

**Table S2.** NMR Assignments for *In Vivo* Produced Methylated Triterpenes <sup>1</sup>

C31a botryococcene by TMT3		C31b botryococcene by TMT3		C32 botryococcene by TMT3		C31 squalene by TMT1		C32 squalene by TMT1		C31 squalene by TMT2		C32 squalene by TMT2		C31 squalene by TMT3		C32 squalene by TMT3	
C positions	$\delta$	C positions	$\delta$	C positions	$\delta$	C positions	$\delta$	C positions	$\delta$	C positions	$\delta$	C positions	$\delta$	C positions	$\delta$	C positions	$\delta$
1	17.78	1	109.44	1	109.44	1	109.46	1	109.46	1	109.46	1	109.45	1	109.45	1	109.46
2	131.37	2	150.24	2	150.23	2	150.25	2	150.23	2	150.26	2	150.25	2	150.25	2	150.25
3	124.47	3	40.82	3	40.79	3	40.79	3	40.79	3	40.79	3	40.79	3	40.79	3	40.79
4	26.82	4	33.44	4	33.44	4	33.42	4	33.43	4	33.43	4	33.42	4	33.43	4	33.42
5	39.81	5	37.58	5	37.58	5	37.59	5	37.61	5	37.59	5	37.59	5	37.60	5	37.60
6	134.76	6	135.07	6	135.07	6	134.99a	6	135.15f	6	134.99a	6	135.17f	6	134.99a	6	135.16f
7	124.91	7	124.80	7	124.70	7	124.49b	7	124.19	7	124.49b	7	124.18	7	124.49b	7	124.18
8	23.20	8	23.20	8	23.19	8	26.85	8	26.73	8	26.85	8	26.71	8	26.86	8	26.73
9	41.41	9	41.45	9	41.45	9	39.84	9	39.86	9	39.84	9	39.86	9	39.84	9	39.86
10	42.12	10	42.12	10	42.11	10	135.19a	10	135.25f	10	135.19a	10	135.25f	10	135.19a	10	135.26f
11	135.91	11	135.89	11	135.91	11	124.40b	11	124.41	11	124.40b	11	124.40	11	124.40b	11	124.40
12	133.82	12	133.84	12	133.82	12	28.36	12	28.37	12	28.36	12	28.35	12	28.36	12	28.36
13	36.84	13	36.77	13	36.84	13	28.36	13	28.37	13	28.36	13	28.35	13	28.36	13	28.36
14	37.51	14	37.46	14	37.51	14	124.40b	14	124.41	14	124.40b	14	124.40	14	124.40b	14	124.40
15	25.92	15	25.90	15	25.92	15	135.17a	15	135.25f	15	135.17a	15	135.25f	15	135.17a	15	135.26f
16	124.58	16	124.69	16	124.58	16	39.81c	16	39.86	16	39.81c	16	39.86	16	39.81c	16	39.86
17	37.62	17	39.81	17	35.11	17	26.74d	17	26.73	17	26.74d	17	26.71	17	26.75d	17	26.73
18	37.82	18	39.81	18	37.62	18	124.36	18	124.19	18	124.36	18	124.18	18	124.36	18	124.18
19	33.44	19	26.82	19	33.42	19	135.25a	19	135.15f	19	135.25a	19	135.17f	19	135.25a	19	135.16f
20	40.82	20	124.50	20	40.84	20	39.81c	20	37.61	20	39.81c	20	37.59	20	39.81c	20	37.60
21	150.27	21	131.34	21	150.23	21	26.72d	21	33.43	21	26.72d	21	33.42	21	26.72d	21	33.42
22	109.44	22	17.78	22	109.44	22	124.19	22	40.79	22	124.19	22	40.79	22	124.19	22	40.79
23	25.79	23	19.06	23	19.04	23	131.34	23	150.23	23	150.23	23	150.26	23	150.26	23	150.25
24	16.00	24	16.00	24	16.00	24	17.76	24	109.46	24	17.76	24	109.45	24	109.46	24	109.46
25	23.63	25	23.63	25	23.62	25	19.03	25	19.03	25	19.03	25	19.04	25	19.03	25	19.04
26	146.85	26	146.85	26	146.84	26	16.09e	26	16.08	26	16.09e	26	16.08g	26	16.09e	26	16.08g
27	111.20	27	111.20	27	111.19	27	16.12e	27	16.12	27	16.13e	27	16.12g	27	16.12e	27	16.12g
28	21.23	28	21.23	28	21.23	28	16.12e	28	16.12	28	16.12e	28	16.12g	28	16.12e	28	16.12g
29	16.07	29	16.07	29	16.07	29	16.09e	29	16.08	29	16.09e	29	16.08g	29	16.09e	29	16.08g
30	19.06	30	25.79	30	19.04	30	25.79	30	19.03	30	25.79	30	19.04	30	25.79	30	19.04
31	19.76	31	19.76	31	19.78	31	19.76	31	19.78	31	19.76	31	19.76	31	19.76	31	19.78

a, b, c, d, e, f, g: Signals with the same letter may be interchangeable in a same column.

<sup>1</sup>H and <sup>13</sup>C NMR spectra were recorded on a JEOL alpha 600 NMR spectrometer at 300K. Chemical shifts were referenced relative to solvent peaks, namely d<sub>H</sub> 7.24 and d<sub>C</sub> 77.1 for CDCl<sub>3</sub>. Each product was identified as shown in Fig. 4 by referring <sup>13</sup>C chemical shifts for botryococcenes and methylsqualenes to those previously reported (1-4).

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