Supplementary information for the characterization of (+)-anamarine

	Natural (+)-anamarine[1]	Present Synthesis	Previous Synthesis-I[2]	Previous Synthesis-II[3]
Physical description	**Solid**	white solid: mp = 107–109 °C	White crystals, mp = 110–111 °C	mp = 109-111 °C
$[\alpha]^t_D$	$[\alpha]^{20}_D$= + 18.8 (c 0.8,$CHCl_3$)	$[\alpha]^{20}_D$= + 17.1 (c 0.3, $CHCl_3$)	$[\alpha]_D$ = +15.9 (c 0.8; $CHCl_3$)	$[\alpha]^{25}_D$ = +17 (*c* 0.3, $CHCl_3$)
IR	_____	2925, 1739, 1374, 1023, 974 cm^{-1}	1738 (C=O)	_____
^{1}H NMR	^{1}H NMR: δ 6.90-6.07 (m, 2H), 5.84 (m, 2H), 5.40-4.90 (m, 5H), 2.46 (m, 2H), 1.20 (d, *J* = 6.0 Hz, 3H, CH_3). Remaining acetoxyl group protons appear at respected region.	^{1}H NMR (300 MHz, $CDCl_3$): δ 6.88 (ddd, *J* = 3.5, 5.2, 9.9 Hz, 1H), 6.05 (ddd, *J* = 1.7, 1.7, 9.9 Hz, 1H), 5.88-5.74 (m, 2H), 5.36 (dd, *J* = 5.2, 7.2 Hz, 1H), 5.30 (dd, *J* = 3.5, 7.2 Hz, 1H), 5.17 (dd, *J* = 3.5, 7.0 Hz,1H), 4.96 (m, 1H) 4.90 (dq, *J* = 6.4, 6.4 Hz, 1H), 2.45 (m, 2H), 2.11 (s, 3H, CH_3), 2.07 (s, 3H, CH_3), 2.06 (s, 3H, CH_3), 2.03 (s, 3H, CH_3), 1.17 (d, *J* = 6.4 Hz, 3H, CH_3).	^{1}H NMR (500 MHz): δ 6.88 (1H, ddd, J = 10, 5.2, 3 Hz), 6.04 (1H, dt, J = 10, 1.5 Hz), 5.85–5.75 (2H, m), 5.36 (1H, dd, J = 7, 6.5 Hz), 5.30 (1H, dd, J = 7, 3.5 Hz), 5.17 (1H, dd, J = 7, 3.5 Hz), 4.95 (1H, m), 4.90 (1H, quint, J = 6.5 Hz), 2.45 (2H, m), 2.12 (3H, s), 2.07 (3H, s), 2.06 (3H, s), 2.02 (3H, s), 1.17 (3H, d, J = 6.5 Hz);	^{1}H NMR ($CDCl_3$, 270 MHz): δ 6.88 (ddd, *J* = 3.5, 5.2, 9.9 Hz, 1H), 6.05 (ddd, *J* = 1.7, 1.7, 9.9 Hz, 1H), 5.88-5.74 (m, 2H), 5.36 (dd, *J* = 5.2, 7.2 Hz, 1H), 5.30 (dd, *J* = 3.5, 7.2 Hz, 1H), 5.17 (dd, *J* = 3.5, 7.0 Hz, 1H), 4.99-4.90 (m, 1H), 4.91 (dq, *J* = 6.4, 6.4 Hz, 1H), 2.47-2.41 (m, 2H), 2.12 (s, 3H), 2.07 (s, 3H), 2.06 (s, 3H), 2.02 (s, 3H), 1.17 (d, *J* = 6.4 Hz, 3H);
^{13}C NMR	^{13}C NMR: δ 163.1, 144.2, 132.8, 125.5, 121.4, 75.7, 71.9, 71.8, 70.4, 67.3, 29.1, and 15.8. (Its structure is confirmed by X-ray crystallographic data)	^{13}C NMR (75.468 MHz, $CDCl_3$): δ 170.03, 169.87, 169.72, 169.50, 163.57, 144.51, 133.07, 125.53, 121.64, 75.95, 71.91, 71.51, 70.40, 67.50, 29.46, 21.05, 20.90, 20.84, 20.50, 15.89.	^{13}C NMR (125 MHz): δ 170.0, 169.8, 169.7, 169.6, 163.4 (C), 144.5, 133.0, 125.7, 121.6, 75.9, 71.9, 71.7, 70.5, 67.4), 29.2, 21.0, 20.9, 20.8, 20.6, 15.8.	^{13}C NMR ($CDCl_3$, 125 MHz): δ 170.0, 169.8, 169.7, 169.6, 163.4, 144.4, 133.0, 125.6, 121.5, 75.8, 71.9, 71.6, 70.5, 67.3, 29.1, 21.0, 20.9, 20.8, 20.6, 15.8.
HRMS	Molecular formula $C_{20}H_{26}O_{10}$ (by combustion analysis)	HRMS for $C_{20}H_{26}O_{10}$+Na: calcd 449.1423; found: 449.1434.	_____	HRMS (CI) calcd for [$C_{20}H_{26}O_{10}$+ Na]+: 449.1419, Found: 449.1424.

References:

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