**Supplementary Materials**

# A New Dihydrochromone Dimer and Other Secondary Metabolites from Cultures of the Marine Sponge-Associated Fungi *Neosartorya fennelliae* KUFA 0811 and *Neosartorya tsunodae* KUFC 9213

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**Comentado [M1]:** Changed § to this symbol, please confirm.
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**Comentado [M2]:** Changed § to this symbol, please confirm.
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**Comentado [M3]:** Changed § to this symbol, please confirm.
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**Figure S1.** Structures of metabolites isolated from *Neosartorya tsunodae* KUFC 9231 and *N. fennelliae* KUFA 0811.

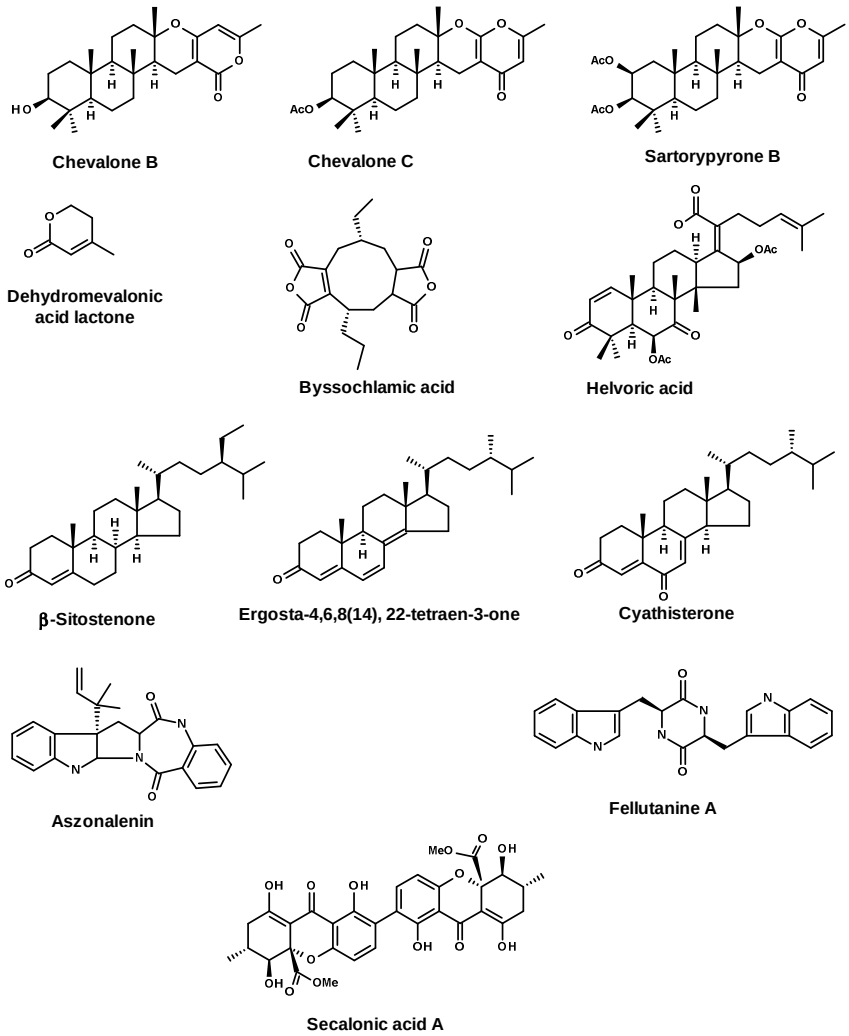

**Figure S2.** $^{1}H$ NMR spectrum of byssochlamic acid ($CDCl_3$, 300.13 MHz).

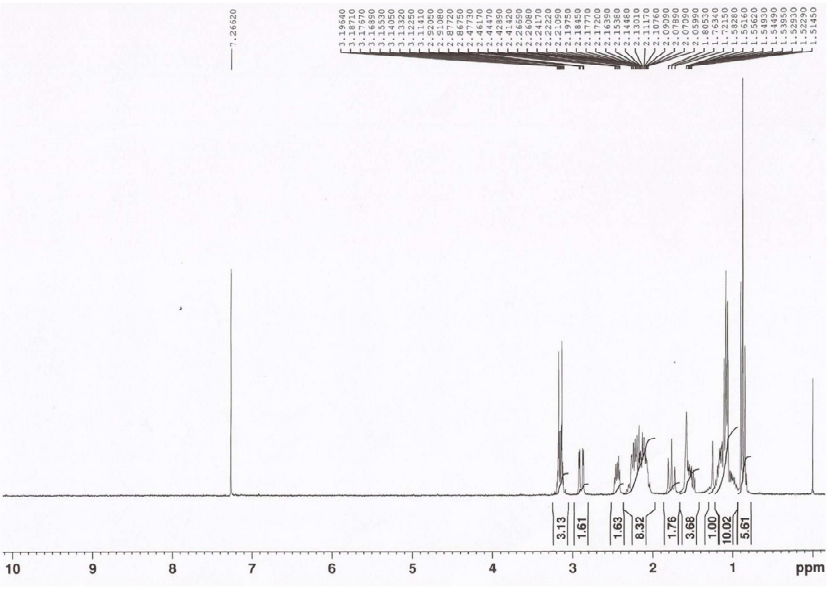


**Figure S3.** $^{13}C$ NMR spectrum of byssochlamic acid ($CDCl_3$, 75.4 MHz).

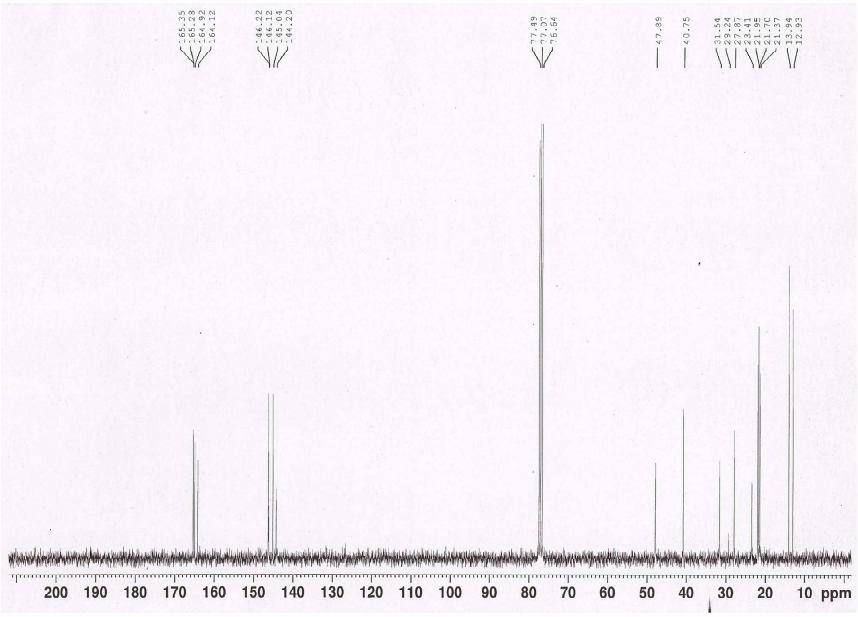

**Figure S4.** $^{1}H$ NMR spectrum of hopan-3β, 22-diol ($CDCl_3$, 500.13 MHz).

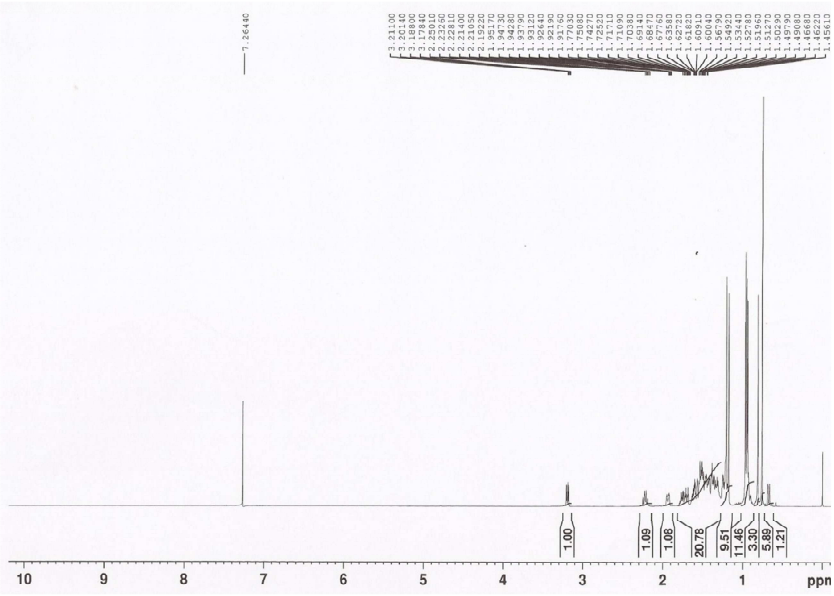


**Figure S5.** $^{13}C$ NMR spectrum of hopan-3β, 22-diol ($CDCl_3$, 125.8 MHz).

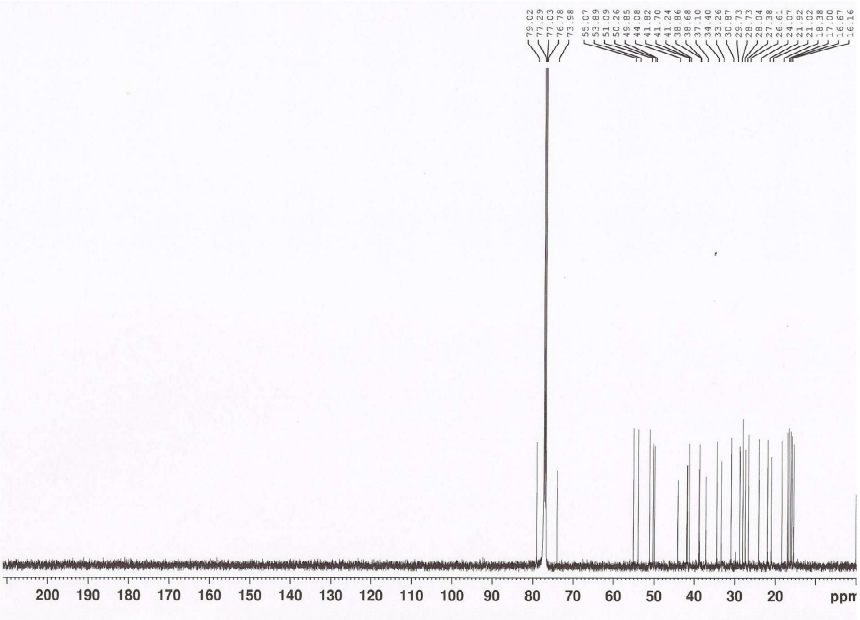

**Figure S6.** $^{1}H$ NMR spectrum of chevalone B ($CDCl_3$, 300.13 MHz).

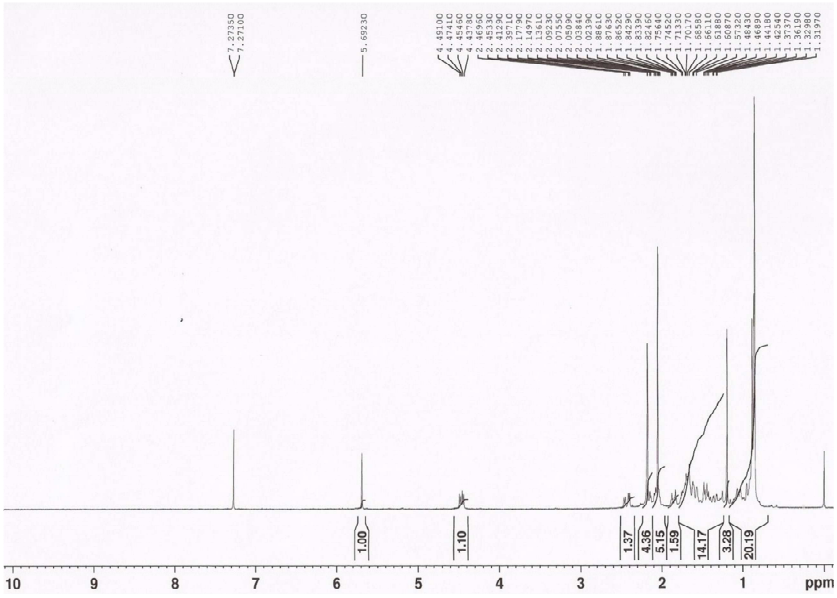


**Figure S7.** $^{13}C$ NMR spectrum of chevalone B ($CDCl_3$, 75.4 MHz).

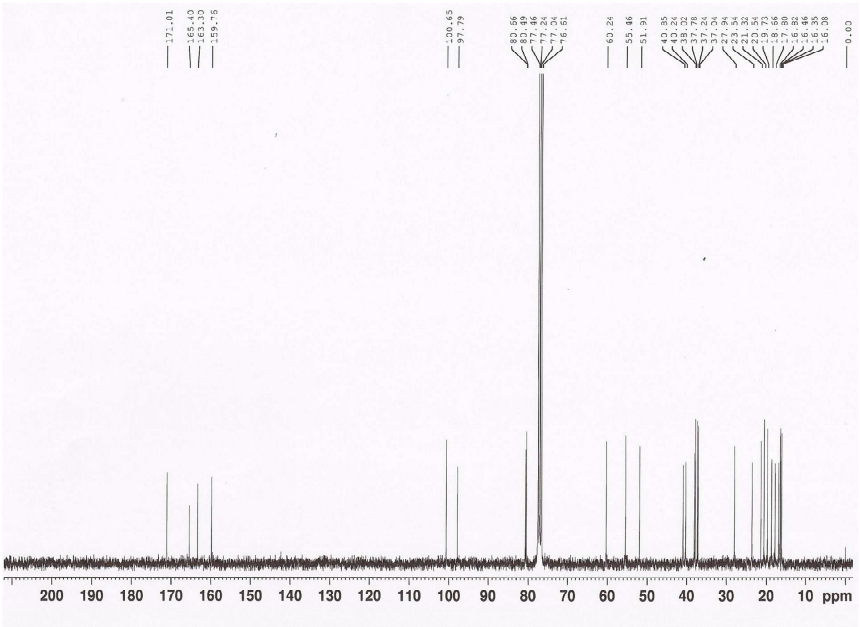

**Figure S8.** $^{1}H$ NMR spectrum of chevalone C ($CDCl_3$, 300.13 MHz).

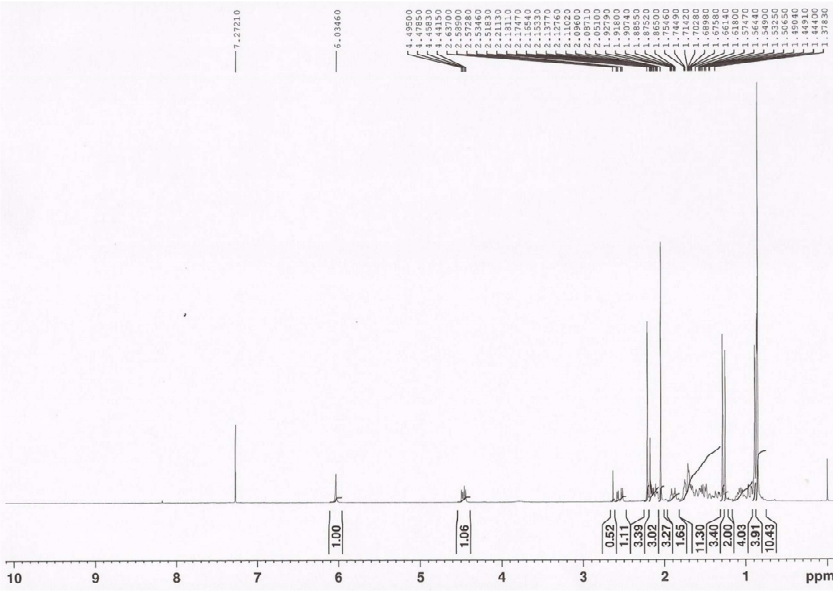


**Figure S9.** $^{13}C$ NMR spectrum of chevalone C ($CDCl_3$, 75.4 MHz).

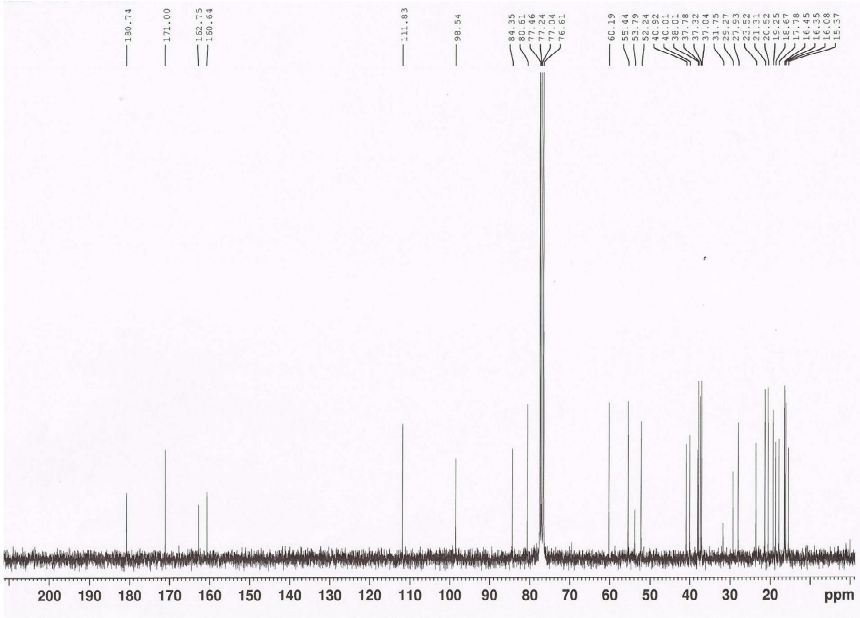

**Figure S10.** $^{1}$H NMR spectrum of sartorypyrone B ($CDCl_3$, 300.13 MHz).

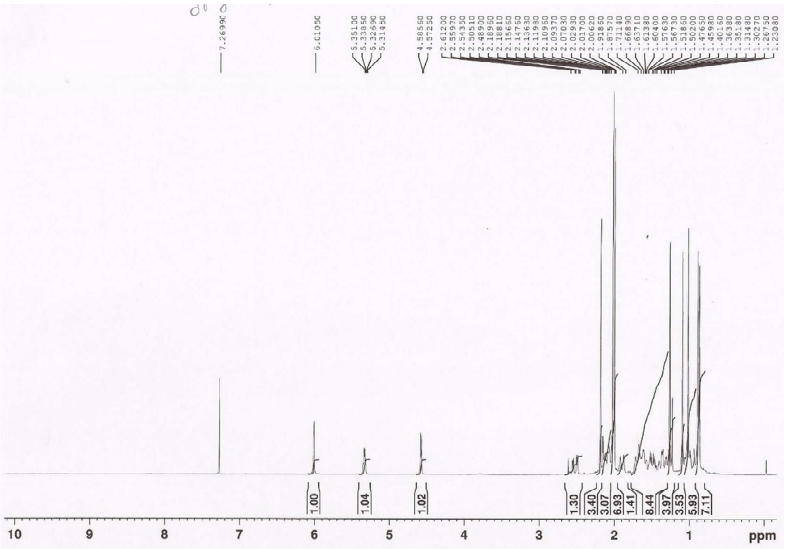


**Figure S11.** $^{13}$C NMR spectrum of sartorypyrone B ($CDCl_3$, 75.4 MHz).

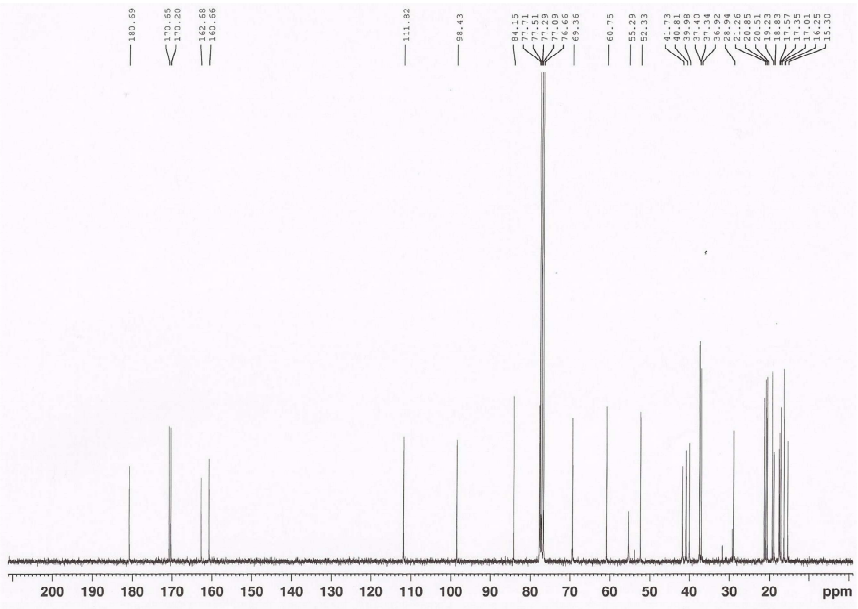

**Figure S12.** $^{1}H$ NMR spectrum of helvolic acid ($CDCl_3$, 300.13 MHz).

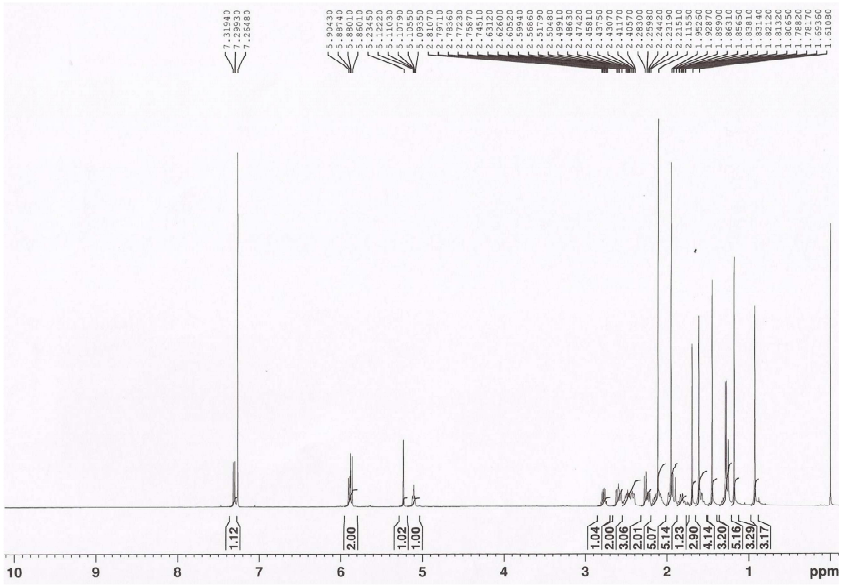


**Figure S13.** $^{13}C$ NMR spectrum of helvolic acid ($CDCl_3$, 75.4 MHz).

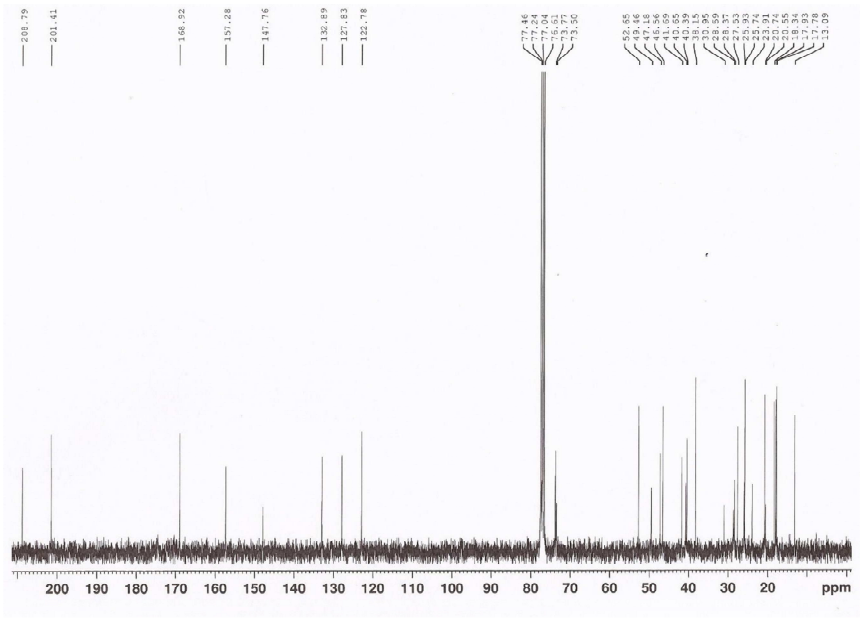

**Figure S14.** $^{1}$H NMR spectrum of lumichrome (DMSO, 300.13 MHz).

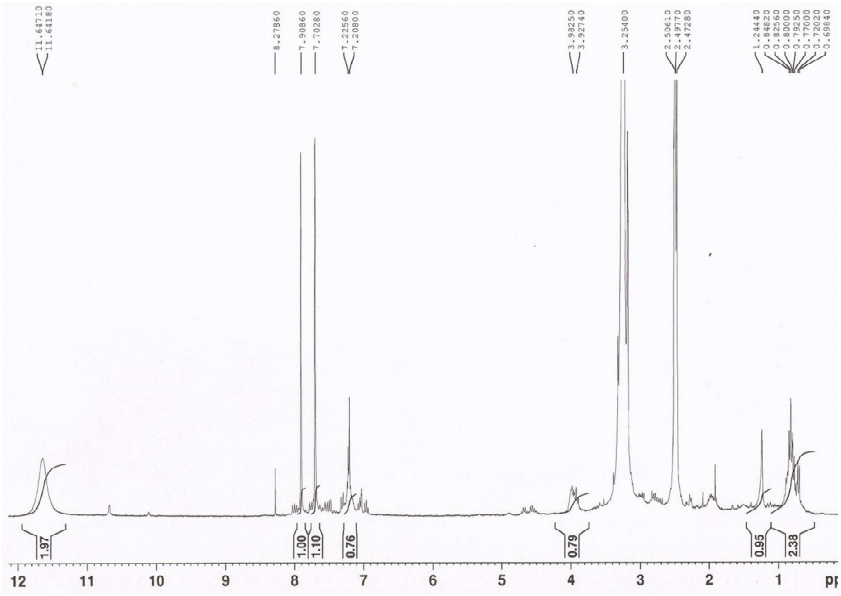


**Figure S15.** $^{13}$C NMR spectrum of lumichrome (DMSO, 75.4 MHz).

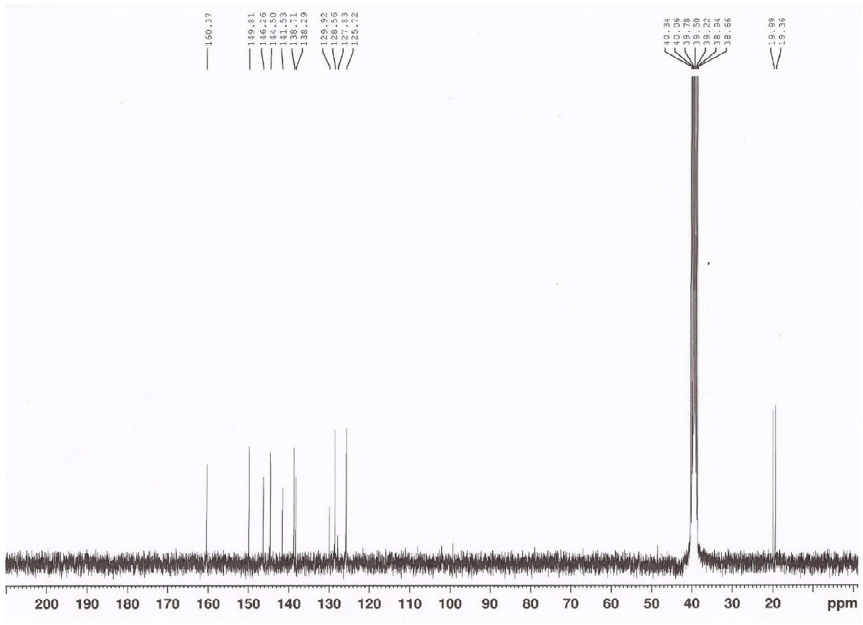

**Figure S16.** [1]H NMR spectrum of harmane (DMSO, 500.13 MHz).

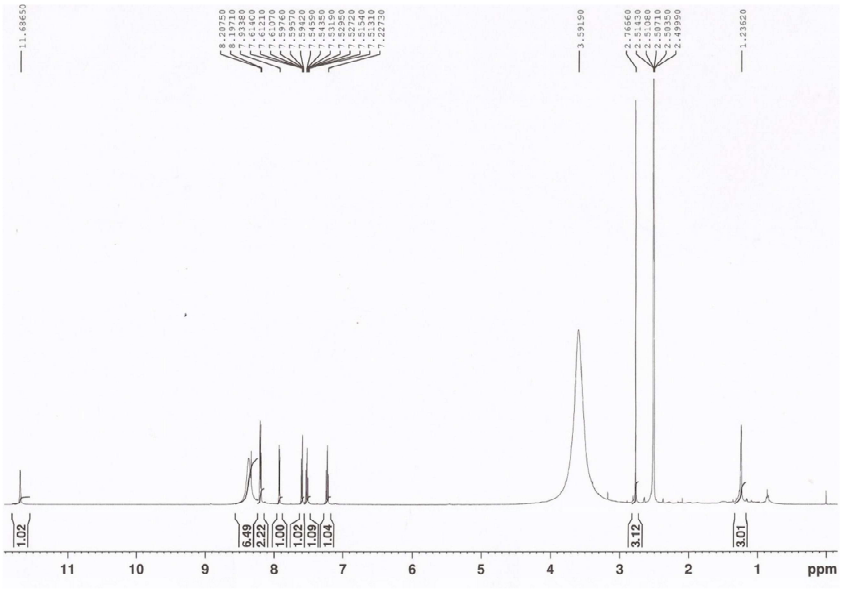


**Figure S17.** [13]C NMR spectrum of harmane (DMSO, 125.8 MHz).

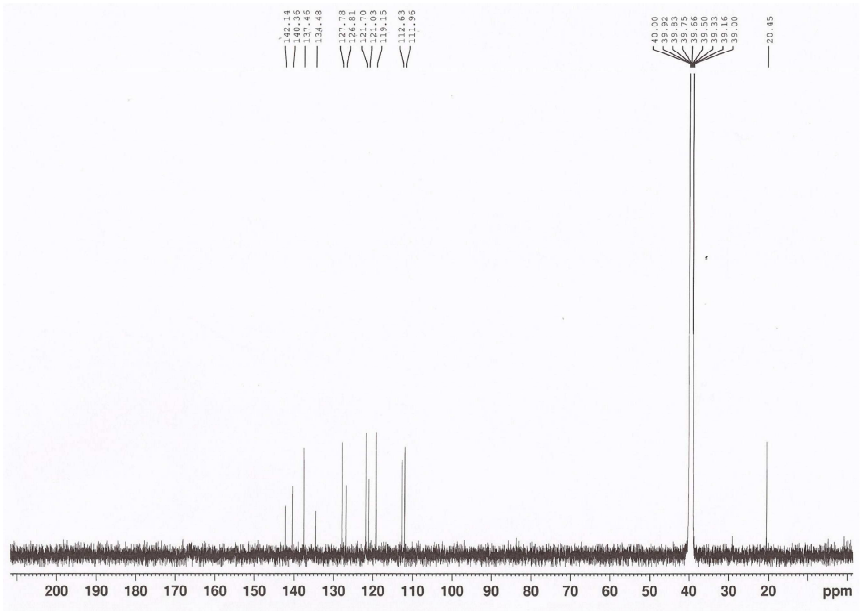

**Figure S18.** $^{1}H$ NMR spectrum of β-sitostenone ($CDCl_3$, 300.13 MHz).

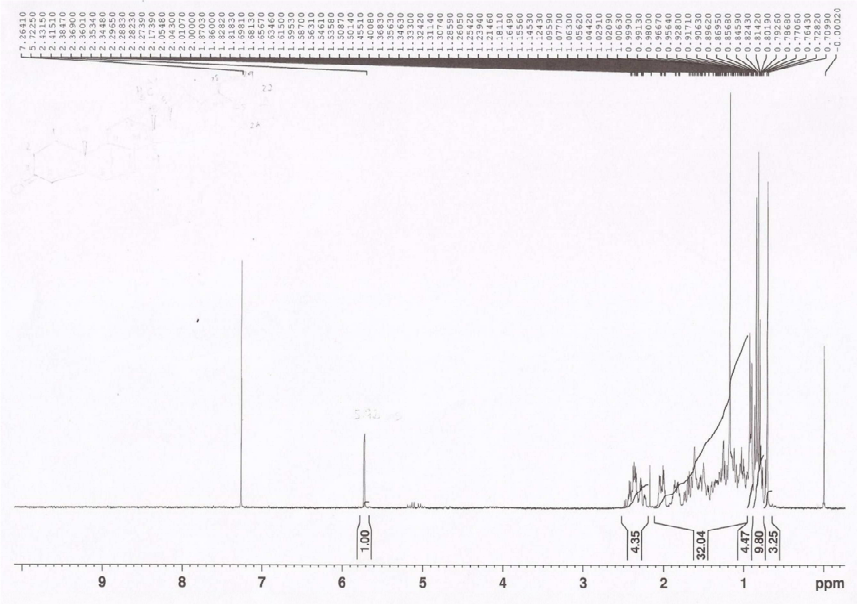


**Figure S19.** $^{13}C$ NMR spectrum of β-sitostenone ($CDCl_3$, 75.4 MHz).

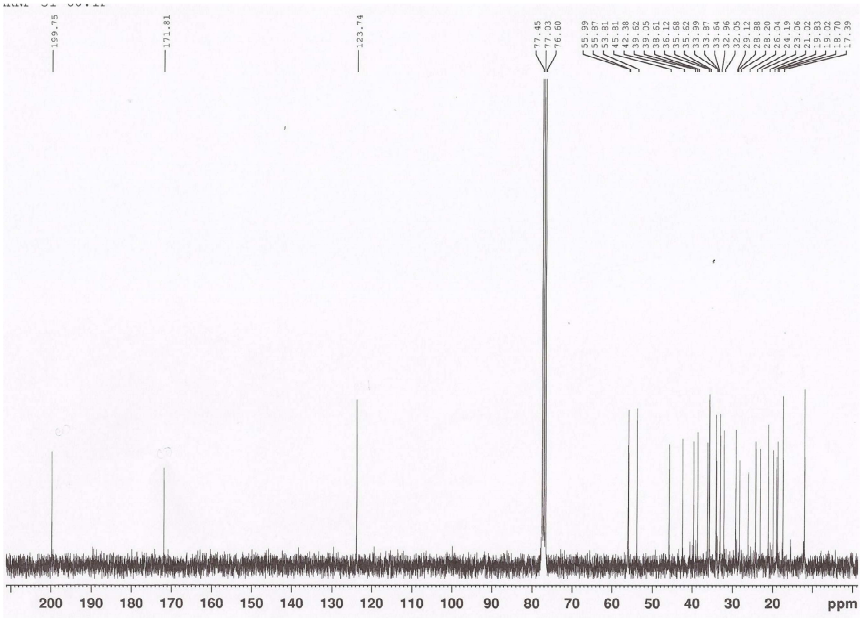

**Figure S20.** $^{1}H$ NMR spectrum of ergosta-4,6,8 (14), 22-tetraen-3-one ($CDCl_3$, 300.13 MHz).

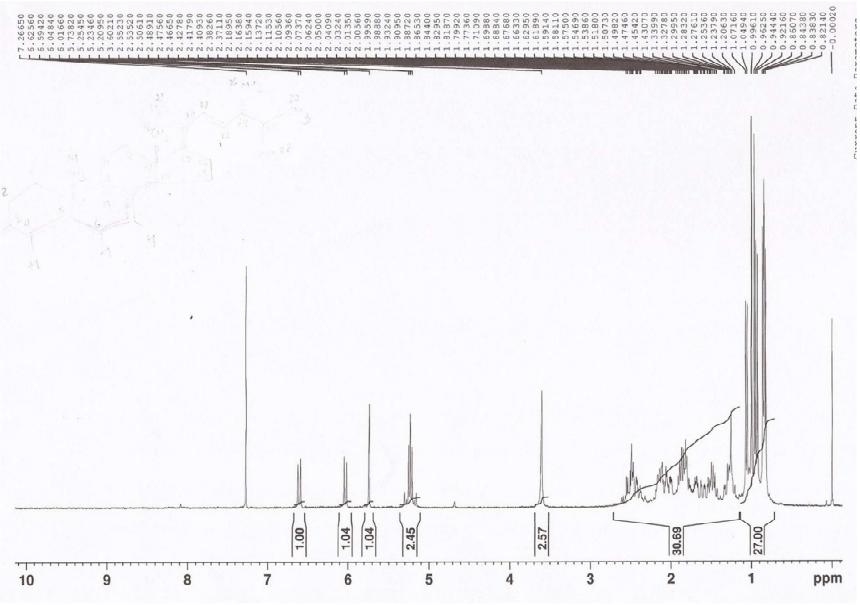


**Figure S21.** $^{13}C$ NMR spectrum of ergosta-4,6,8 (14), 22-tetraen-3-one ($CDCl_3$, 75.4 MHz).

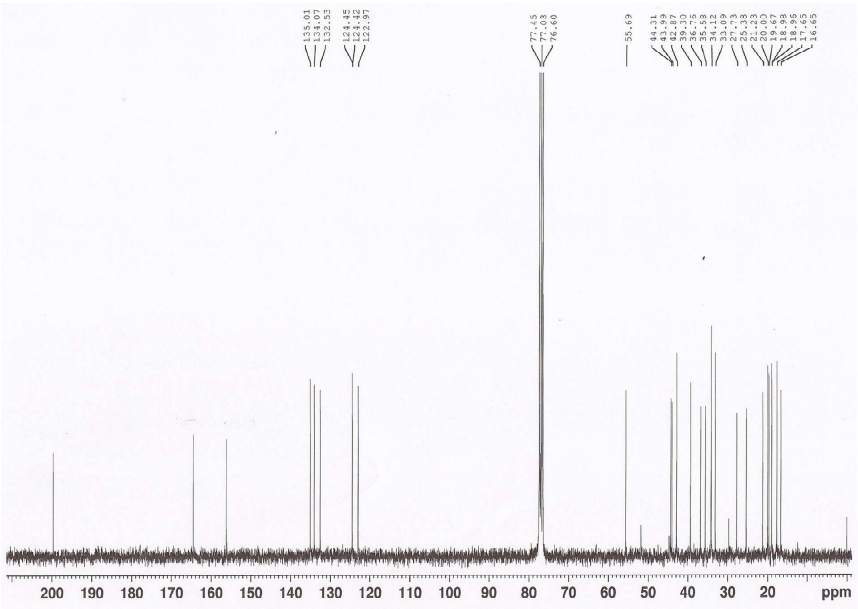

**Figure S22.** $^{1}$H NMR spectrum of cyathisterone ($CDCl_3$, 300.13 MHz).

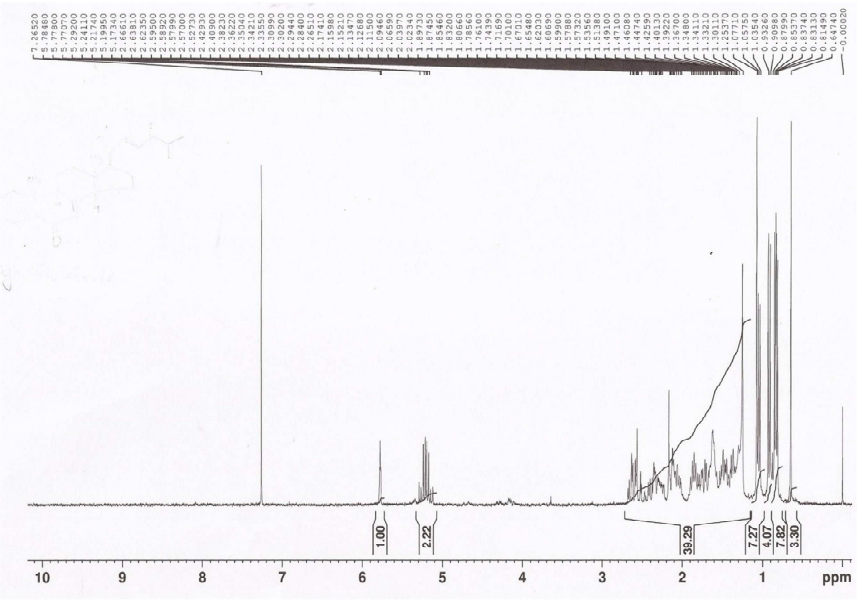


**Figure S23.** $^{13}$C NMR spectrum of cyathisterone ($CDCl_3$, 75.4 MHz).

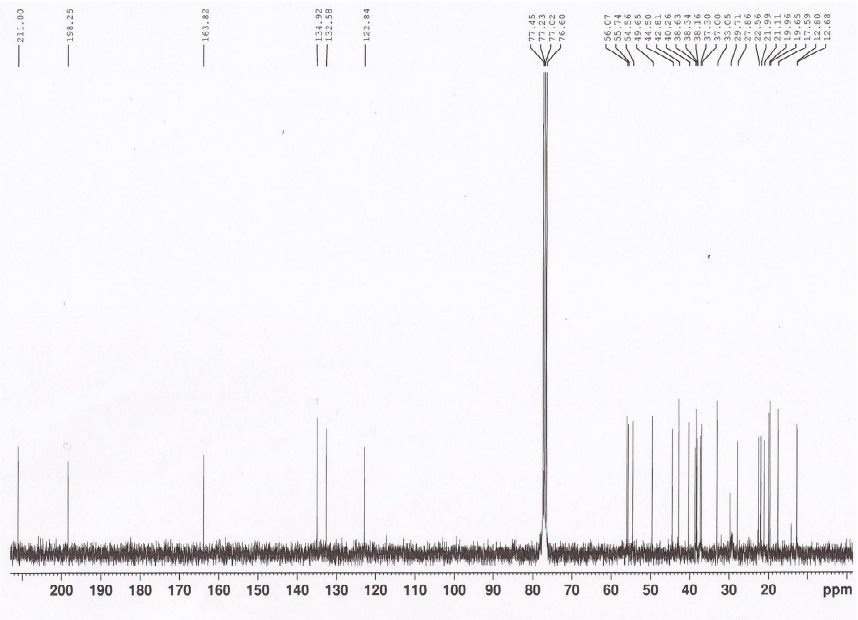

**Figure S24.** $^{1}H$ NMR spectrum of dehydromevalonic acid lactone ($CDCl_3$, 300.13 MHz).

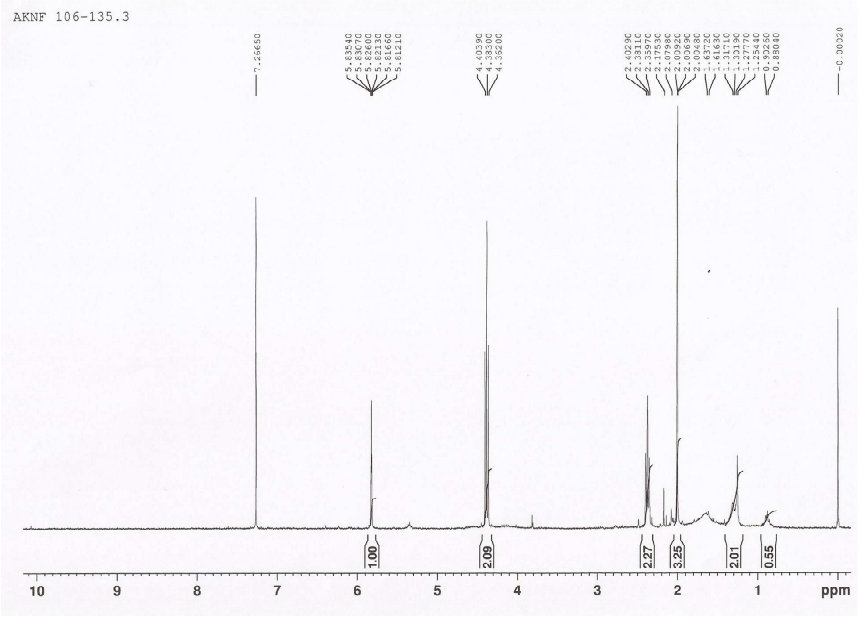


**Figure S25.** $^{13}C$ NMR spectrum of dehydromevalonic acid lactone ($CDCl_3$, 75.4 MHz).

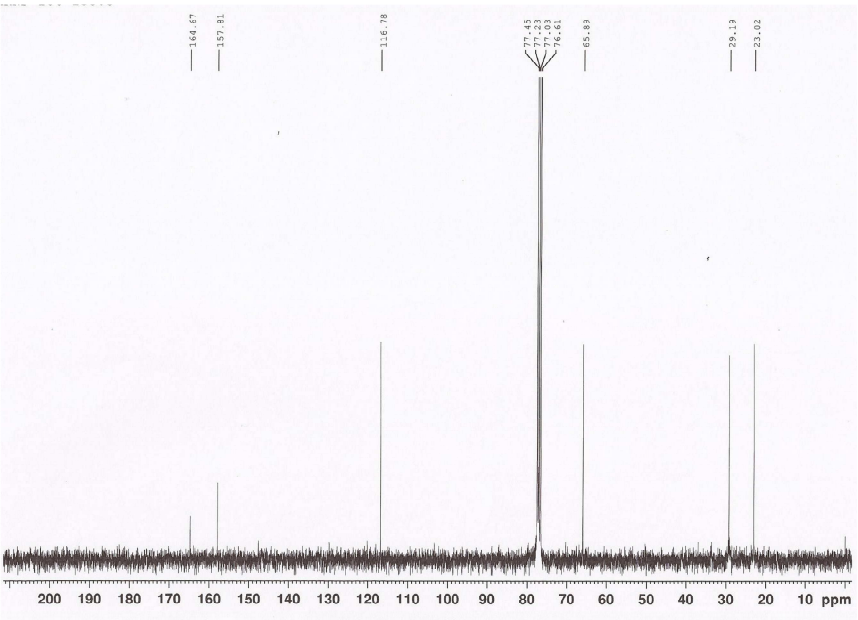

**Figure S26.** $^{1}$H NMR spectrum of aszonalenin ($CDCl_3$, 300.13 MHz).

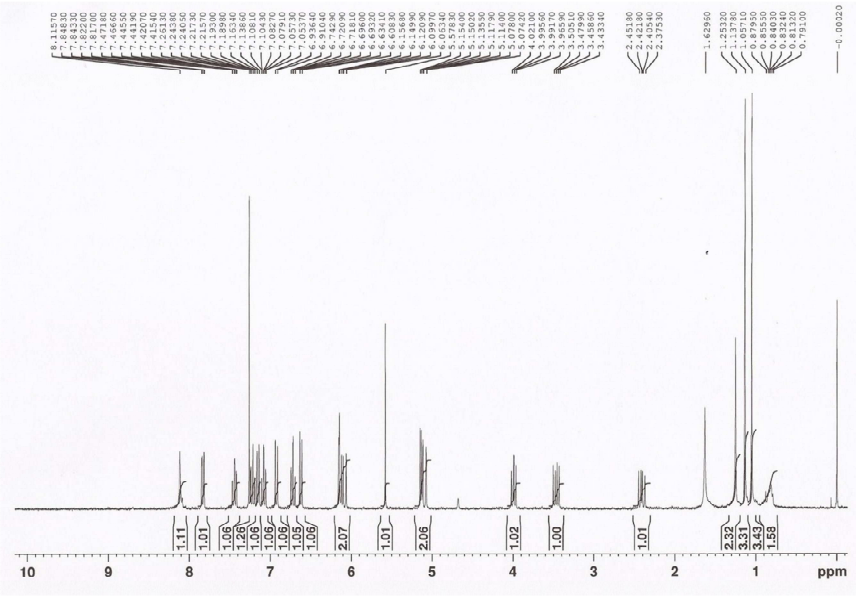

**Figure S27.** $^{1}$H NMR spectrum of aszonalenin ($CDCl_3$, 75.4 MHz).

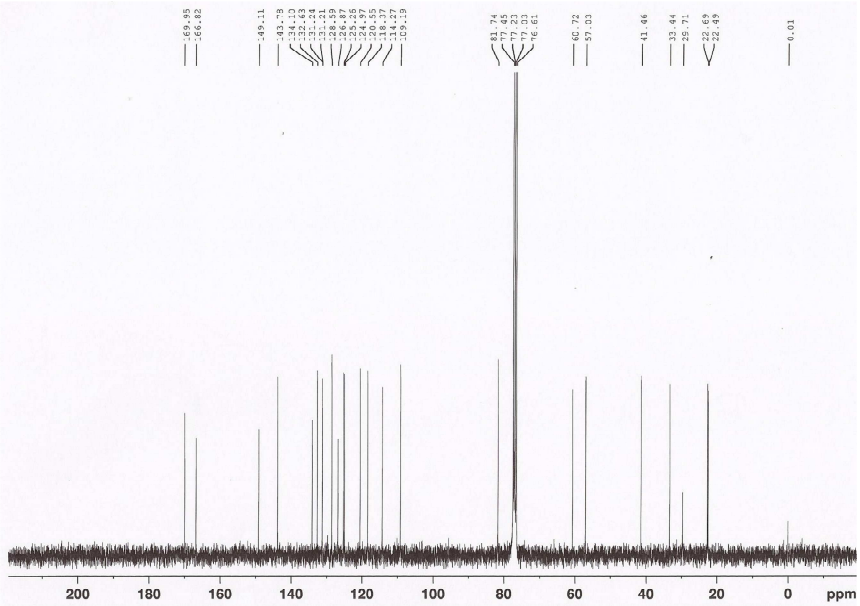

**Figure S28.** $^{1}H$ NMR spectrum of secalonic acid A ($CDCl_3$, 300.13 MHz).

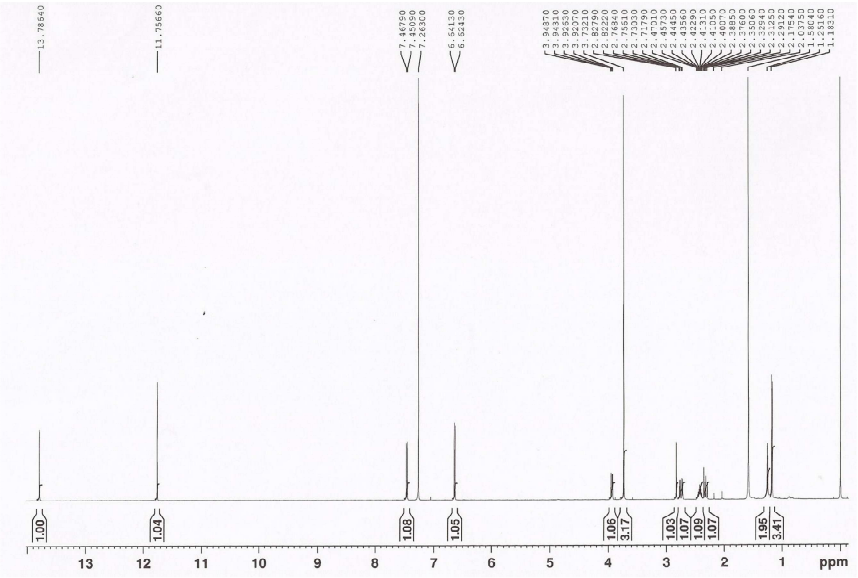

**Figure S29.** $^{13}C$ NMR spectrum of secalonic acid A ($CDCl_3$, 75.4 MHz).

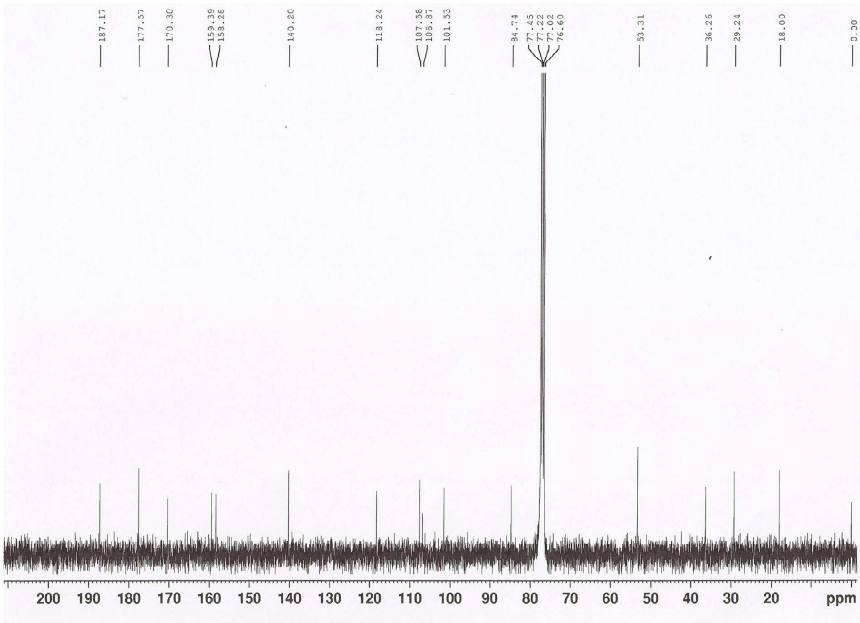

**Figure S30.** $^{1}$H NMR spectrum of fellutanine A (DMSO, 300.13 MHz).

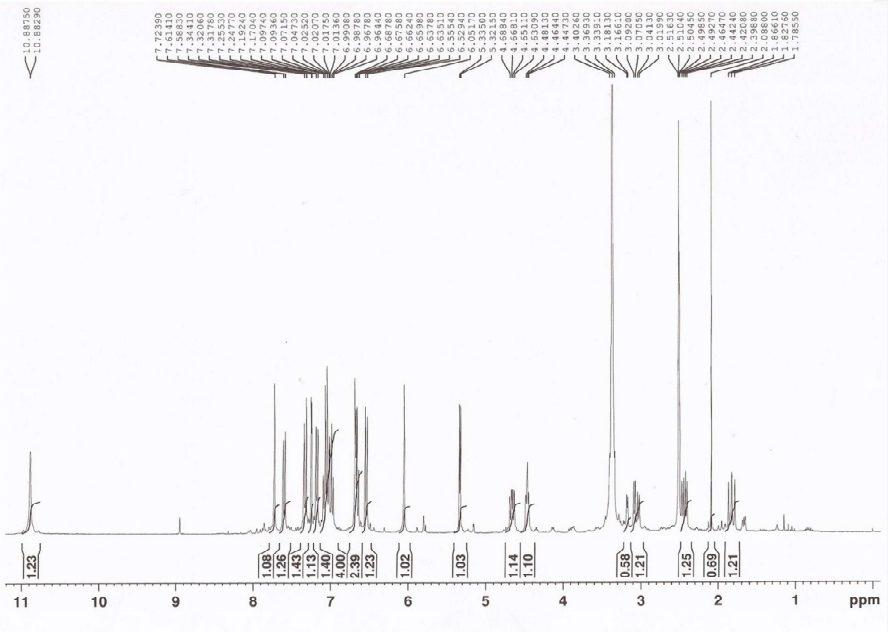


**Figure S31.** $^{13}$C NMR spectrum of fellutanine A (DMSO, 75.4 MHz).

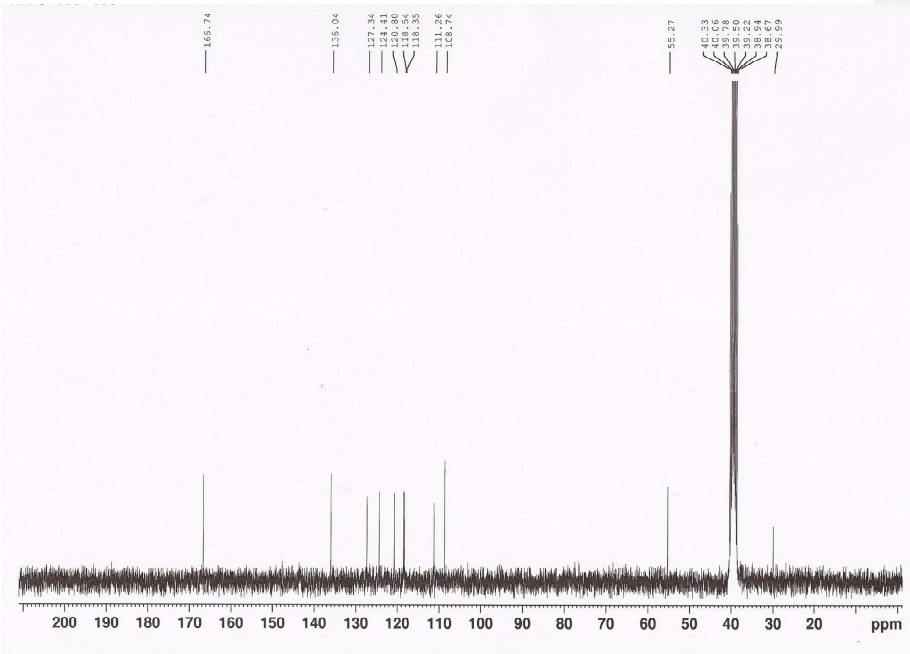

**Figure S32.** $^{1}$H NMR spectrum of **1** (DMSO, 500.13 MHz).

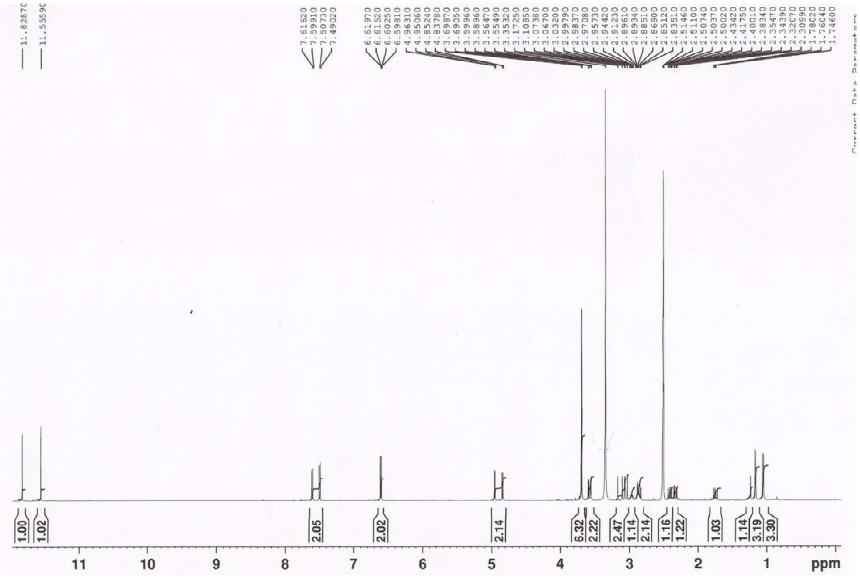


**Figure S33.** $^{13}$C NMR spectrum of **1** (DMSO, 125.8 MHz).

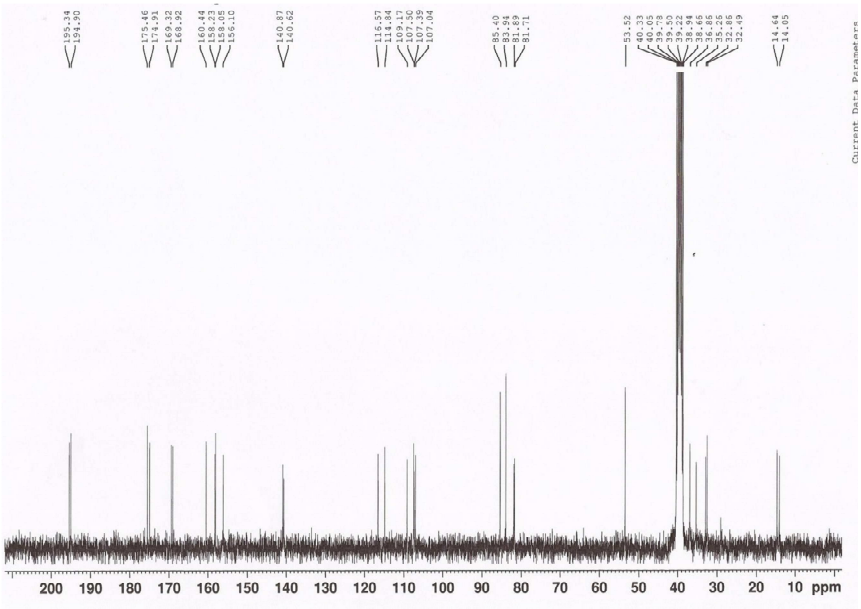

**Figure S34.** COSY spectrum of **1** (DMSO, 500.13 MHz).

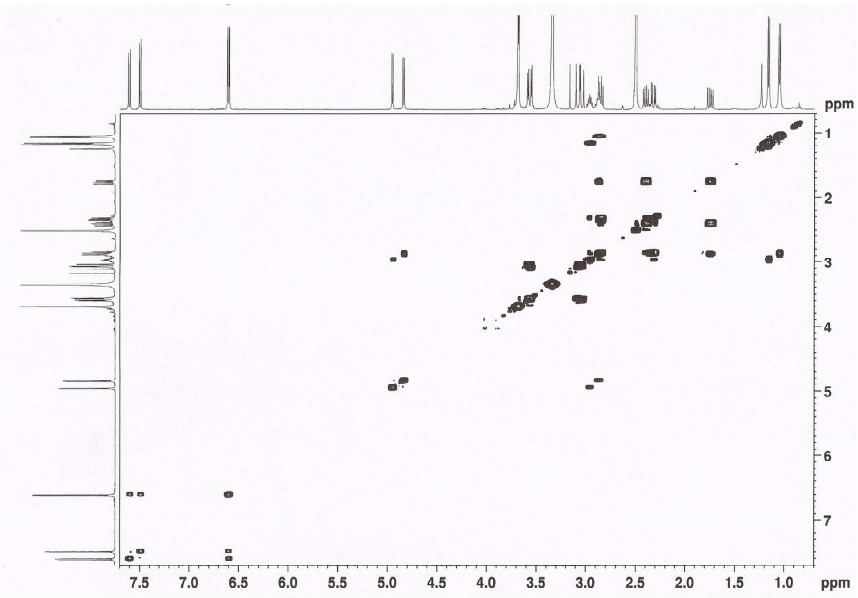


**Figure S35.** HSQC spectrum of **1** (DMSO, 500.13 MHz).

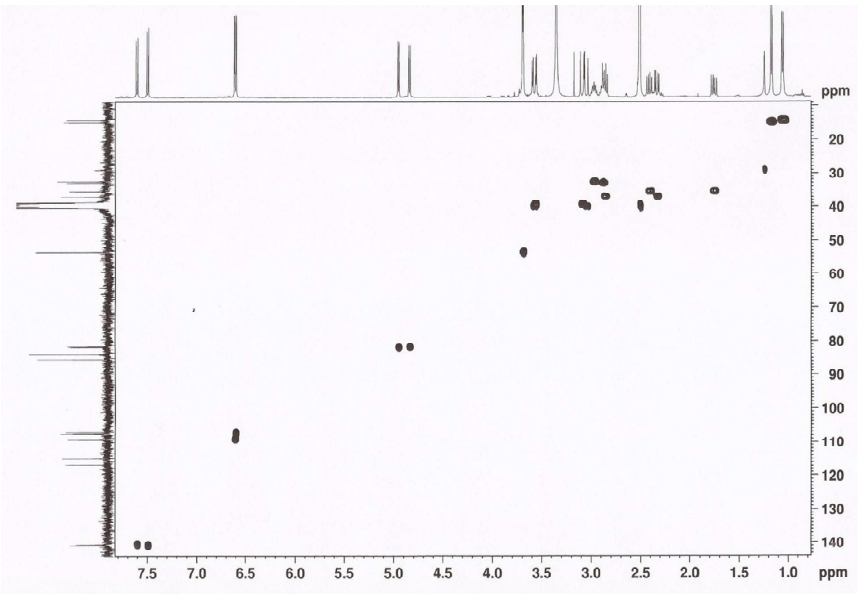

**Figure S36.** HMBC spectrum of **1** (DMSO, 500.13 MHz).

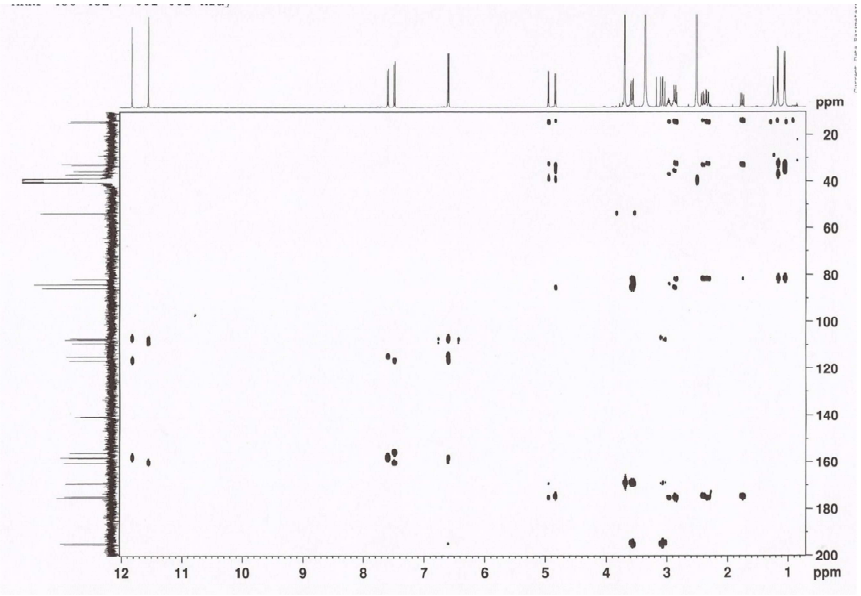


**Figure S37.** $^{1}$H NMR spectrum of **2** ($CDCl_3$, 500.13 MHz).

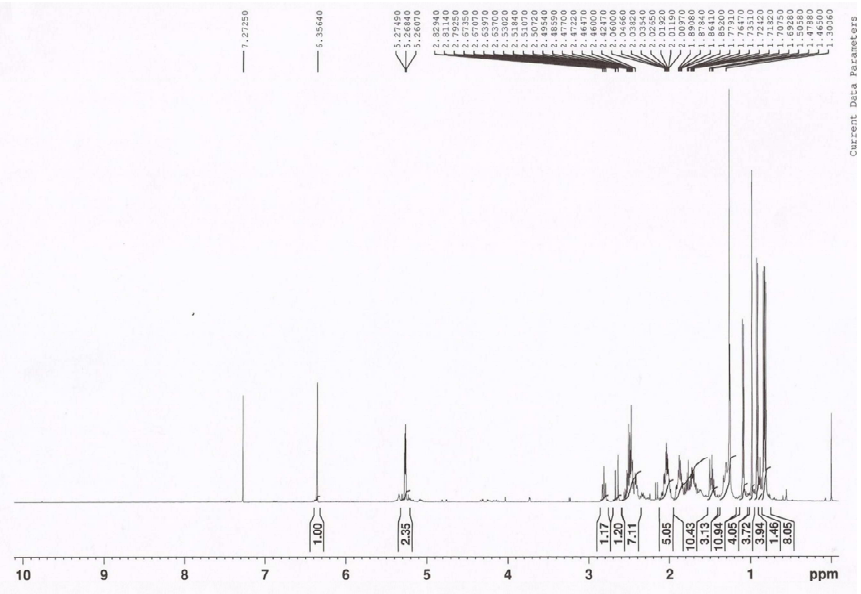

**Figure S38.** $^{13}C$ NMR spectrum of **2** ($CDCl_3$, 125.8 MHz).

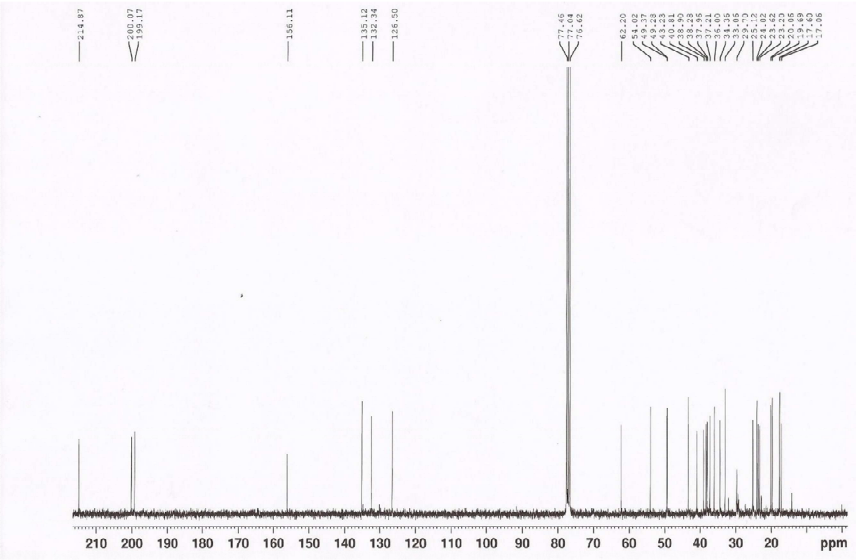


**Figure S39.** HSQC spectrum of **2** ($CDCl_3$, 125.8 MHz).

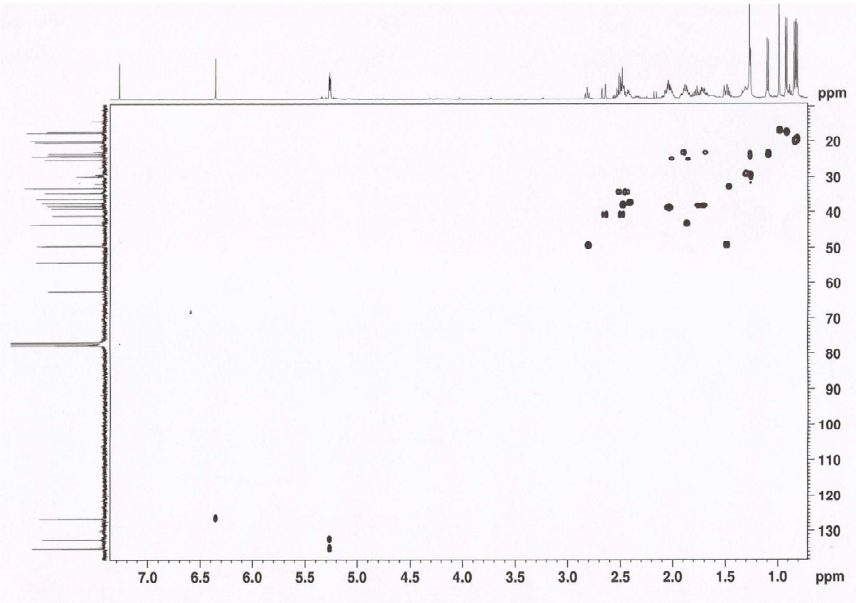

**Figure S40.** HMBC spectrum of **2** ($CDCl_3$, 125.8 MHz).

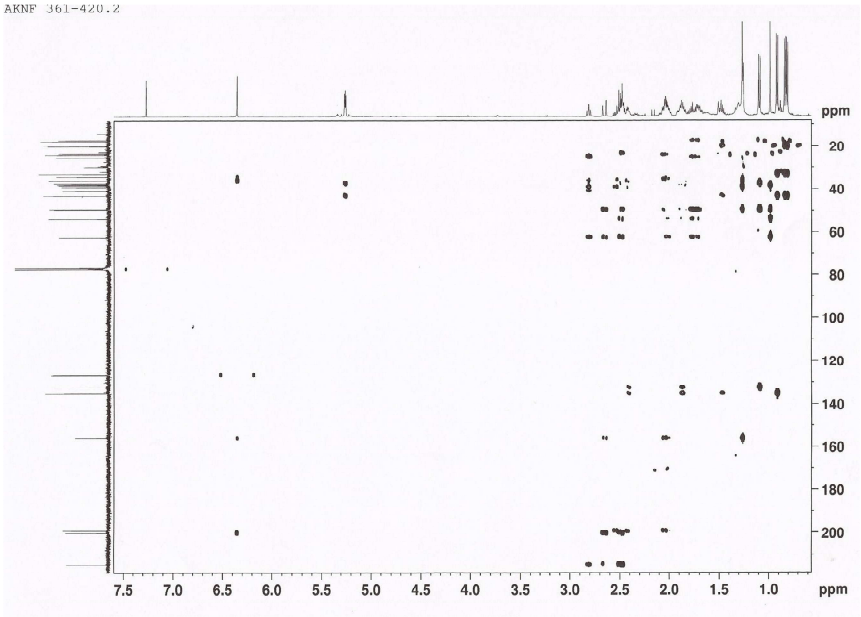


**Figure S41.** $^1H$ NMR spectrum of **3** ($CDCl_3$, 300.13 MHz).

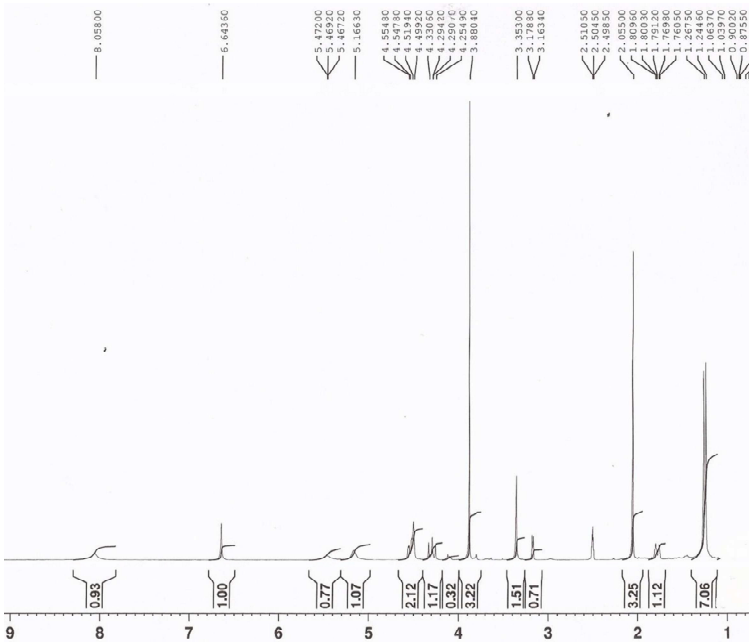

**Figure S42.** $^{13}C$ NMR spectrum of **3** ($CDCl_3$, 75.4 MHz).

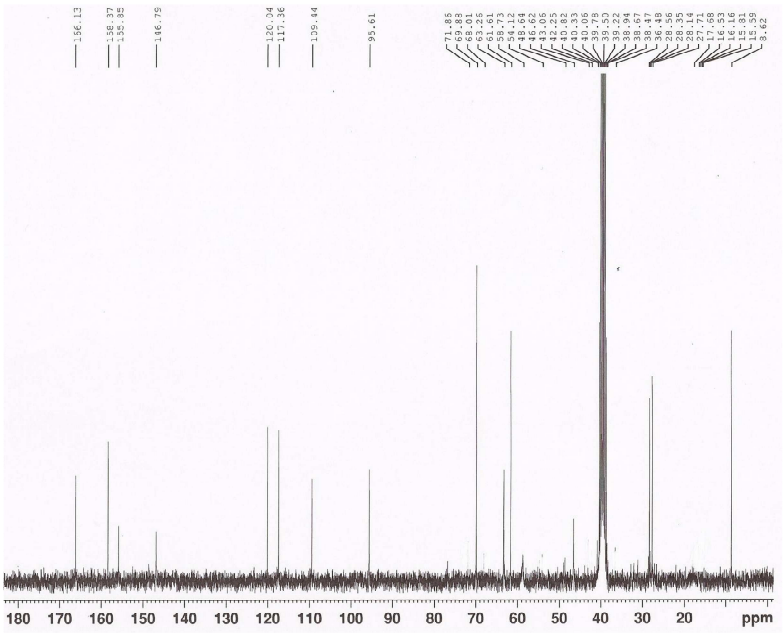


**Figure S43.** COSY spectrum of **3** ($CDCl_3$, 300.13 MHz).

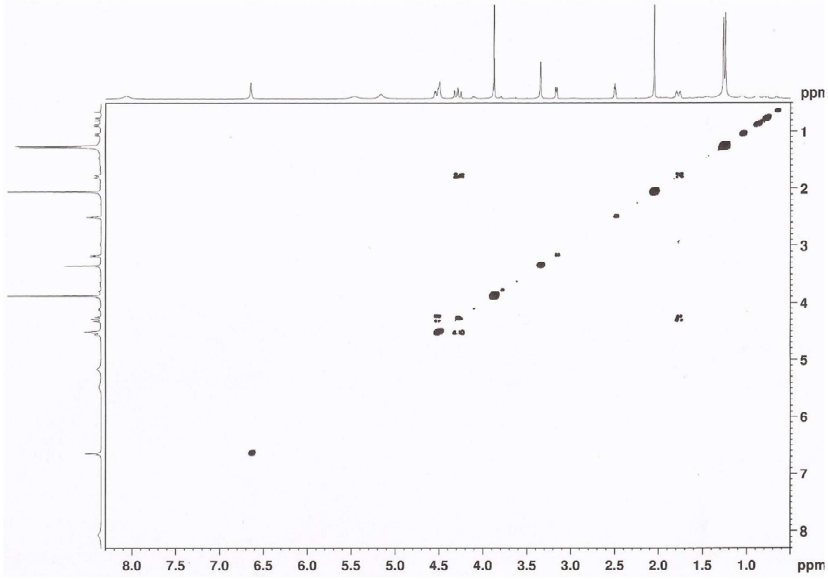

**Figure S44.** HSQC spectrum of **3** ($CDCl_3$, 300.13 MHz).

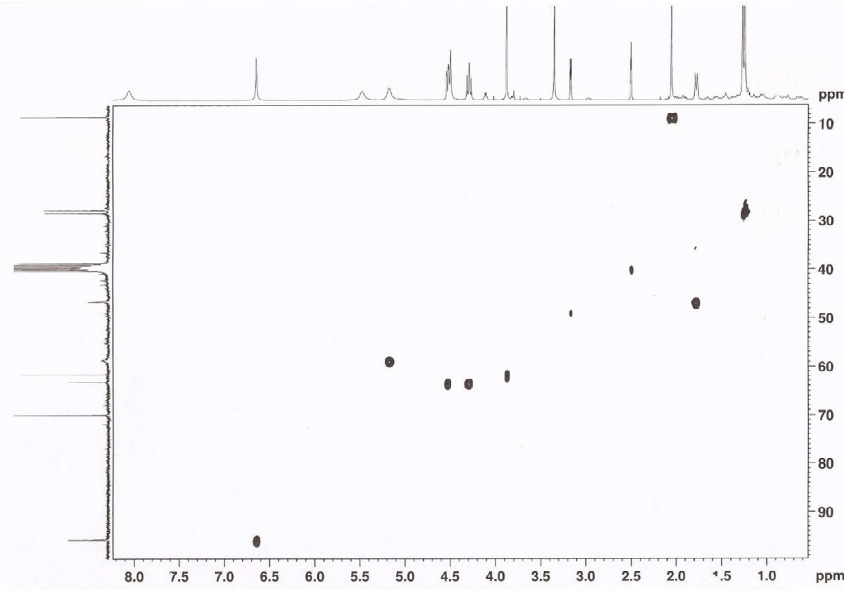


**Figure S45.** HMBC spectrum of **3** ($CDCl_3$, 300.13 MHz).

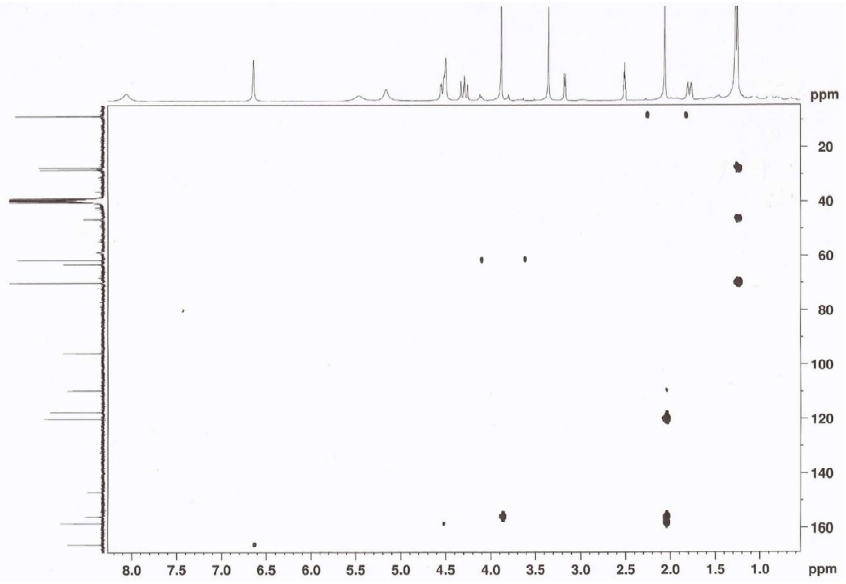

**Figure S46.** NOESY spectrum of **3** ($CDCl_3$, 300.13 MHz).

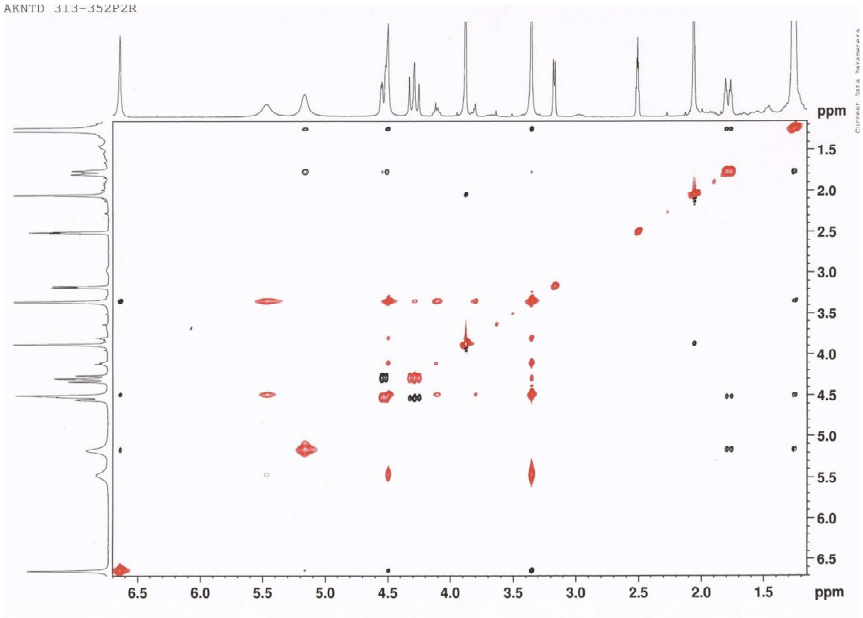


**Figure S47.** $^1H$ NMR spectrum of **4** ($CDCl_3$, 500.13 MHz).

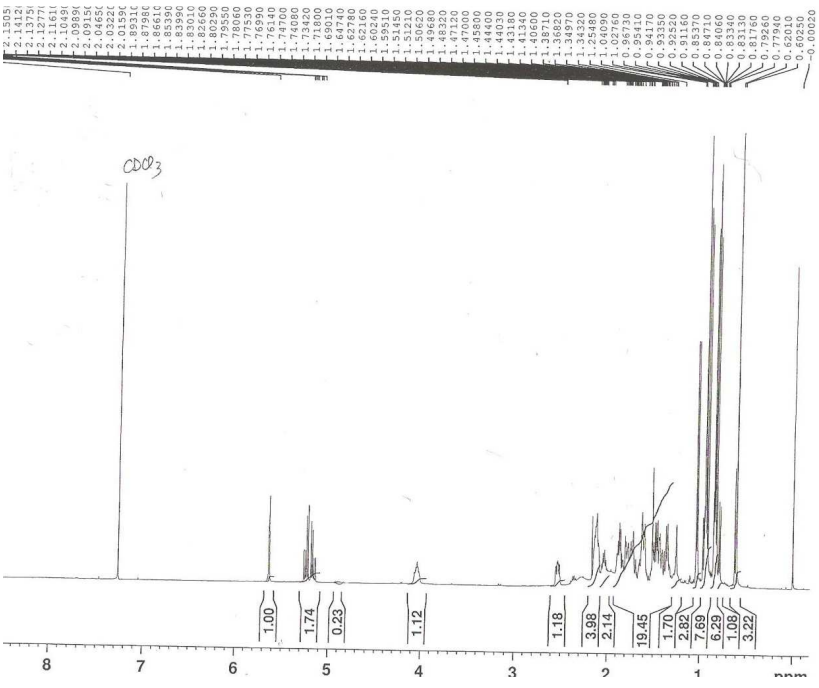

**Figure 48.** $^{13}C$ NMR spectrum of **4** ($CDCl_3$, 125.4 MHz).

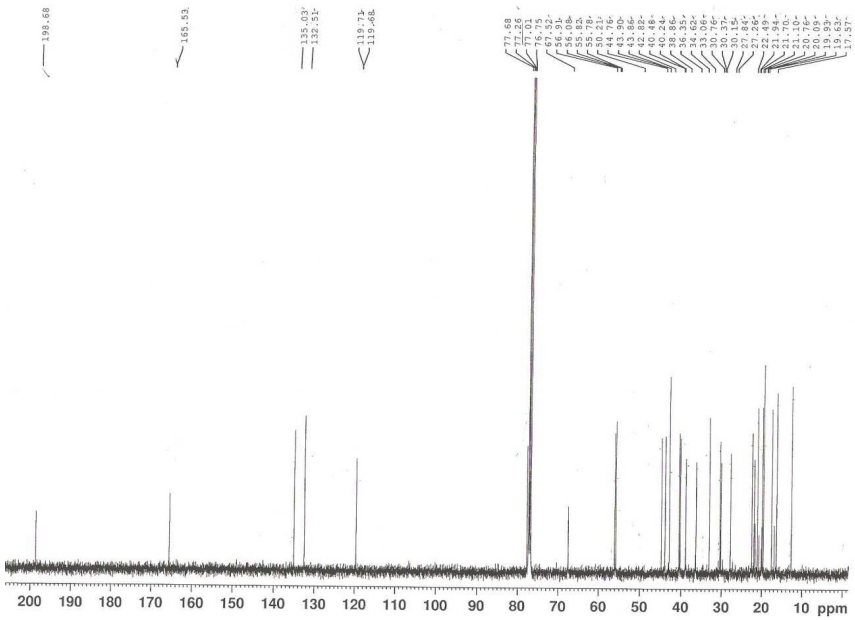


**Figure S49.** Ortep view of dankasterone A (**2)**

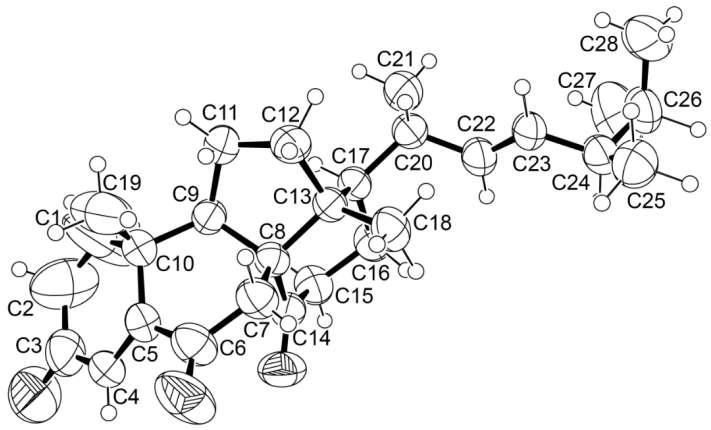

**Table S1**

$^{1}H$ and $^{13}C$ NMR ($CDCl_3$, 500 MHz and 125 MHz) and HMBC assignment for **2**

| Position | $\delta_C$, type | $\delta_H$, (*J* in Hz) | COSY | HMBC |
|---|---|---|---|---|
| 1 | 38.9, $CH_2$ | 2.05, m | H-2 | C-3, 5 |
| 2 | 34.4, $CH_2$ | 2.46, m | H-1 | |
| 3 | 199.2, CO | - | | |
| 4 | 126.5, CH | 6.36, s | - | C-2, 5, 6, 10 |
| 5 | 156.1, C | - | | |
| 6 | 200.1, CO | - | | |
| 7α | 40.8, $CH_2$ | 2.49, d (16.9) | H-7β | C-6, 8, 13 |
| β | | 2.66, dd (16.9, 1.4) | H-7α | C-5, 6, 8, 9 |
| 8 | 62.2, C | - | | |
| 9 | 49.3, CH | 2.81, brt (9.0) | H-11 | C-1, 7, 8, 10, 14, 19 |
| 10 | 36.0, C | - | | |
| 11 | 23.2, $CH_2$ | 1.68, m | H-9, 12 | |
| | | 1.88, m | H-9, 12 | |
| 12 | 38.3, $CH_2$ | 1.71, m | H-11 | |
| | | 1.76, m | H-11 | |
| 13 | 54.0, C | - | | |
| 14 | 214.9, CO | - | | |
| 15 | 38.0, $CH_2$ | 2.47, m | H-16 | C-14, 17 |
| 16 | 25.1 $CH_2$ | 1.85, m | H-15, 17 | |
| | | 2.05, m | H-15, 17 | |
| 17 | 49.4, CH | 1.48, m | H-16, 20 | |
| 18 | 17.1, $CH_3$ | 0.98, s | - | C-8, 12, 13, |
| 19 | 24.0, $CH_3$ | 1.26, s | - | C-1, 5, 9, 10 |
| 20 | 37.2, CH | 2.41, m | H-17, 21, 22 | C-22, 23 |
| 21 | 23.6, $CH_3$ | 1.09, d (7.0) | H-20 | C-17, 20, 23 |
| 22 | 135.1, CH | 5.27, m | H-20, 23 | C-24 |
| 23 | 132.3, CH | 527, m | H-22, 24 | C-20 |
| 24 | 43.2, CH | 1.87, m | H-23, 26 | |
| 25 | 33.1, CH | 1.46, m | H-24, 27, 28 | |
| 26 | 17.6, $CH_3$ | 0.91, d (6.9) | H-24 | C-22, 24, 25 |
| 27 | 20.1, $CH_3$ | 0.83, d (6.8) | H-25 | C-24, 25, 28 |
| 28 | 19.7, $CH_3$ | 0.81, d (6.8) | H-25 | C-24, 25, 27 |

**Table S2**

$^{1}H$ and $^{13}C$ NMR ($CDCl_3$, 500 MHz and 125 MHz) of **4.**

| Position | $\delta_C$, type | $\delta_H$, (*J* in Hz) | HMBC |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | 27.8, $CH_2$ | 1.35, m<br>1.77, m | |
| 2 | 30.4, $CH_2$ | 1.61, m<br>1.79, m | |
| 3 | 67.5, CH | 4.04, q (6.4) | |
| 4 | 36.4, CH2 | 1.61, m<br>1.79, m | |
| 5 | 77.7, C | - | |
| 6 | 198.7, CO | - | |
| 7 | 119.7, CH | 5.63, brs | C-5, 9, 14 |
| 8 | 165.5, C | - | |
| 9 | 43.9, CH | 2.53, ddd (11.8, 7.9, 2.2) | C-7, 8, 10, 11, 19 |
| 10 | 40.5, C | - | |
| 11 | 21.9, $CH_2$ | 1.61, m<br>1.72, m | |
| 12 | 38.9, $CH_2$ | 1.43, m<br>2.10, m | |
| 13 | 44.8, C | - | |
| 14 | 55.8, CH | 2.13, m | |
| 15 | 22-5, $CH_2$ | 1.35, m<br>1.77, m | |
| 16 | 30.2, $CH_2$ | 1.42, m<br>1.87, m | |
| 17 | 56.1, CH | 1.35, m | |
| 18 | 12.7, $CH_3$ | 0.60, s | C-12, 13, 17 |
| 19 | 16.4, $CH_3$ | 0.94, s | C-1, 5, 7 |
| 20 | 40.2, CH | 2.03, m | |
| 21 | 21.1, $CH_3$ | 1.03, d (6.6) | C-17, 20 |
| 22 | 135.0, CH | 5.16, dd (15.3, .6) | C-17, 20, 21, 24 |
| 23 | 132.5, CH | 5.24, dd (15.3, 7.6) | C-20, 24, 25, 26 |
| 24 | 42.8, CH | 2.03, m | |
| 25 | 33.1, CH | 1.47, m | |
| 26 | 17.6, $CH_3$ | 0.92, d (6.8) | C-23, 24, 25 |
| 27 | 19.9, $CH_3$ | 0.84, d (6.9) | C-24, 25, 28 |
| 28 | 19.6, $CH_3$ | 0.82, d (6.9) | C-24, 25, 27 |