



Figure S1: (A) The FTIR spectrum between fresh garlic and black garlic. **(B)** The QTOF chromatogram of fresh garlic and black garlic sample.

14	gamma-Glutamyl-S-(1-propenyl)cysteine sulfoxide	C ₁₁ H ₁₈ N ₂ O ₆ S	1.17	307.10	4,031,678.00	0.00	0.00	0.00	0.00	0	0
15	gamma-L-Glutamyl-S-(2-carboxy-1-propyl)cysteinylglycine	C ₁₄ H ₂₃ N ₃ O ₈ S	3.56	394.13	11,984,540.00	1,062,240.00	1,865,388.00	2,736,645.00	1,283,113.00	470,411.00	400,128.00
16	N-gamma-Glutamyl-S-allylcysteine	C ₁₁ H ₁₈ N ₂ O ₅ S	3.82	291.10	69,655,308.00	24,536,766.00	27,896,175.00	23,439,749.00	5,449,319.00	2,769,807.00	2,471,941.00
17	Allicin	C ₆ H ₁₀ OS ₂	4.39	163.03	3,115,817.00	0.00	0.00	0.00	0.00	0.00	0.00
18	S-Allyl cysteine	C ₆ H ₁₁ NO ₂ S	1.95	162.06	0.00	15,271,973.00	15,446,809.00	20,950,972.00	19,769,474.00	21,634,812.00	21,467,241.00
Antioxidant compounds											
19	Zinolol	C ₁₄ H ₂₁ NO ₈	1.37	332.14	13,794,656.00	0.00	0.00	0.00	0.00	0.00	0.00
20	Niazirin	C ₁₅ H ₂₁ NO ₆ S	5.09	343.40	5,868,900.00	0.00	0.00	0.00	0.00	0.00	0.00
21	Lancerin	C ₁₉ H ₁₈ O ₁₀	8.30	406.30	950,926.00	0.00	0.00	0.00	0.00	0.00	0.00
22	Blancoxanthone	C ₂₃ H ₂₂ O ₅	4.00	379.15	1,945,972.00	0.00	0.00	0.00	0.00	0.00	0.00
23	Cyclodopa glucoside	C ₁₅ H ₁₉ NO ₉	3.99	357.31	2,426,257.00	0.00	0.00	0.00	0.00	0.00	0.00
24	Oleuropein	C ₂₅ H ₃₂ O ₁₃	4.3.00	540.18	1,408,262.00	0.00	0.00	0.00	0.00	0.00	0.00
25	Sakuranetin	C ₁₆ H ₁₄ O ₅	4.83	309.07	960,001.00	0.00	0.00	0.00	0.00	0.00	0.00
26	Eusiderin	C ₂₂ H ₂₆ O ₆	4.89	387.18	1,529,458.00	556,981.00	753,094.00	1,023,517.00	1,614,853.00	1,649,028.00	969,628.00
27	Phellamurin	C ₂₆ H ₃₀ O ₁₁	4.35	541.17	0.00	2,908,150.00	3,417,597.00	1,571,634.00	1,622,727.00	2,471,277.00	2,310,401.00
28	Phenyl salicylate	C ₁₃ H ₁₀ O ₃	4.40	232.10	0.00	7,333,264.00	9,036,029.00	7,030,611.00	12,345,561.00	18,577,653.00	17,841,342.00
29	Allixin	C ₁₂ H ₁₈ O ₄	5.11	239.34	0.00	28,536,221.00	33,271,003.00	24,711,530.00	37,398,140.00	34,713,471.00	37,804,448.00
30	Myristicanol A	C ₂₃ H ₃₀ O ₈	3.87	434.19	0.00	1,133,203.00	735,751.00	1,028,723.00	2,277,254.00	2,139,501.00	2,035,688.00

Other compounds

31	Levofuraltadone	C ₁₃ H ₁₆ N ₄ O ₆	6.45	324.29	0.00	2,097,343.00	2,053,851.00	1,911,046.00	1,481,402.00	4,575,546.00	2,454,748.00
32	Pyroglutamic acid	C ₅ H ₇ NO ₃	1.23	130.05	0.00	10,279,038.00	12,632,978.00	16,456,389.00	18,628,514.00	18,832,791.00	19,447,628.00
33	Aminonucleoside	C ₁₂ H ₁₈ N ₆ O ₃	5.08	294.31	0.00	2,265,267.00	19,404,596.00	3,213,917.00	2,609,179.00	10,642,075.00	11,864,887.00
34	2,2-Dimethyl-8-prenylchromene 6-carboxylic acid	C ₁₇ H ₂₀ O ₃	3.93	272.14	0.00	13,503,039.00	16,791,072.00	14,565,021.00	13,694,142.00	13,740,268.00	13,372,662.00
35	2-Phosphono-1,7-heptanedicarboxylic acid	C ₉ H ₁₇ O ₇ P	4.43	286.11	0.00	855,234.00	2,532,202.00	2,238,545.00	4,238,853.00	7,694,301.00	8,367,699.00
36	jasmonic acid	C ₁₂ H ₁₈ O ₃	5.12	323.28	0.00	744,461.00	1,069,483.00	735,486.00	4,306,117.00	962,031.00	672,279.00
37	3-Methyl-5-pentyl-2-furannonanoic acid	C ₁₉ H ₃₂ O ₃	6.47	308.24	0.00	0.00	0.00	0.00	978,657.00	2,734,071.00	3,557,855.00
38	2'-Deoxymugineic acid	C ₁₂ H ₂₀ N ₂ O ₇	1.02	304.13	0.00	0.00	0.00	0.00	0.00	1,816,225.00	2,822,766.00
39	alpha-(p-Methoxyphenyl)-6-methyl-2-pyridineacrylic acid	C ₁₆ H ₁₅ NO	4.55	270.11	0.00	0.00	0.00	0.00	0.00	601,744.00	981,476.00

^a m/z value (mass-to-charge ratio). BG1; BG2; BG3; BG4; BG5 and BG6 were processed from WG with different iMC (BG1, BG2, BG3, BG4, BG5 and BG6 with 72.59%, 69.12%, 58.49%, 51.05% 50.87% and 49.77%, respectively).