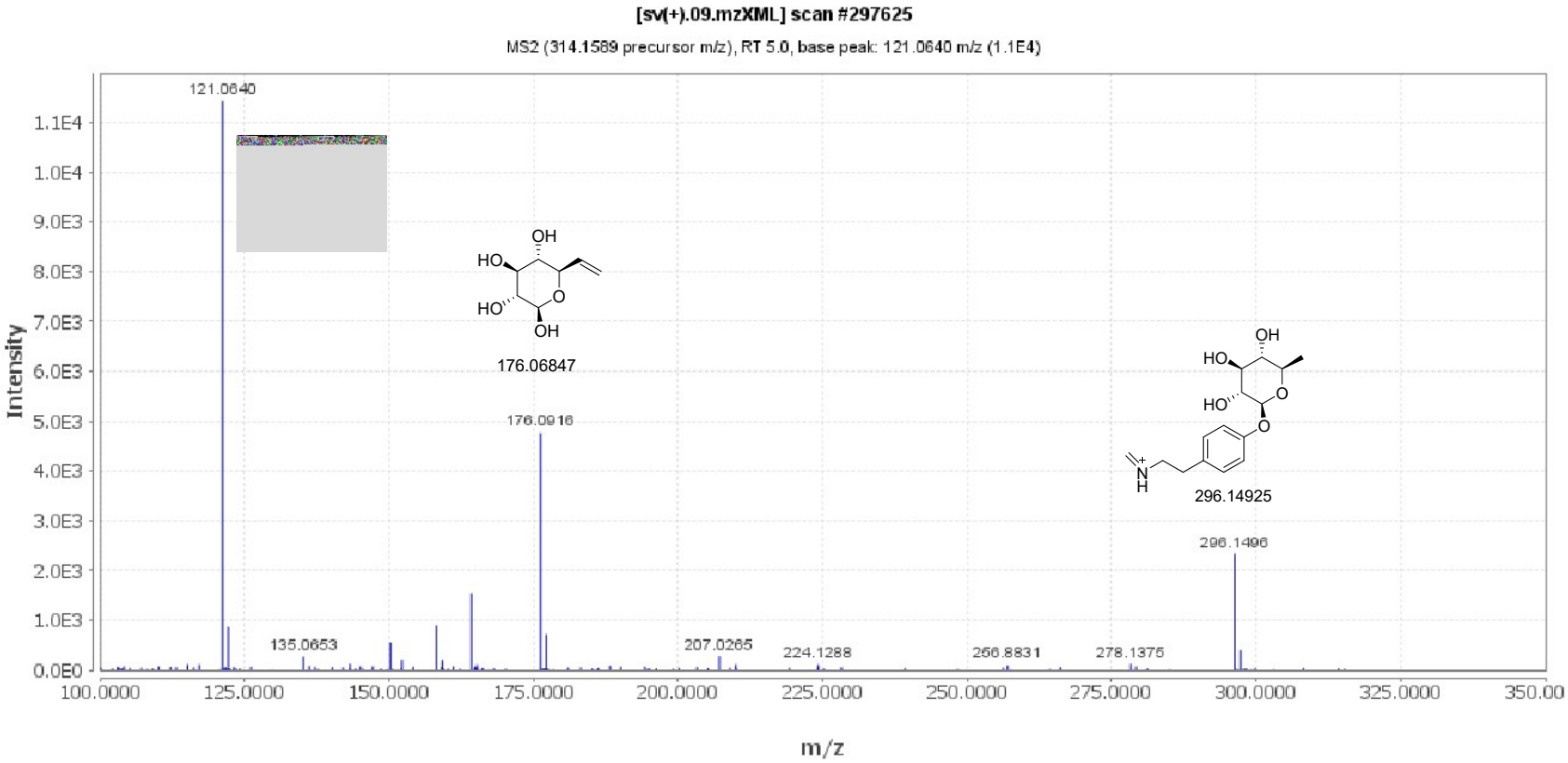


Figure S10. ESI-MS/MS spectrum of *N*-methyltyramine-*O*-*β*-D-glucoside (**1.12**).

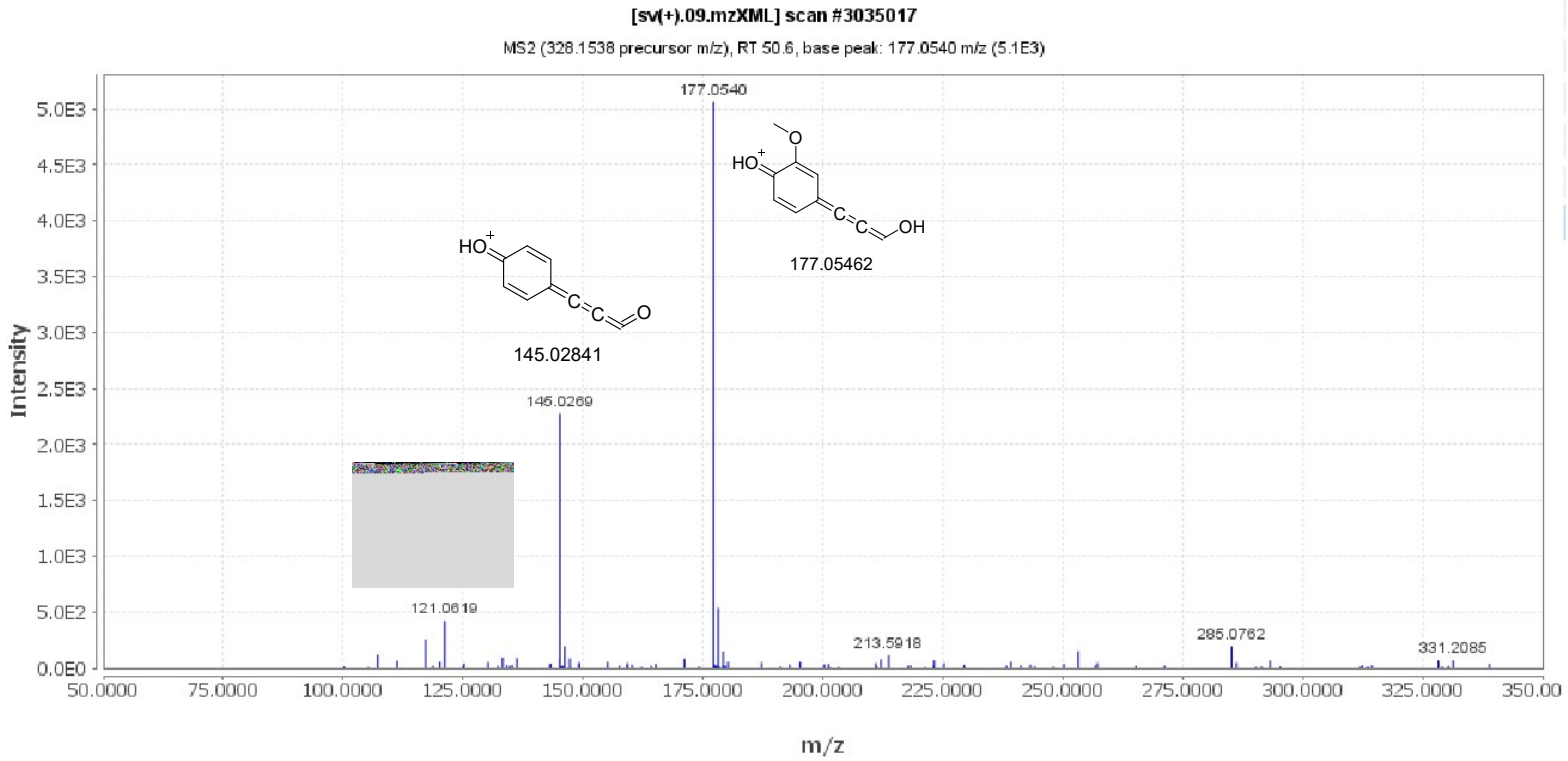


Figure S11. ESI-MS/MS spectrum of (*E*)-3-(4-hydroxy-3-methoxyphenyl)-*N*-(4-methoxyphenethyl)acrylamide (**1.23**).

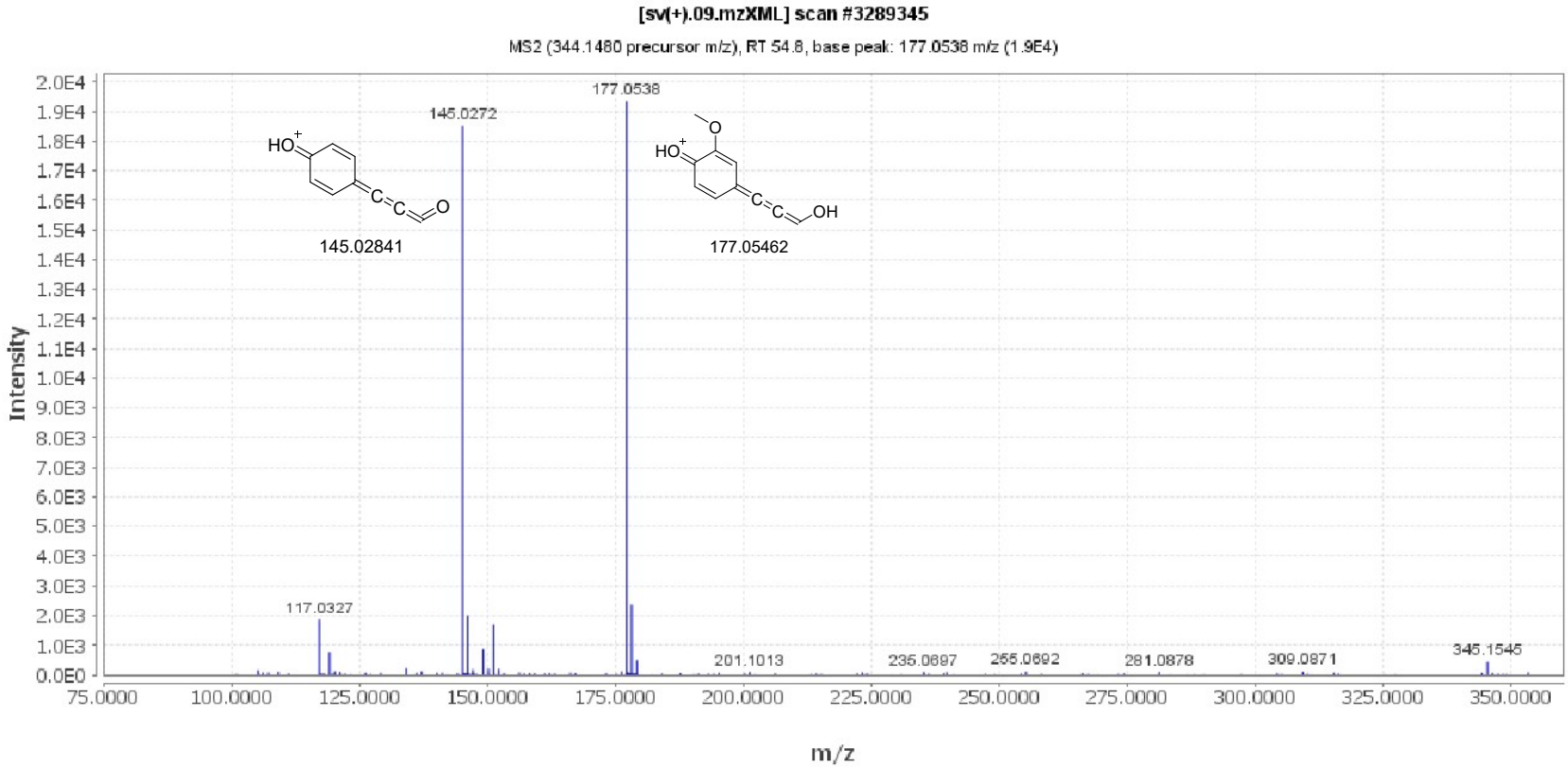


Figure S12. ESI-MS/MS spectrum of *N-trans*-feruloyl 3-*O*-methyldopamine (**1.25**).

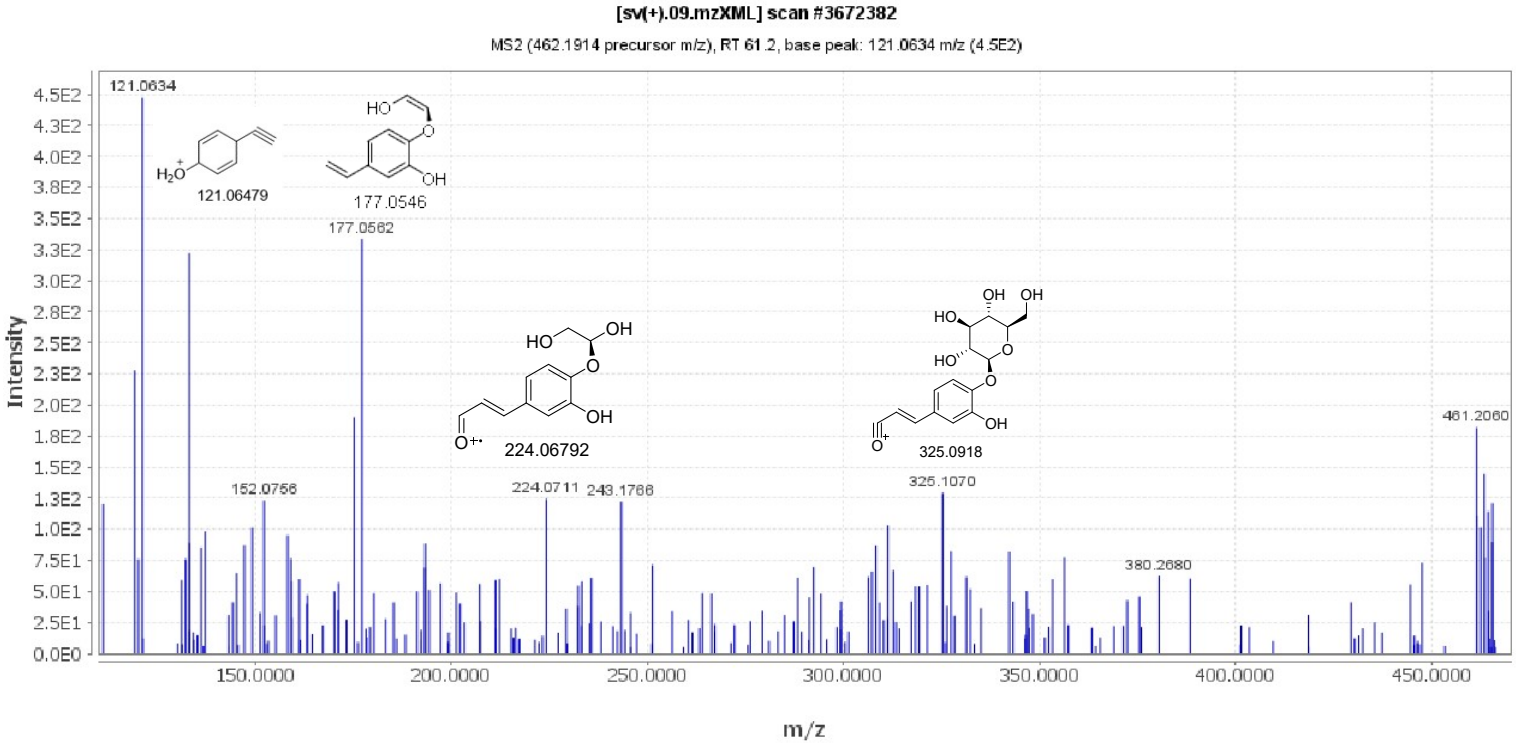


Figure S13. ESI-MS/MS spectrum of 4```-*O*-*β*-D-glucopyranosyl caffeoyltyramine (**1.27**).

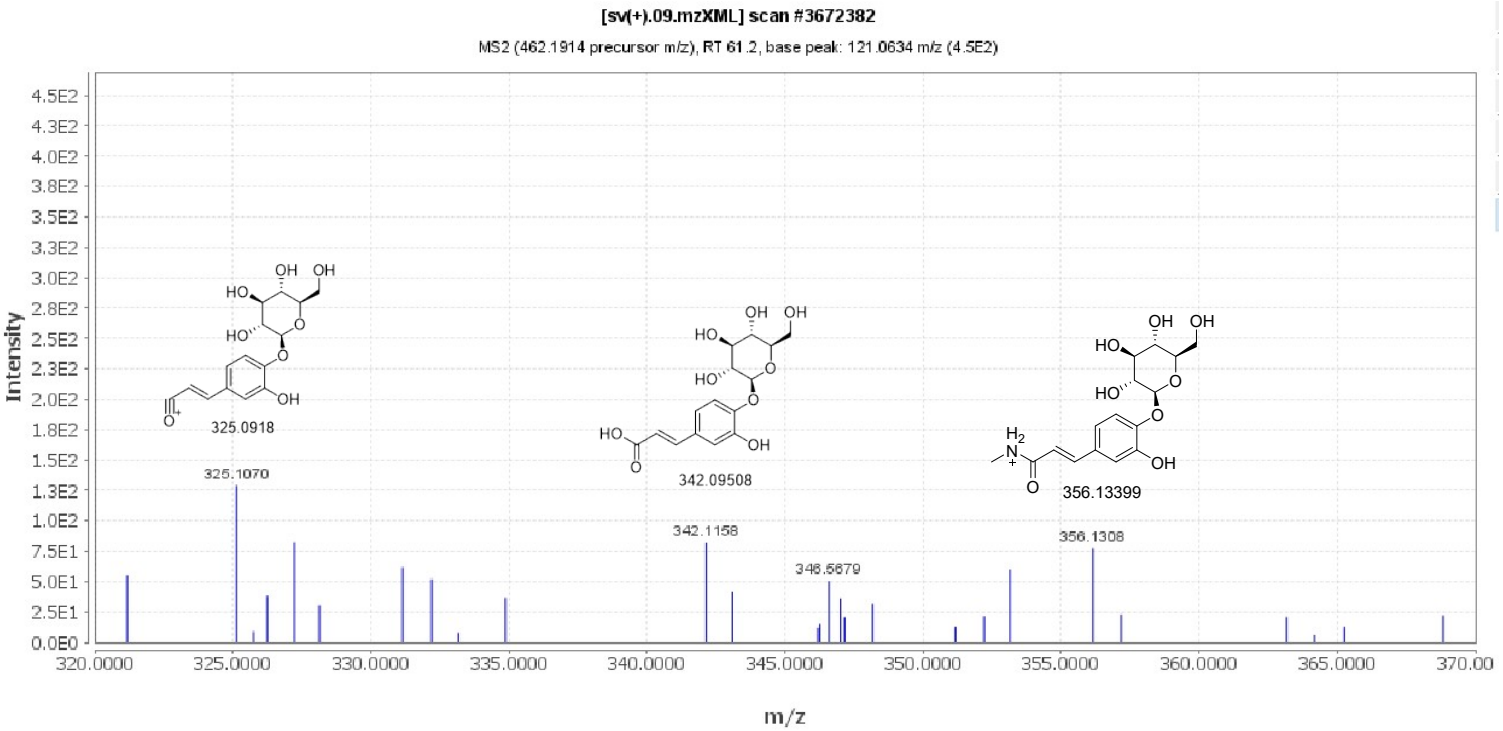


Figure S14. Expansion of ESI-MS/MS spectrum of 4```-*O*-*β*-D-glucopyranosyl caffeoyltyramine (**1.27**).

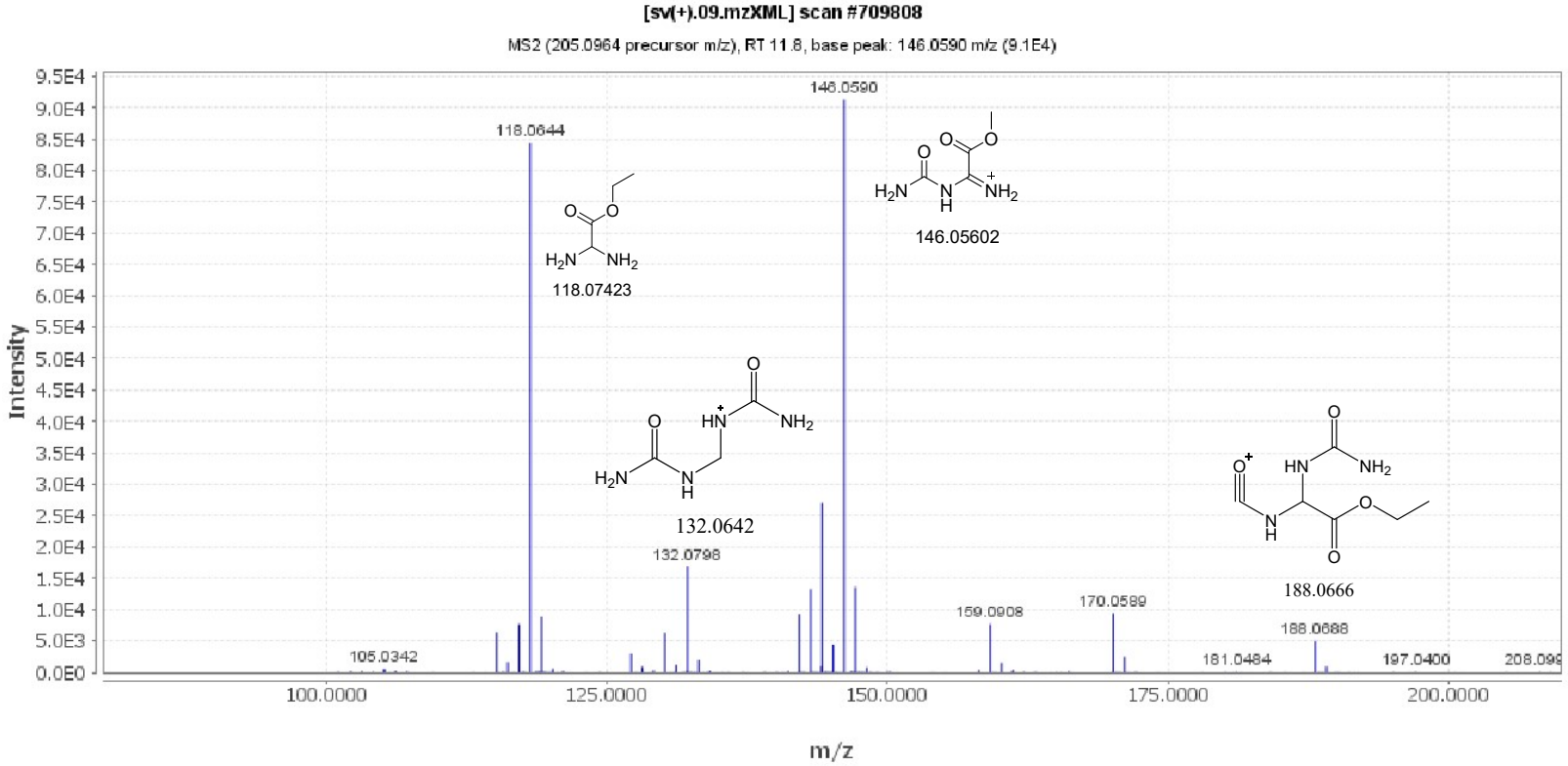


Figure S15. ESI-MS/MS spectrum of allantoic acid ethyl ester (**1.29**).

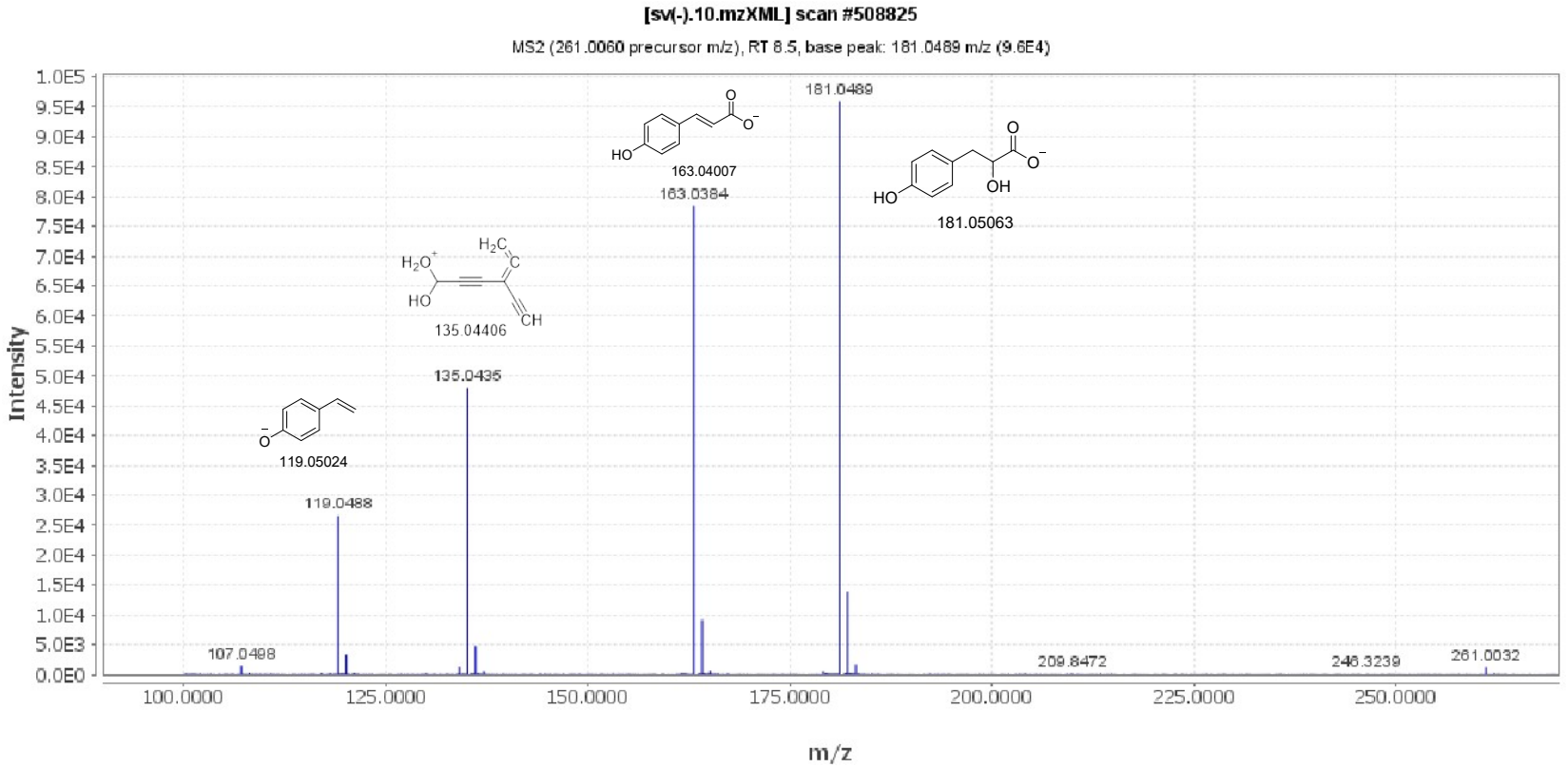


Figure S16. ESI-MS/MS spectrum of 3-(4-hydroxyphenyl)-2 (sulfooxy)propanoic acid (tichocarpol A) (**2.4**).

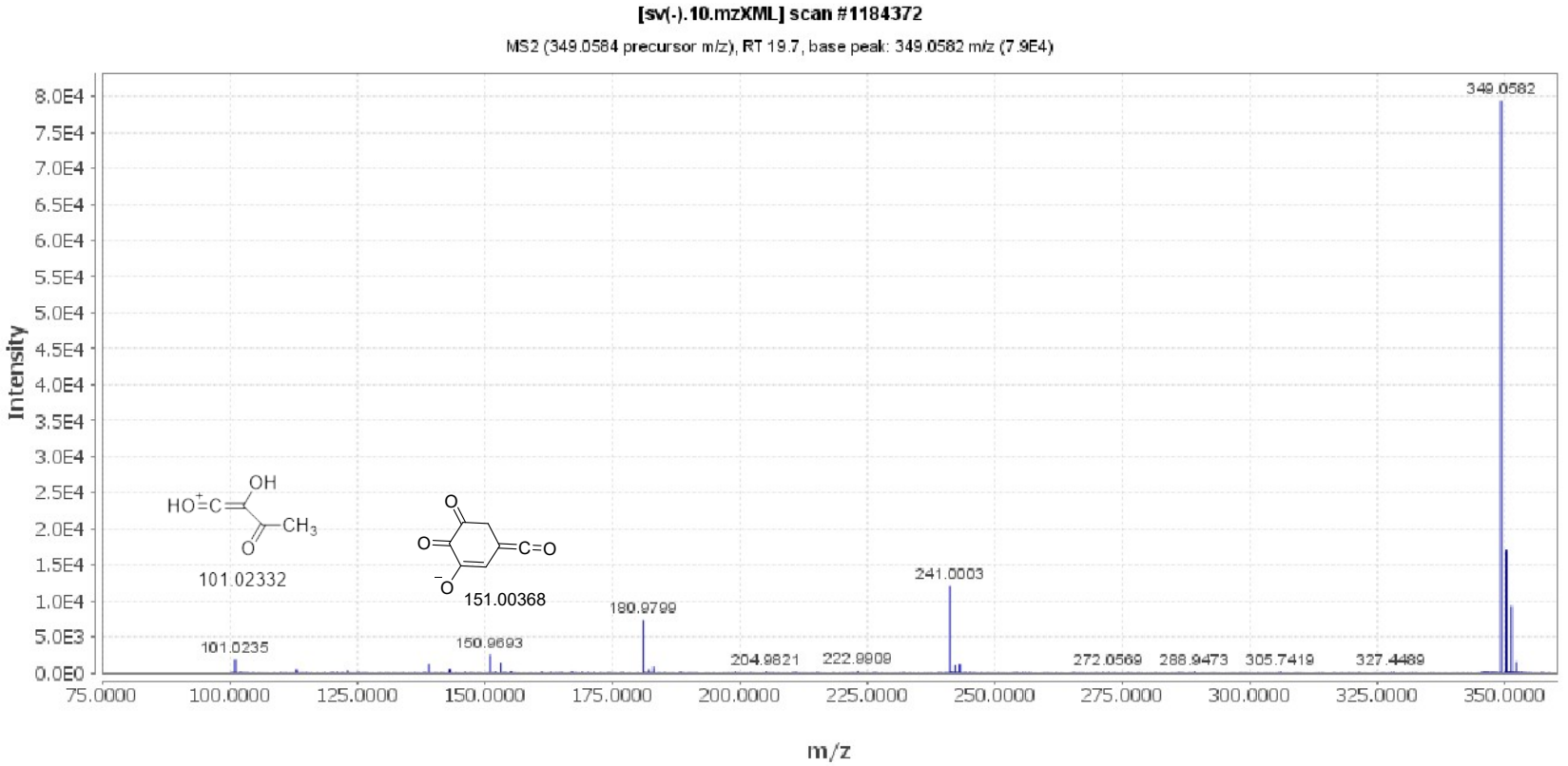


Figure S17. ESI-MS/MS spectrum of ethyl-*p*-digallate (**2.7**).

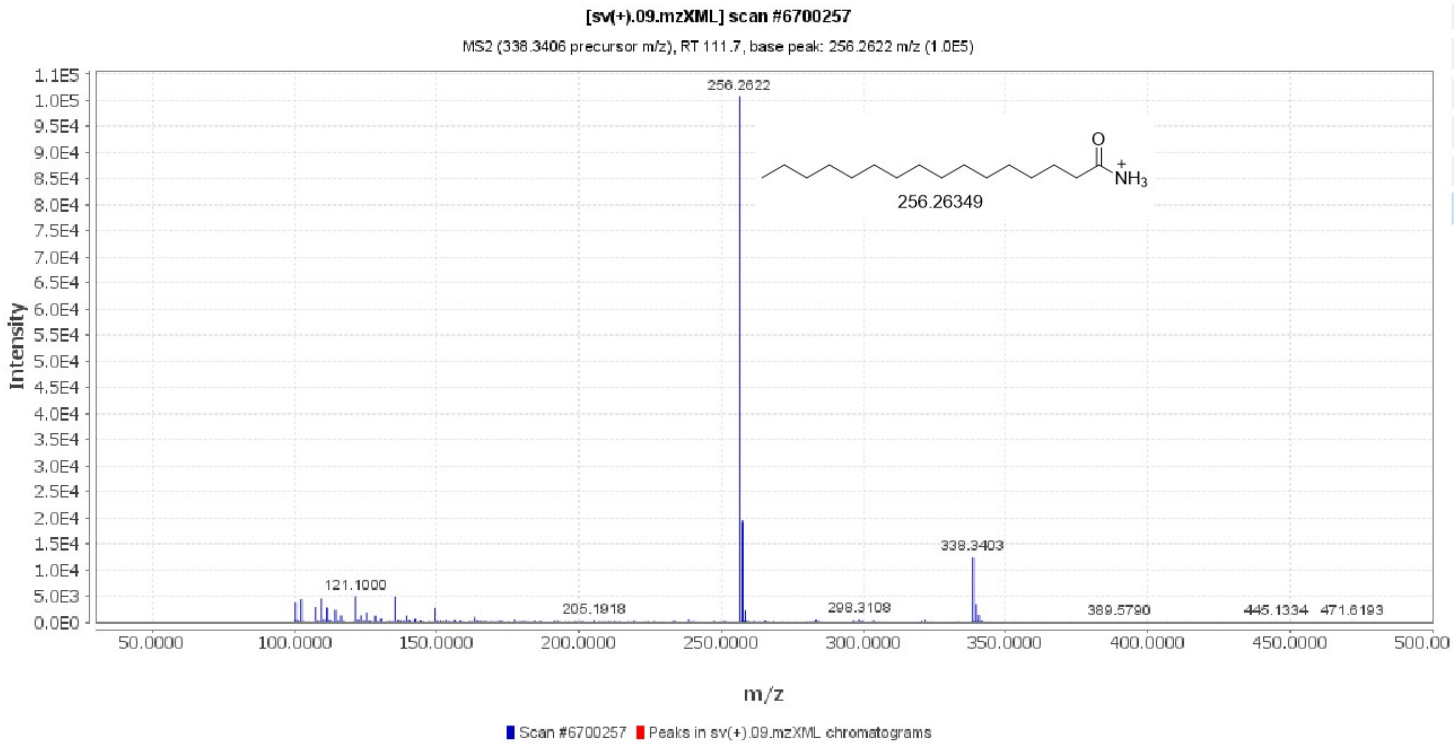


Figure S18. ESI-MS/MS spectrum of *N*-cyclohexanecarbonylpentadecylamine (**6.3**).

Docking study

Docking was done using AutoDock Vina 1.2.3 [68, 69]. The crystal structure for the transcriptional activator receptor (*Las*R, PDB code: 2UV0) was downloaded from the RCSB protein data bank in PDB format. The protein and the structures of the ligands were prepared for the docking study with the help of AutoDock Tools. *Las*R binding site coordinates were determined using a grid box around the co-crystallized autoinducer, 3-oxoC12-acylhomoserine lactone[70]. A grid box with the dimensions of 30 × 30 × 30 and spacing of 0.375 Å with X, Y, and Z coordinates of 23.997, 16.050, and 80.315, respectively, was used. The docking process was validated by removing the co-crystallized ligand and redocking it into the active site using AutoDock Vina. Subsequently, the root mean square deviation (RMSD) value of the re-docked ligand superimposition to the co-crystallized ligand was determined using PyMOL to be of 0.576 Å (Figure S16). Docking poses with the least RMSD values were visualized in both 3D style using PyMOL software [71] and 2D style using PoseView [72].

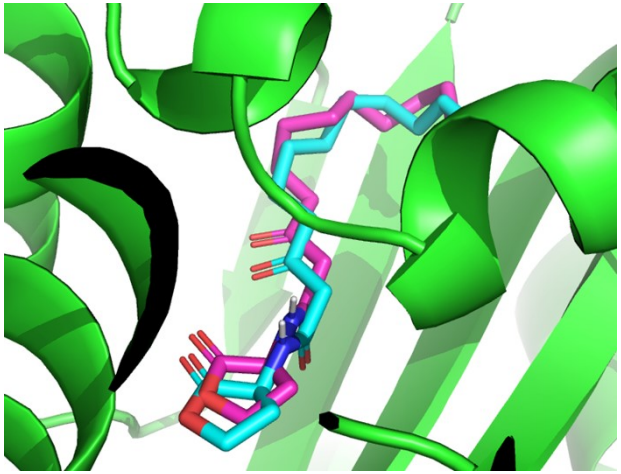
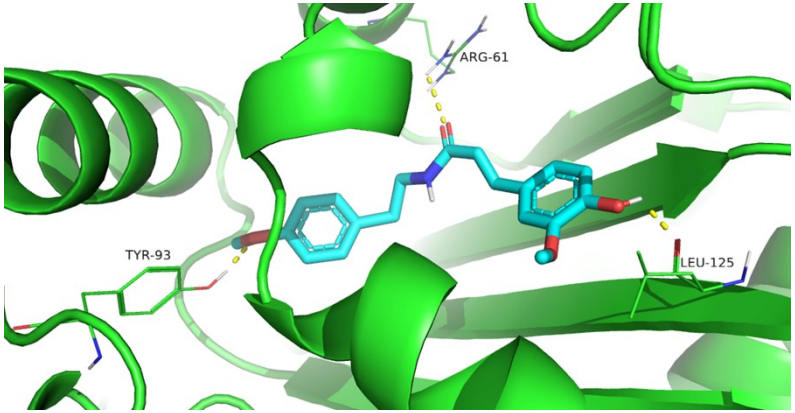
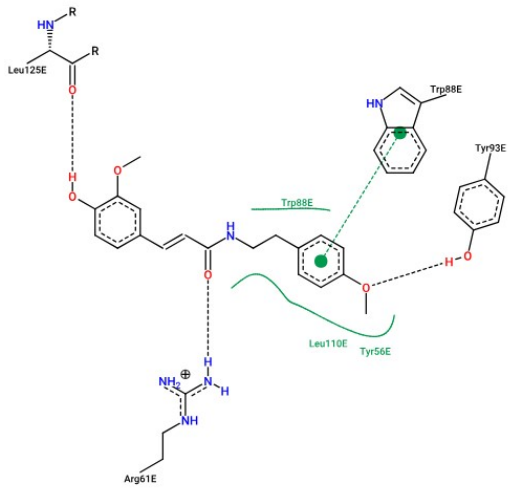


Figure S19. Docking validation of the co-crystallized ligand, 3-oxo-C12 acylhomoserine lactone (AHL, cyan), and the redocked ligand (pink) showing an RMSD value of 0.576 Å.

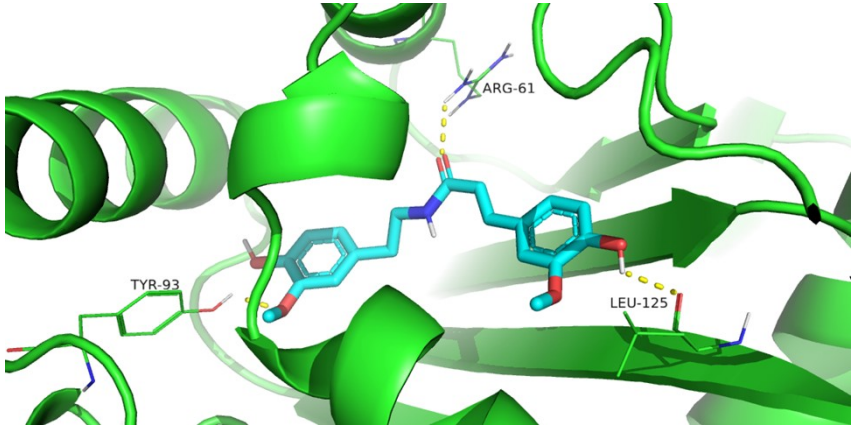
A.


ARG-61
TYR-93
LEU-125

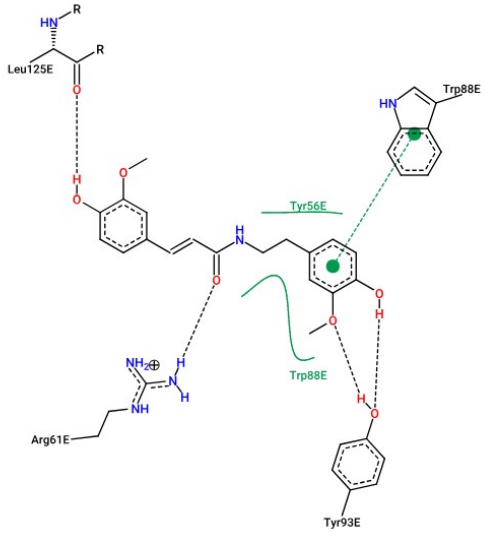
B.


Leu125E
Trp88E
Tyr93E
Trp88E
Leu110E
Tyr56E
Arg61E

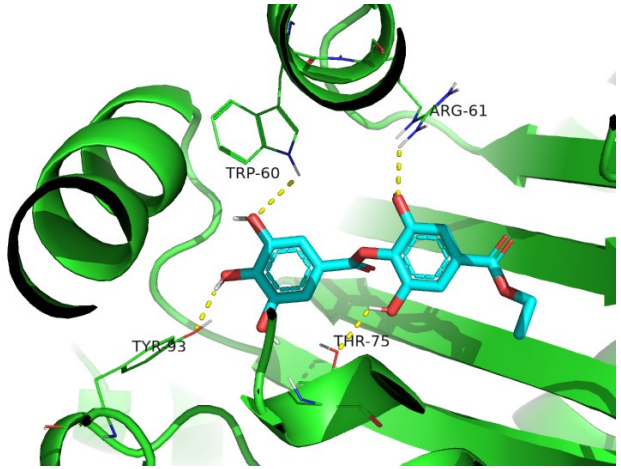
C.


ARG-61
TYR-93
LEU-125

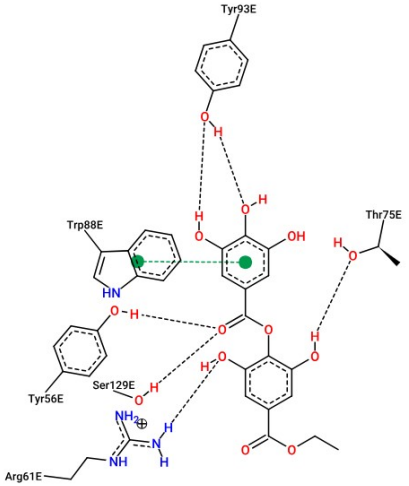
D.


Leu125E
Trp88E
Tyr56E
Trp88E
Arg61E
Tyr93E

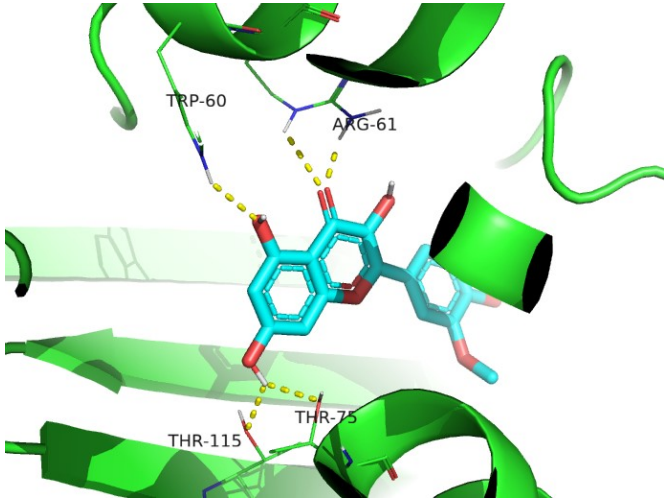
E.



F.



G.



H.

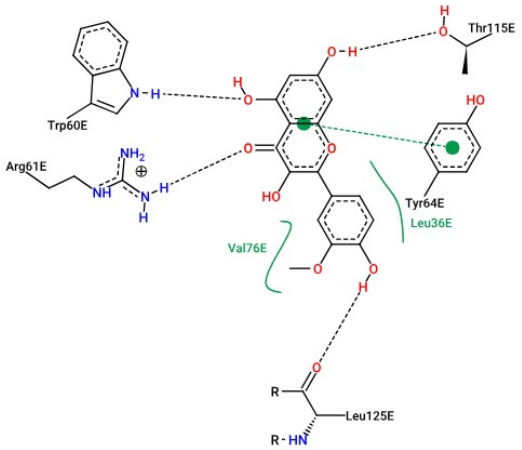


Figure S20. Molecular binding to the transcriptional activator receptor (*Las*R, PDB code: 2UV0) visualized in both 3D and 2D forms for compounds: (*E*)-3-(4-hydroxy-3-methoxyphenyl)-*N*-(4-methoxyphenethyl)acrylamide (**1.23**) (A and B); *N-trans*-feruloyl 3-*O*-methyldopamine (**1.25** (C and D); ethyl-*p*-digallate (**2.7**) (E and F); isorhamnetin (**4.1**) (G and H) demonstrating *Las*R amino acid residues involved in the interaction.

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