

Table S1: Descriptions of identified UFAO-derived compounds during drying in Thompson seedless grape.

S.No	CAS #	RI	Final Compound Name	ID-M	Ion (m/z)	Source	OTV (µg/L)	Aromatic series	Precursor
Unsaturated Fatty Acid									
1	110-62-3	975	Pentanal	2	44	Aldehyde	12 ^{1,5}	Fat, Green ^g	Linoleic acid, Arachidonic acid ^E
2	66-25-1	1066	Hexanal	1	44	Aldehyde	4.53 ⁵	Green ^g	Linoleic acid ^E
3	111-71-7	1178	Heptanal	2	44	Aldehyde	3 ^{1,5}	Dry fish, solvent, smoky ^g	Linoleic acid ^{D,E} , Oleic acid ^E
4	124-13-0	1292	Octanal	1	43	Aldehyde	0.7 ^{1,5}	Honey, Green, Fatty ^g	Oleic acid
5	124-19-6	1393	Nonanal	1	57	Aldehyde	1 ^{1,5}	Green, Fruity ^g	Linoleic acid ^B
6	112-31-2	1501	Decanal	1	43	Aldehyde	0.1 ¹	Sweet, citrus, green ^e	Oleic acid ^{D,E}
7	505-57-7	1217	(E)-2-Hexenal	1	41	Aldehyde	17 ^{1,5}	Green ^g	Linoleic acid ^{D,E}
8	2463-63-0	1325	(E)-2-Heptenal	2	41	Aldehyde	13 ^{1,5}	Fatty, soapy, tallow ^g	Linoleic acid ^{D,E}
9	2548-87-0	1434	(E)-2-Octenal	2	41	Aldehyde	3 ¹	Green, fatty, nut ^g	Linoleic acid, Linolenic acid ^{A, E}
10	18829-56-6	1539	(E)-2-Nonenal	2	43	Aldehyde	0.08 ¹	Green, fat ^a	Linoleic acid ^{D,E}
11	4313--03-5	1497	(E,E)-2,4-Heptadienal	2	81	Aldehyde	49 ²	Fatty, hay ^b	Linolenic acid ^E
12	5910-87-2	1750	(E,E)-2,4-Nonadienal	2	81	Aldehyde	0.09 ¹	Fatty, oily ^b	Linoleic acid ^{D,E}
13	74-41-0	1205	1-Pentanol	2	52	Alcohol	4000 ¹	Balsamic, almond ^c	Methyl linoleic acid ^C
14	111-27-3	1349	1-Hexanol	2	56	Alcohol	2500 ¹	green ^b	Methyl linoleic acid ^C
15	111-70-6	1453	1-Heptanol	2	70	Alcohol	1000 ^{1,3}	Grape, sweet ^c	Oleic acid ^A
16	111-87-5	1555	1-Octanol	1	56	Alcohol	130 ^{1,2}	Citrus, rose ^c	Methyl Oleate ^B
17	143-08-8	1657	1-Nonanol	1	56	Alcohol	50 ¹	Floral ^b	NF
18	3391-86-4	1449	1-Octen-3-ol	1	57	Alcohol	3 ^{1,5}	Mushroom, fruity ^{b, g}	Arachidonic acid ^D , Linoleic acid ^A
19	104-76-7	1487	2-Ethyl-1-hexanol	1	57	Alcohol	270000 ¹	Floral, sweet fruity ^c	NF
20	123-96-6	1411	2-Octanol	2	45	Alcohol	NF	Mushroom, fat ^a	NF
21	18409-17-1	1614	(E)-2-Octen-1-ol	2	57	Alcohol	18 ³	Fatty, rancid ^b	Oleic acid ^A
22	628-99-9	1488	2-Nonanol	2	45	Alcohol	58 ²	Fruity, green ^{d, f}	NF
23	928-96-1	1395	(Z)-3-Hexen-1-ol	2	67	Alcohol	100 ^{1,3}	Fruity, green ^b	NF
24	112-39-0	2163	Methyl hexadecanoate	2	74	Ester	NF	NF	NF
25	123-66-0	1227	Ethyl hexanoate	1	88	Ester	1 ^{1,5}	Fruity, apple like ^{a, g}	Linoleic acid ^F
26	106-32-1	1432	Ethyl octanoate	2	74	Ester	194 ¹	Fruity, citrus like ^a	Linoleic acid, Linolenic acid ^F
27	111-11-5	1417	Methyl octanoate	2	88	Ester	200 ¹	Fruity, floral ^b	Oleic acid ^A
28	123-29-5	1570	Ethyl nonanoate	1	88	Ester	377 ¹	Fruity, floral ^b	NF
29	104-61-0	2035	γ-Nonalactone	2	85	Ester	30 ⁴	Coconut, peach ^a	Linoleic acid ^F
30	96-84-0	1636	Butyrolactone	2	42	Ester	NF	Caramel, sweet ^a	NF
31	109-52-4	1740	Pentanoic acid	2	60	Acid	3000 ¹	Sweet	Methyl Linoleic acid ^C
32	142-62-1	1847	Hexanoic acid	1	60	Acid	3000 ^{1,5}	Raincid, Chees, Fatty ^g	Methyl Linoleic acid ^C
33	111-14-8	1953	Heptanoic acid	1	60	Acid	3000 ¹	Sweety, cheesy ^f	Methyl Linoleic acid ^C

34	124-07-2	2060	Octanoic acid	1	60	Acid	3000 ^{1,5}	Raincid, Chees, Fatty ^g	Methyl Linoleic acid ^C
35	143-07-7	2484	Dodecanoic acid	2	73	Acid	10000 ¹	Dry, metallic ^f	NF
36	1669-44-9	1416	3-Octen-2-one	2	55	Ketone	NF	Green, fruity ^b	Arachidonic acid ^E
37	108-83-8	1167	2,6-Dimethyl-4-heptanone	2	57	Ketone	NF	NF	NF
38	3777-69-3	1224	2-Pentyl furan	2	81	Furan	6 ^{1,5}	Fruity, green, sweet ^g	Linoleic acid ^{B,E}
39	57396-75-5	1132	3,4-Dimethyl-2,4,6-octatriene	2	121	Terpene	NF	NF	NF

OTV (Odor Threshold values; Parts per Billion, µg/L) in water were reported by: (¹ Leffingwell & Associates, 2004; ² Nan et al., 2013; ³ Qian & Wang, 2005; ⁴ Wang et al., 2017; ⁵ Wu et al., 2016). Aroma descriptors were obtained from “Flavornet and human odor space” (^a <http://www.flavornet.org/flavornet.html>), the LRI and odor database (^b <http://www.odour.org.uk/odour/index.html>) and from reported literature (^c Jiang & Zhang, 2010; ^d Qian & Wang, 2005; ^e Wang et al., 2017; ^f Welke et al., 2014; ^g Wu et al., 2016). Reported the precursor (fatty acids) of their respected volatile compounds (^A Frankel 1980; ^B Frankel, Neff, and Edward S. 1981; ^C Horvat et al. 1968; ^D Meeting, Ho, and Hartman 1994; ^E Whitfield and Mottram 1992; ^F Belitz, Garcia and Wayne, 2004); (“NF” indicated not find. Identification method (ID): 1) identified, mass spectrum and RI were following standards; 2) tentatively identified, mass spectrum matched in the standard NIST 2008 library and RI matched with NIST Standard Reference Database (NIST Chemistry WebBook). Kovats retention indices (RI) were calculated based on an n-alkane series (C6–C24) on the poly (ethylene glycol) (PEG) column under the same chromatographic conditions.