

Table S1. Volatile flavor substances in LSCK and HSCK.

No	Compound name and classification	CAS	Peak volume/a.u.	
			LSFK	HSFK
Esters				
A1	Ethyl dihydrocinnamate-D	103-36-6	116.97 ± 15.57 ^a	60.06 ± 0.16 ^b
A1	Ethyl dihydrocinnamate-M	103-36-6	1420.15 ± 96.75 ^a	314.23 ± 44.93 ^b
A2	Propyl butanoate	105-66-8	257.07 ± 14.07 ^a	295.13 ± 12.22 ^b
A3	Propyl propanoate	106-36-5	2444.00 ± 39.07 ^a	2705.59 ± 40.48 ^b
A4	Methyl hexanoate	106-70-7	639.67 ± 49.51 ^a	549.96 ± 17.14 ^b
A5	Butyl butanoate	109-21-7	344.84 ± 25.86 ^a	256.63 ± 7.85 ^b
A6	Heptyl acetate	112-06-1	311.49 ± 14.15 ^a	308.02 ± 9.15 ^a
A7	Benzyl propionate	122-63-4	564.95 ± 25.16 ^a	363.40 ± 18.52 ^b
A8	n-Butyl acetate	123-86-4	425.26 ± 7.99 ^a	431.37 ± 7.14 ^a
A9	Ethyl 3-(methylthio)propanoate	13327-56-5	1108.88 ± 117.08 ^a	3962.02 ± 215.96 ^b
A10	Acetic acid, (4-methylphenyl)methyl ester-D	140-39-6	925.10 ± 20.08 ^a	862.09 ± 25.37 ^b
A10	Acetic acid, (4-methylphenyl)methyl ester-M	140-39-6	349.47 ± 25.05 ^a	311.53 ± 16.42 ^a
A11	Ethyl acrylate	140-88-5	1814.10 ± 78.82 ^a	1390.60 ± 3.66 ^b
A12	Hexyl acetate	142-92-7	118.23 ± 11.21 ^a	70.66 ± 1.65 ^b
A13	Butyl 2-methylbutanoate	15706-73-7	378.50 ± 6.56 ^a	530.07 ± 27.39 ^b
A14	Propionic acid hexyl ester	2445-76-3	201.53 ± 15.89 ^a	191.37 ± 7.47 ^a
A15	Amyl acetate	328-63-7	91.38 ± 7.66 ^a	133.06 ± 2.27 ^b
A16	(Z)-3-Hexenyl acetate	3681-71-8	123.68 ± 12.24 ^a	62.16 ± 3.30 ^b
A17	Ethyl levulinate	539-88-8	44.39 ± 3.22 ^a	186.91 ± 7.18 ^b
A18	Isobutyl butyrate	539-90-2	359.99 ± 14.86 ^a	321.92 ± 10.04 ^b
A19	Isobutyl propionate	540-42-1	104.00 ± 6.09 ^a	153.75 ± 2.60 ^b
A20	Ethyl 3-hydroxybutanoate	5405-41-4	718.67 ± 36.43 ^a	502.39 ± 7.55 ^b
A21	Allyl isothiocyanate	57-06-7	901.94 ± 32.01 ^a	980.69 ± 13.90 ^b
A22	2-Furanmethanol	623-19-8	1471.31 ± 189.05 ^a	582.86 ± 9.29 ^b
A23	Methyl butanoate	623-42-7	348.77 ± 35.69 ^a	313.82 ± 7.16 ^a
A24	Ethyl acetoacetate propylene glycol ketal	6290-17-1	1848.20 ± 111.97 ^a	929.44 ± 37.52 ^b
A25	Isopropyl 2-methylbutanoate	66576-71-4	495.26 ± 8.47 ^a	334.76 ± 10.22 ^b
A26	δ-Heptanolide-D	713-95-1	325.86 ± 15.43 ^a	261.23 ± 17.88 ^b
A26	δ-Heptanolide-M	713-95-1	2365.47 ± 151.80 ^a	954.76 ± 0.39 ^b
A27	γ-Butyrolactone	96-48-0	586.66 ± 35.90 ^a	429.28 ± 4.41 ^b
A28	Ethyl isobutyrate	97-62-1	94.02 ± 12.18 ^a	153.14 ± 1.00 ^b
A29	Ethyl lactate-M	97-64-3	211.11 ± 16.71 ^a	315.40 ± 3.56 ^b
A29	Ethyl lactate-D	97-64-3	527.92 ± 49.44 ^a	801.57 ± 8.30 ^b
A30	Isobutyl isobutyrate	97-85-8	645.27 ± 15.92 ^a	735.36 ± 27.06 ^b
Alcohols				
B1	2-Methyl-1-pentanol-M	105-30-6	180.24 ± 2.16 ^a	113.91 ± 3.88 ^b
B1	2-Methyl-1-pentanol-D	105-30-6	169.69 ± 10.39 ^a	52.82 ± 1.99 ^b
B2	1-Heptanol	111-70-6	254.51 ± 11.36 ^a	108.32 ± 4.30 ^b
B3	2-Butoxyethanol	111-76-2	222.69 ± 20.10 ^a	284.32 ± 14.84 ^b
B4	1-Octanol	111-87-5	777.96 ± 72.55 ^a	156.22 ± 12.74 ^b
B5	(Z)-2-Penten-1-ol	1576-95-0	227.03 ± 30.76 ^a	256.58 ± 9.51 ^a
B6	Dihydromyrcenol	18479-58-8	631.05 ± 5.85 ^a	274.98 ± 7.40 ^b
B7	2,3-Butanediol	513-85-9	65.42 ± 5.51 ^a	106.94 ± 3.65 ^b
B8	2-Heptanol-M	543-49-7	502.50 ± 29.04 ^a	399.87 ± 3.38 ^b
B8	2-Heptanol-D	543-49-7	413.04 ± 16.00 ^a	497.44 ± 2.73 ^b
B9	(E)-3-Hexen-1-ol	544-12-7	137.13 ± 13.90 ^a	194.11 ± 1.21 ^b
B10	Linalool oxide	60047-17-8	1240.65 ± 116.71 ^a	1342.43 ± 133.35 ^a
B11	4-Methylpentanol	626-89-1	96.29 ± 7.33 ^a	42.57 ± 2.10 ^b
B12	2-Hexanol	626-93-7	889.79 ± 48.76 ^a	492.74 ± 1.83 ^b
B13	2-Propanol	67-63-0	240.76 ± 22.53 ^a	300.83 ± 23.65 ^b
B14	1-Butanol	71-36-3	929.07 ± 37.13 ^a	651.10 ± 7.62 ^b
B15	Tert-butyl alcohol	75-65-0	244.74 ± 24.48 ^a	156.95 ± 2.95 ^b
B16	3-Methyl-3-buten-1-ol	763-32-6	3817.24 ± 59.55 ^a	2017.55 ± 0.45 ^b
B17	2-Methyl-1-propanol	78-83-1	179.14 ± 3.32 ^a	583.10 ± 30.17 ^b
B18	1-Menthol	89-78-1	228.15 ± 28.08 ^a	409.64 ± 10.14 ^b
B19	4-Hexen-1-ol	928-927	251.72 ± 9.30 ^a	269.78 ± 12.66 ^a

B20	2-Hexen-1-ol	928-950	381.60 ± 31.13 ^a	378.58 ± 10.10 ^a
B21	2-Furfurylthiol	98-02-2	233.01 ± 13.70 ^a	193.49 ± 6.61 ^b
	Aldehyde			
C1	Benzaldehyde	100-52-7	549.31 ± 36.30 ^a	161.66 ± 0.36 ^b
C2	Heptanal	111-71-7	155.51 ± 3.28 ^a	272.18 ± 2.46 ^b
C3	Vanillin	121-33-5	1959.19 ± 83.28 ^a	1416.84 ± 25.33 ^b
C4	Benzene acetaldehyde-D	122-78-1	473.19 ± 34.25 ^a	317.32 ± 0.55 ^b
C4	Benzene acetaldehyde-M	122-78-1	1486.31 ± 178.84 ^a	1741.84 ± 20.36 ^a
C5	2-Methylpentanal	123-15-9	979.00 ± 12.83 ^a	982.94 ± 12.26 ^a
C6	trans-2-Pentenal	1576-87-0	63.77 ± 2.72 ^a	182.89 ± 3.31 ^b
C7	(E)-2-Nonenal	18829-56-6	356.51 ± 17.80 ^a	331.89 ± 13.65 ^a
C8	(E)-2-Octenal	2548-87-0	833.70 ± 36.59 ^a	2521.04 ± 268.55 ^b
C9	3-Methylbutanal	590-86-3	1203.09 ± 58.71 ^a	1112.97 ± 12.15 ^a
C10	(Z)-4-Heptenal	6728-31-0	135.38 ± 3.03 ^a	105.98 ± 0.69 ^b
C11	Salicylaldehyde	90-02-8	846.91 ± 21.83 ^a	533.32 ± 26.71 ^b
C12	Furfural	98-01-1	285.26 ± 4.06 ^a	226.11 ± 1.88 ^b
C13	(E,E)-2,4-Hexadienal	142-83-6	222.12 ± 21.58 ^a	126.37 ± 5.02 ^b
	Ketones			
D1	4,5-Dihydro-3(2H)-thiophenone-D	1003-04-9	1966.82 ± 44.49 ^a	294.48 ± 4.27 ^b
D1	4,5-Dihydro-3(2H)-thiophenone-M	1003-04-9	411.58 ± 16.94 ^a	204.22 ± 1.06 ^b
D2	3-Octanone	106-68-3	1449.09 ± 37.25 ^a	992.62 ± 1.90 ^b
D3	2-Pentanone	107-87-9	1206.35 ± 167.50 ^a	453.76 ± 35.28 ^b
D4	Dihydro-5-methyl-2(3H)-Furanone-D	108-29-2	146.54 ± 20.49 ^a	113.78 ± 1.69 ^a
D4	Dihydro-5-methyl-2(3H)-Furanone-M	108-29-2	2435.29 ± 53.44 ^a	2788.46 ± 3.70 ^b
D5	1-Hydroxy-2-propanone	116-09-6	715.01 ± 6.77 ^a	599.12 ± 32.47 ^b
D6	Cyclopentanone	120-92-3	167.24 ± 23.84 ^a	220.55 ± 1.36 ^b
D7	Mesityl oxide	141-79-7	407.98 ± 22.05 ^a	528.89 ± 16.30 ^b
D8	Levo-carvone	6485-40-1	196.16 ± 8.81 ^a	74.89 ± 3.91 ^b
D9	3-Pentanone	96-22-0	204.23 ± 6.33 ^a	781.67 ± 4.57 ^b
D10	Dihydro-2(3h)-furanone	39700-44-2	166.28 ± 17.42 ^a	144.25 ± 6.70 ^a
	Acids			
E1	Butanoic acid	107-92-6	1341.66 ± 24.19 ^a	993.07 ± 2.65 ^b
E2	Pentanoic acid	109-52-4	145.63 ± 2.25 ^a	146.19 ± 2.59 ^a
E3	Nonanoic acid	112-05-0	526.69 ± 10.13 ^a	560.59 ± 10.73 ^b
E4	2-Methylbutanoic acid-D	116-53-0	466.68 ± 40.38 ^a	177.37 ± 0.15 ^b
E4	2-Methylbutanoic acid-M	116-53-0	132.53 ± 8.94 ^a	105.56 ± 0.58 ^b
E5	3-Methylbutyric acid	503-74-2	798.11 ± 57.56 ^a	2758.12 ± 46.08 ^b
E6	Allylacetic acid	591-80-0	769.86 ± 57.86 ^a	1227.41 ± 59.4 ^b
E7	2-Methyl propanoic acid	79-31-2	622.73 ± 37.28 ^a	670.60 ± 8.72 ^a
	Pyrazines			
F1	2,6-Dimethylpyrazine	108-50-9	4074.57 ± 496.24 ^a	2965.32 ± 85.31 ^b
F2	Methylpyrazine	109-08-0	100.46 ± 6.24 ^a	31.37 ± 1.15 ^b
F3	2-Ethyl-5-methylpyrazine	1336-64-0	34.36 ± 4.14 ^a	34.91 ± 1.72 ^a
F4	Ethylpyrazine	13925-00-3	418.82 ± 28.78 ^a	701.03 ± 4.32 ^b
F5	2-Ethyl-3-methyl-Pyrazine	15707-23-0	24.65 ± 2.52 ^a	34.50 ± 2.19 ^b
F6	2-Acetylpyrazine	22047-25-2	123.93 ± 12.07 ^a	55.48 ± 4.23 ^b
F7	2-Acetyl-3-methylpyrazine	23787-80-6	1358.74 ± 77.37 ^a	1801.20 ± 10.14 ^b
F8	3-sec-Butyl-2-methoxypyrazine	24168-70-5	1855.95 ± 48.94 ^a	326.82 ± 17.71 ^b
	Ethers			
G1	1,2-Dimethoxyethane	110-71-4	1305.62 ± 33.23 ^a	569.03 ± 11.61 ^b
G2	Diethylene glycol dimethyl ether	111-96-6	2216.78 ± 42.05 ^a	505.27 ± 19.35 ^b
G3	Diethyl trisulfide	3600-24-6	364.11 ± 33.52 ^a	291.25 ± 11.56 ^b
G4	Diallyl sulfide	592-88-1	317.87 ± 19.80 ^a	400.30 ± 10.49 ^b
G5	Dimethyl disulfide	624-92-0	143.03 ± 11.50 ^a	445.18 ± 12.46 ^b
G6	1-Propene-3-methylthio	10152-76-8	1166.92 ± 62.20 ^a	910.24 ± 2.04 ^b
	Terpenes			
H1	Limonene	138-86-3	283.73 ± 33.16 ^a	474.35 ± 60.00 ^b
H2	α-Terpinolene	586-62-9	625.39 ± 24.58 ^a	849.94 ± 25.46 ^b
H3	α-Phellandrene	99-83-2	964.52 ± 44.61 ^a	1094.98 ± 67.01 ^b
H4	α-Terpinene	99-86-5	52.00 ± 4.68 ^a	47.03 ± 1.56 ^a
	Phenols			
I1	Phenol	108-95-2	279.59 ± 4.09 ^a	233.92 ± 0.71 ^b

I2	Carvacrol	499–75–2	36,661.62 ± 2066.07 ^a	32,995.09 ± 639.11 ^b
I3	p-Methyl guaiacol	93–51–6	279.56 ± 10.75 ^a	275.22 ± 12.86 ^a
	Nitriles			
J1	Hexanenitrile	628–73–9	4624.50 ± 233.94 ^a	2751.70 ± 51.16 ^b
J2	3-Butenenitrile	109–75–1	1142.26 ± 82.58 ^a	409.49 ± 2.82 ^b
	Others			
K1	N,N-Diethylethanamine	121–44–8	679.17 ± 45.36 ^a	463.76 ± 1.39 ^b
K2	Aniline	62–53–3	239.25 ± 15.28 ^a	56.20 ± 0.76 ^b
K3	Tetrahydrothiophene	110–01–0	6282.35 ± 260.70 ^a	469.77 ± 5.11 ^b
K4	1,4-Dioxan	123–91–1	1965.58 ± 187.11 ^a	1193.13 ± 118.99 ^b
K5	<i>cis</i> -2,4-Dimethyl-1,3-Dioxolane	3390–12–3	285.77 ± 11.95 ^a	823.20 ± 1.72 ^b
K6	2-Heptylfuran	3777–71–7	445.09 ± 9.25 ^a	328.29 ± 10.22 ^b
K7	3-Ethylpyridine	536–78–7	1258.28 ± 177.24 ^a	630.38 ± 40.16 ^b
K8	2-Methyl-4-propyl-1,3-oxathiane	59323–76–1	1175.41 ± 165.08 ^a	80.47 ± 3.12 ^b
K9	N-Nitroso-morpholine	59–89–2	492.33 ± 36.16 ^a	533.76 ± 12.88 ^a
K10	4-Methylthiazole	693–95–8	225.40 ± 26.43 ^a	569.48 ± 23.35 ^b

Different superscript letters in the same row indicate significant differences ($p < 0.05$).