

# Supporting Information

## Characterization of *Conyza bonariensis* allelochemicals against broomrape weeds

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### Supporting Information list

**Figure S1.** <sup>1</sup>H-NMR spectrum of (4Z)-lachnophyllum methyl ester (**1**) recorded in CDCl<sub>3</sub> at 500 MHz.

**Figure S2.** ESI MS spectrum of (4Z)-lachnophyllum methyl ester (**1**) recorded in positive modality.

**Figure S3.** <sup>1</sup>H-NMR spectrum of (4Z)-lachnophyllum lactone (**2**) recorded in CDCl<sub>3</sub> at 500 MHz.

**Figure S4.** ESI MS spectrum of (4Z)-lachnophyllum lactone (**2**) recorded in positive modality.

**Figure S5.** <sup>1</sup>H-NMR spectrum of (4Z,8Z)-matricaria lactone (**3**) recorded in CDCl<sub>3</sub> at 500 MHz.

**Figure S6.** ESI MS spectrum of (4Z,8Z)-matricaria lactone (**3**) recorded in positive modality.

**Figure S7.** <sup>1</sup>H-NMR spectrum of (4E,8Z)-matricaria lactone (**4**) recorded in CDCl<sub>3</sub> at 500 MHz.

**Figure S8.** ESI MS spectrum of (4E,8Z)-matricaria lactone (**4**) recorded in positive modality.

**Figure S9.** <sup>1</sup>H-NMR spectrum of methyl 4-hydroxy-3-methoxybenzoate (**5**) recorded in CDCl<sub>3</sub> at 500 MHz.

**Figure S10.** ESI MS spectrum of methyl 4-hydroxy-3-methoxybenzoate (**5**) recorded in positive modality.

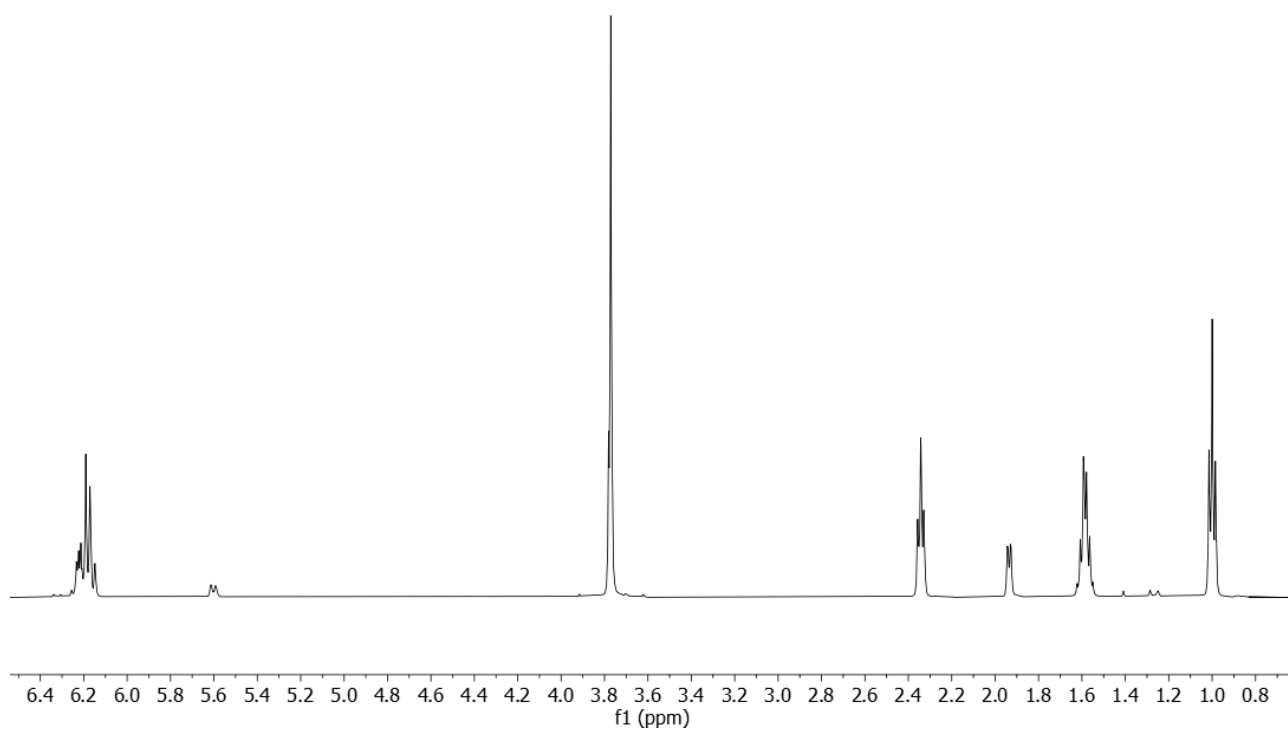
**Figure S11.** <sup>1</sup>H-NMR spectrum of methyl 4-hydroxybenzoate (**6**) recorded in CDCl<sub>3</sub> at 500 MHz.

**Figure S12.** ESI MS spectrum of methyl 4-hydroxybenzoate (**6**) recorded in positive modality.

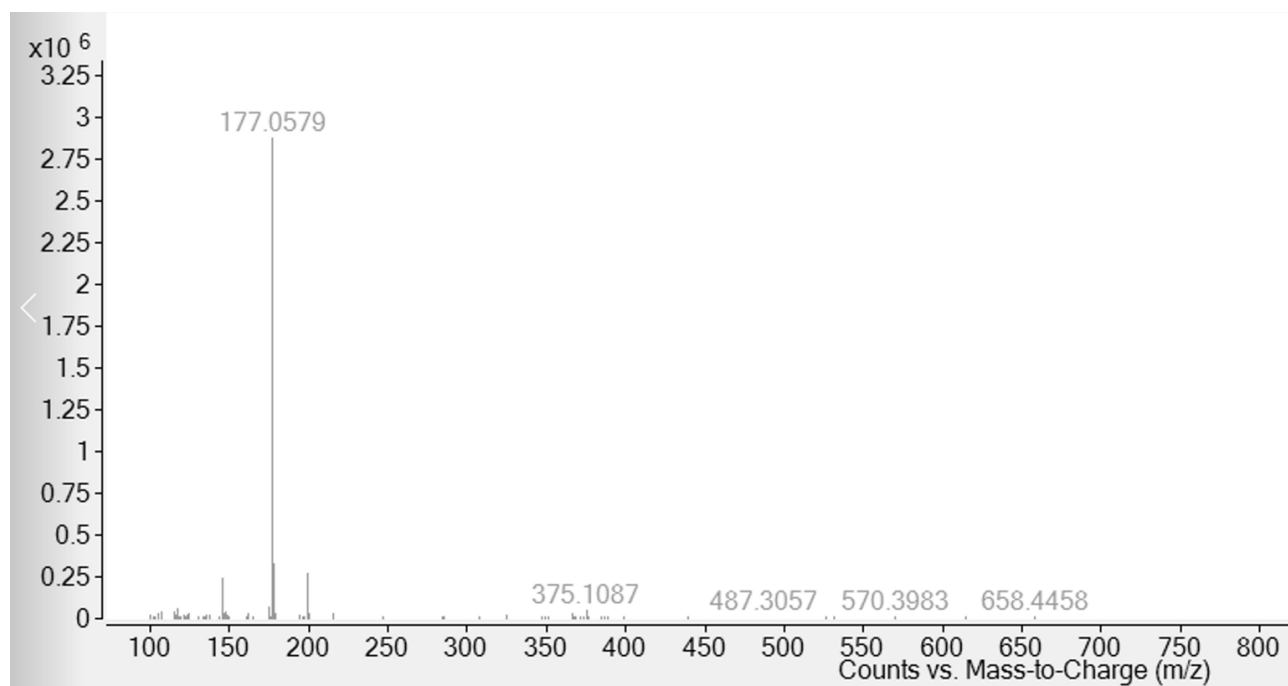
**Figure S13.** <sup>1</sup>H-NMR spectrum of hispidulin (**7**) recorded in CDCl<sub>3</sub> at 500 MHz.

**Figure S14.** <sup>13</sup>C-NMR spectrum of hispidulin (**7**) recorded in (CD<sub>3</sub>)<sub>2</sub>CO at 125 MHz.

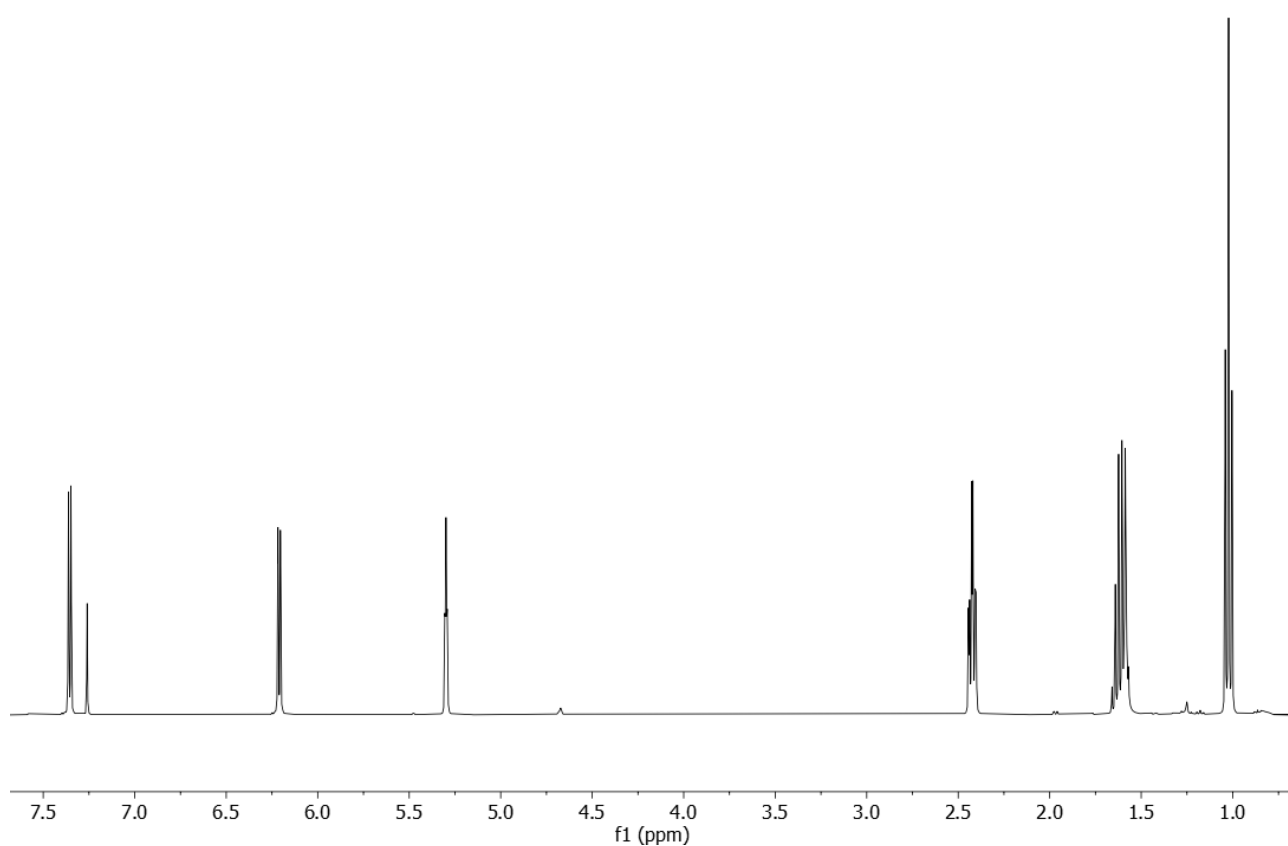
**Figure S15.** ESI MS spectrum of hispidulin (**7**) recorded in positive modality.



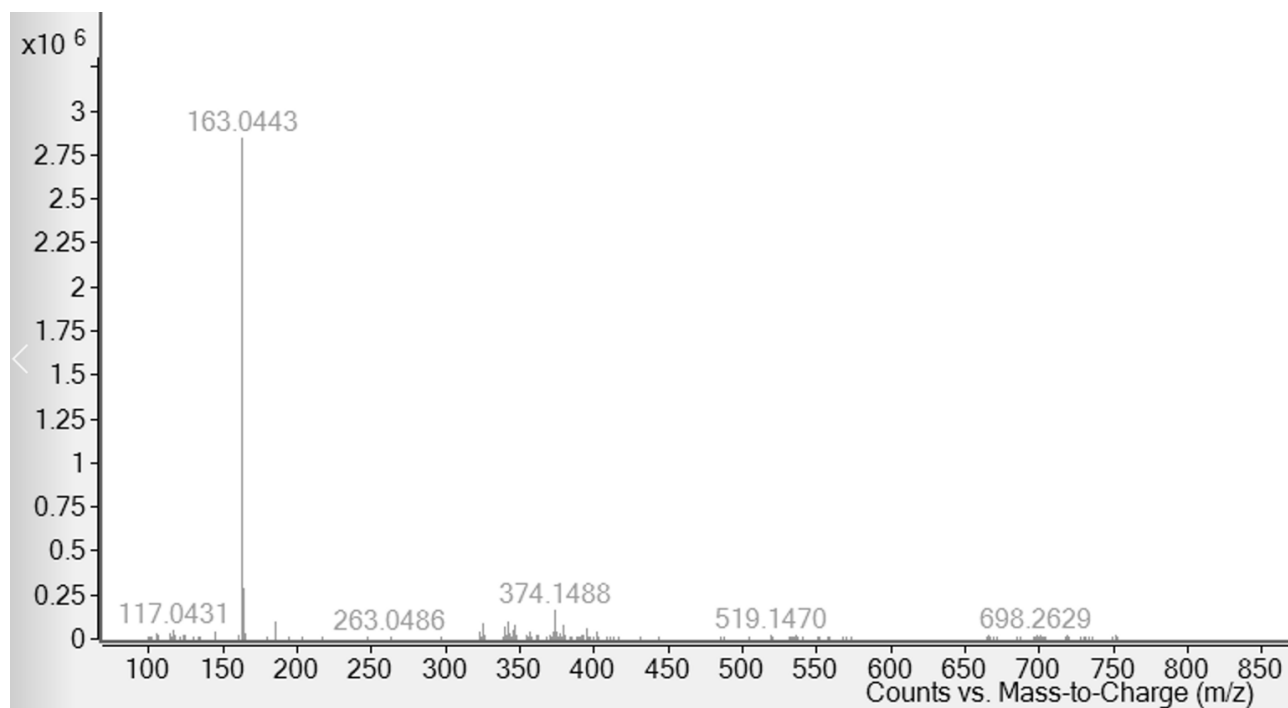
**Figure S1.**  $^1\text{H}$ -NMR spectrum of (4Z)-lachnophyllum methyl ester (**1**) recorded in  $\text{CDCl}_3$  at 500 MHz.



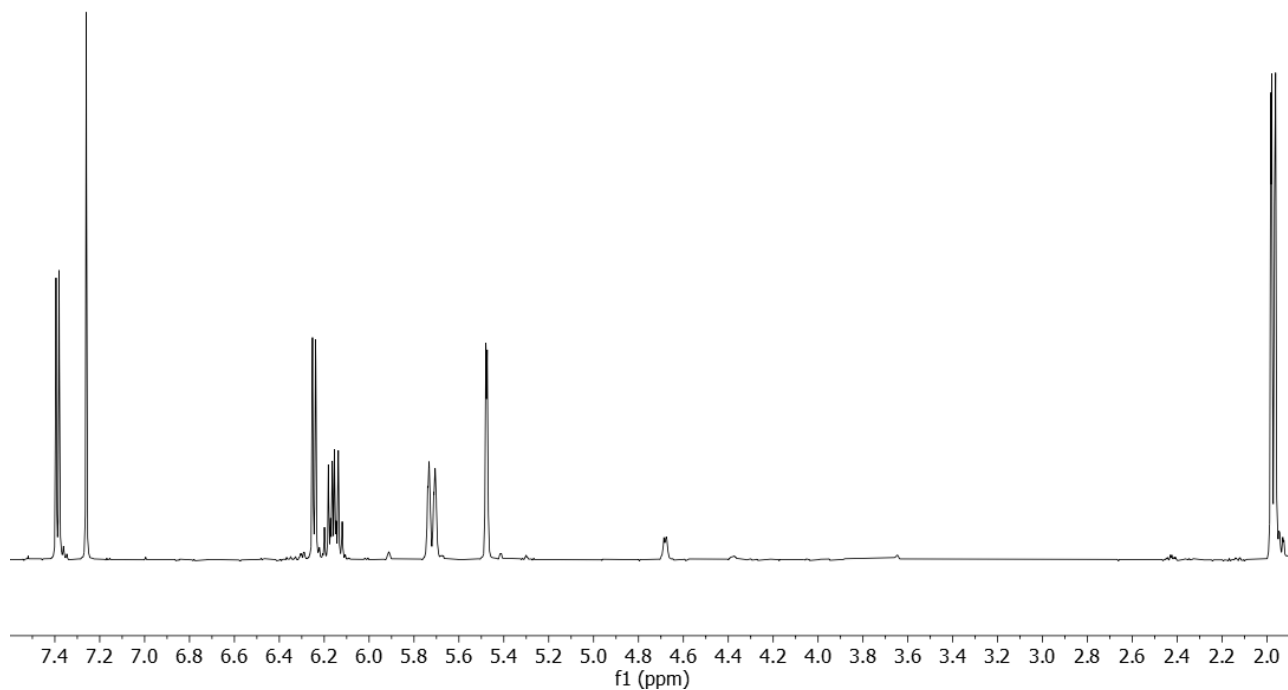
**Figure S2.** ESI MS spectrum of (4Z)-lachnophyllum methyl ester (**1**) recorded in positive modality.



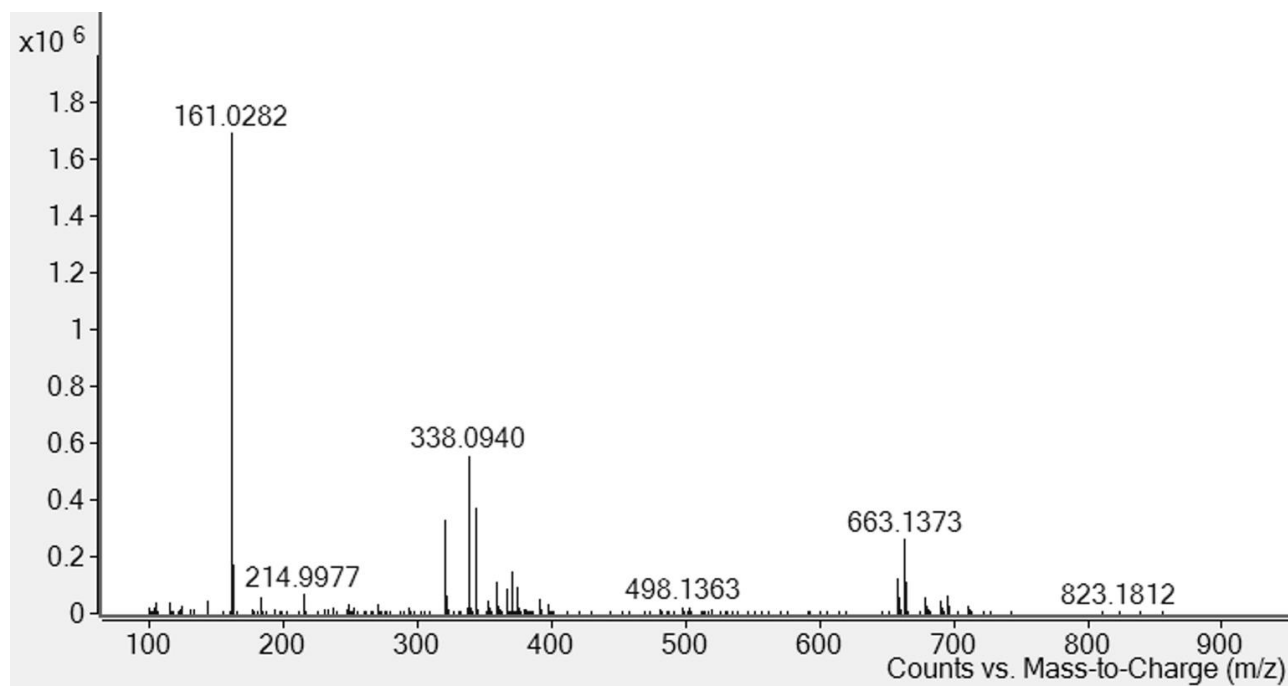
**Figure S3.**  $^1\text{H}$ -NMR spectrum of (4Z)-lachnophyllum lactone (**2**) recorded in  $\text{CDCl}_3$  at 500 MHz.



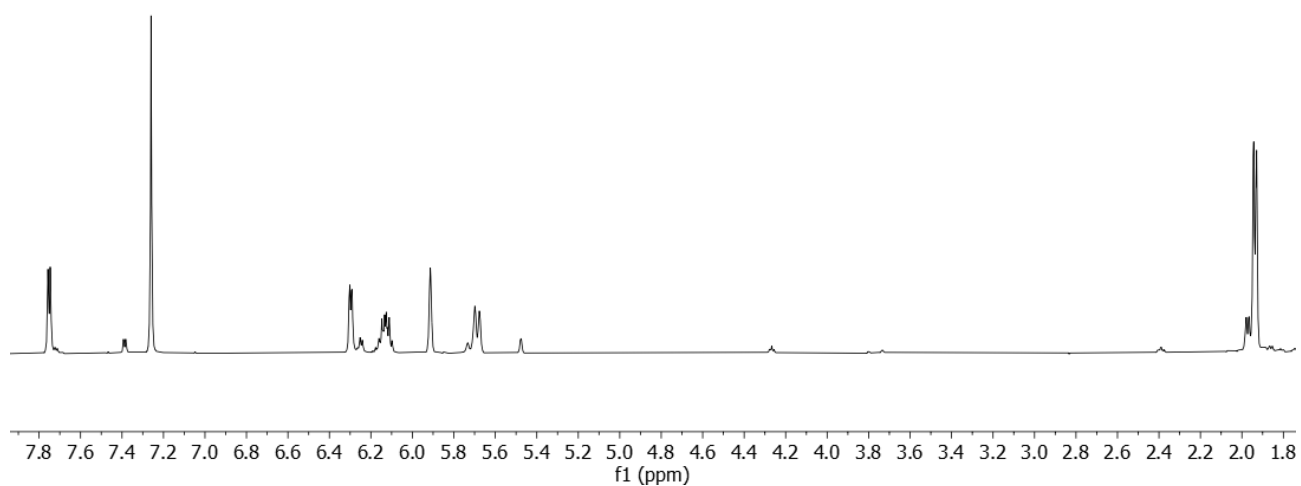
**Figure S4.** ESI MS spectrum of (4Z)-lachnophyllum lactone (**2**) recorded in positive modality.



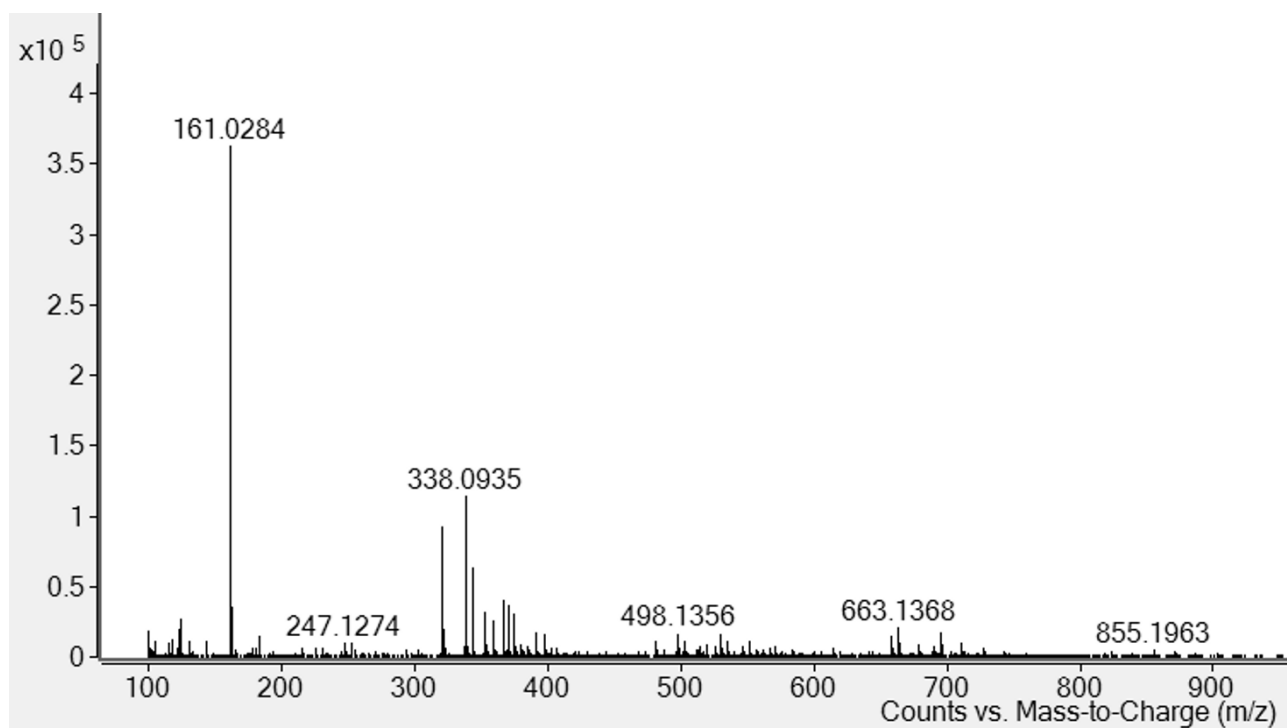
**Figure S5.** <sup>1</sup>H-NMR spectrum of (4Z,8Z)-matricaria lactone (**3**) recorded in CDCl<sub>3</sub> at 500 MHz.



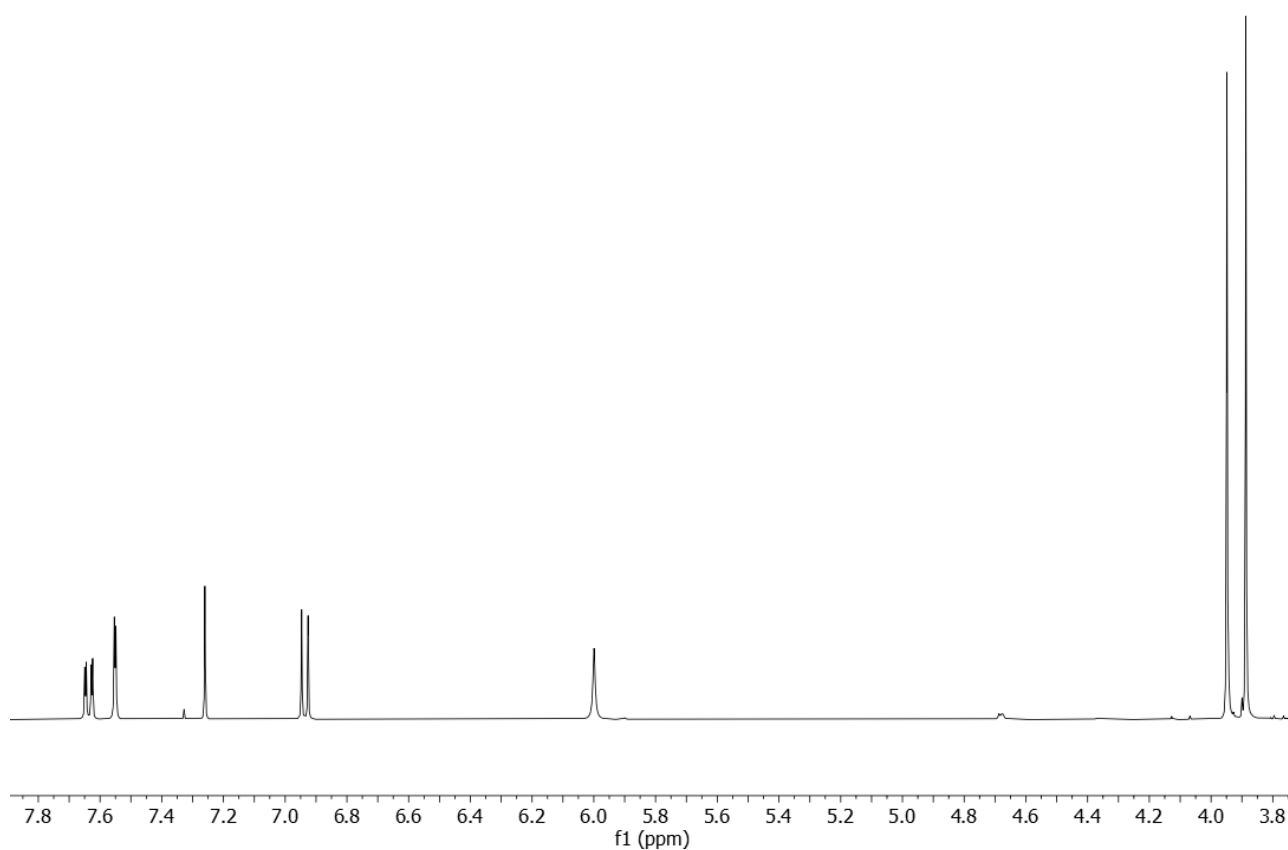
**Figure S6.** ESI MS spectrum of (4Z,8Z)-matricaria lactone (**3**) recorded in positive modality.



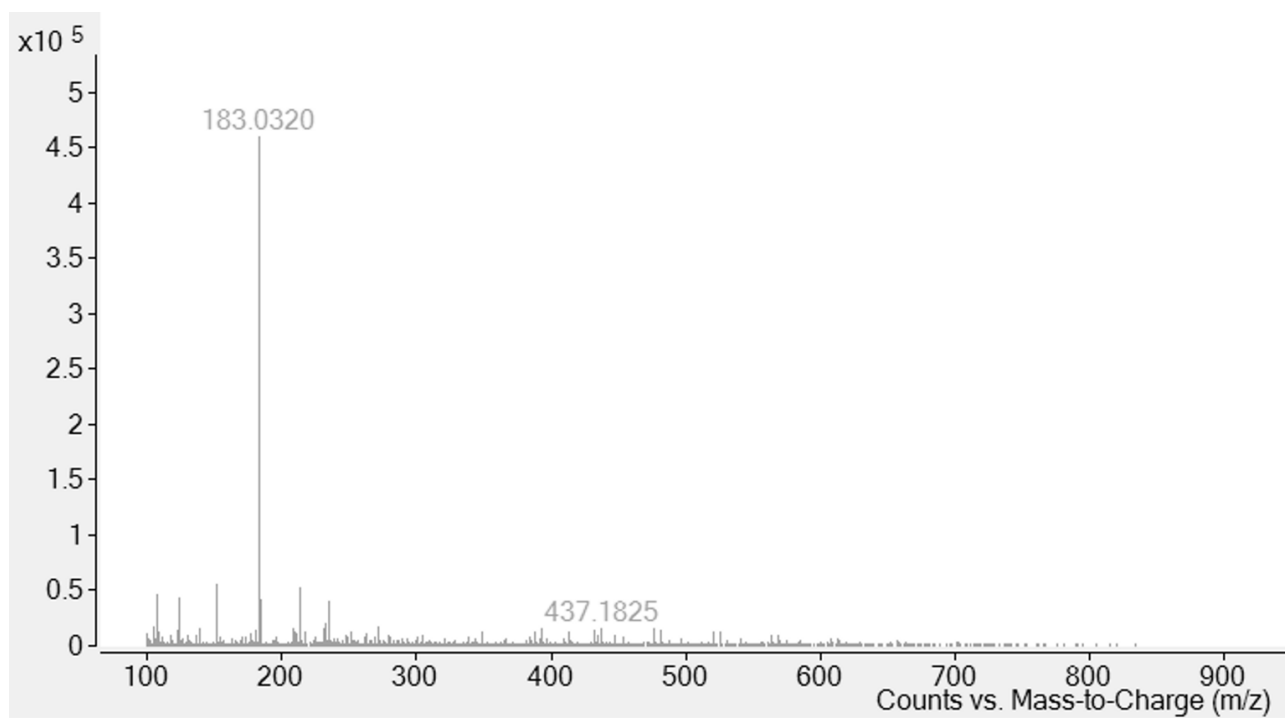
**Figure S7.** <sup>1</sup>H-NMR spectrum of (4*E*,8*Z*)-matricaria lactone (**4**) recorded in CDCl<sub>3</sub> at 500 MHz.



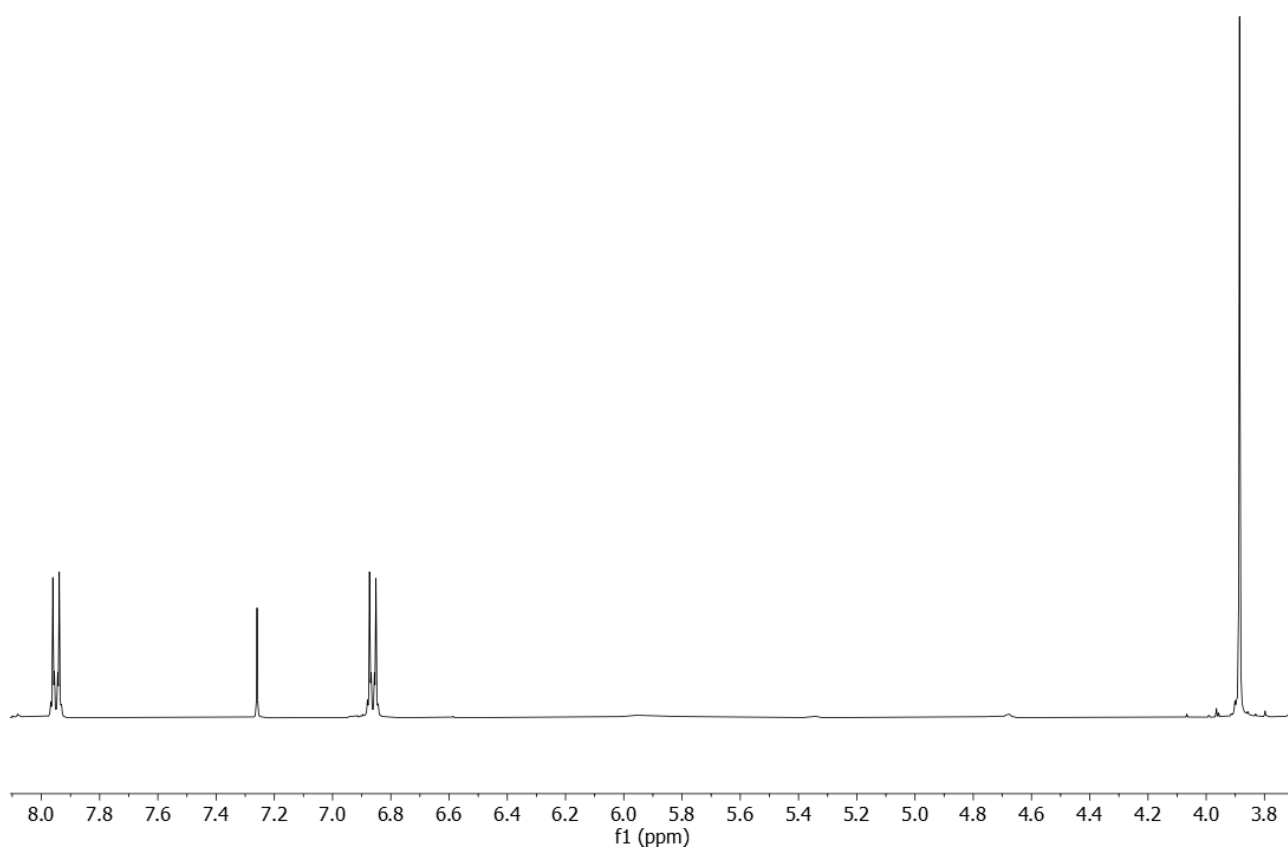
**Figure 8.** ESI MS spectrum of (4*E*, 8*Z*)-matricaria lactone (**4**) recorded in positive modality.



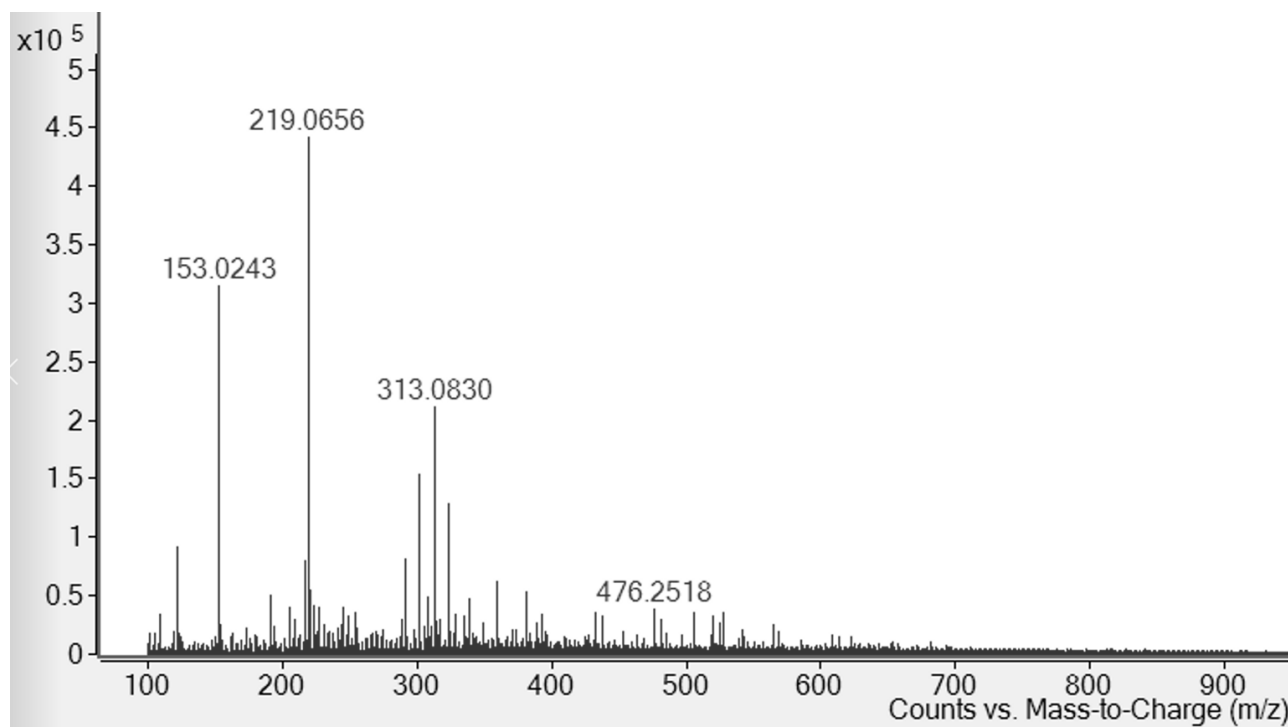
**Figure S9.** <sup>1</sup>H-NMR spectrum of methyl 4-hydroxy-3-methoxybenzoate (**5**) recorded in CDCl<sub>3</sub> at 500 MHz.



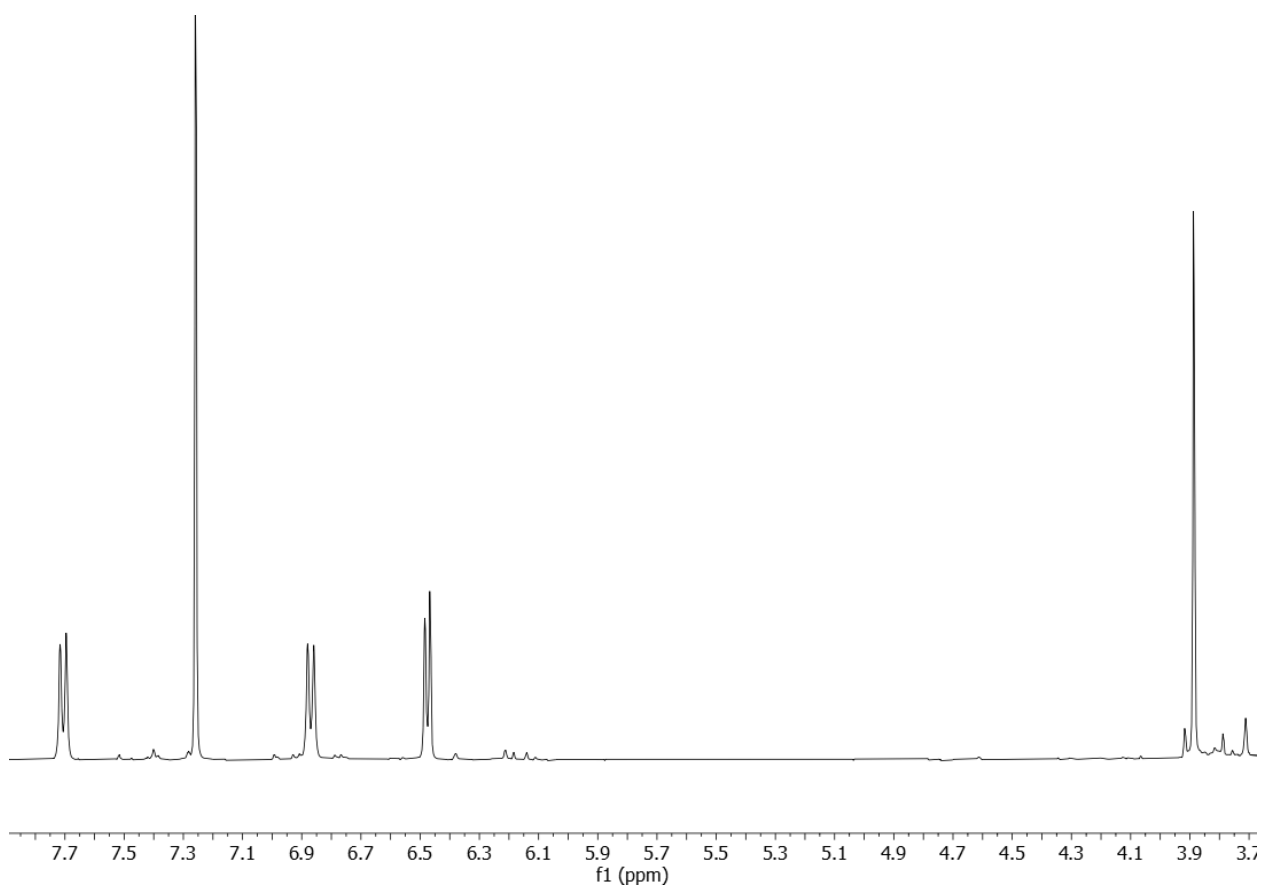
**Figure S10.** ESI MS spectrum of methyl 4-hydroxy-3-methoxybenzoate (**5**) recorded in positive modality.



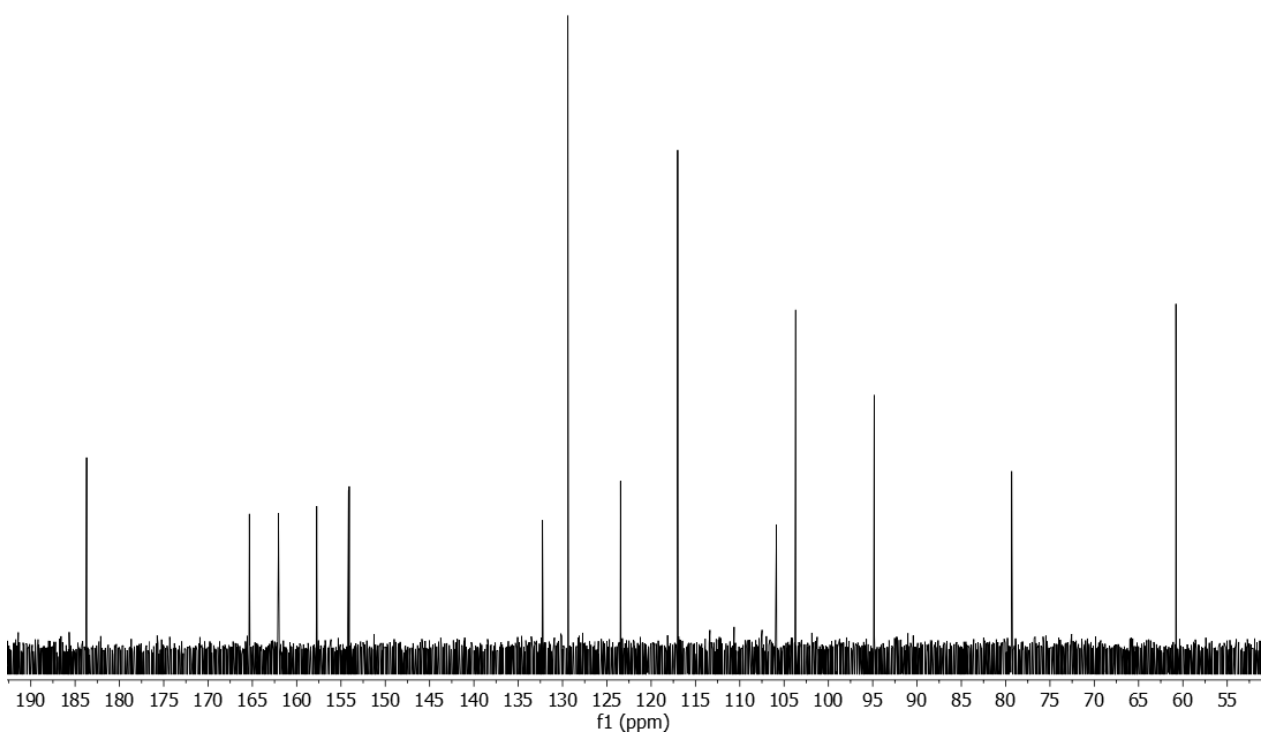
**Figure S11.** <sup>1</sup>H-NMR spectrum of methyl 4-hydroxybenzoate (**6**) recorded in CDCl<sub>3</sub> at 500 MHz.



**Figure S12.** ESI MS spectrum of methyl 4-hydroxybenzoate (**6**) recorded in positive modality.

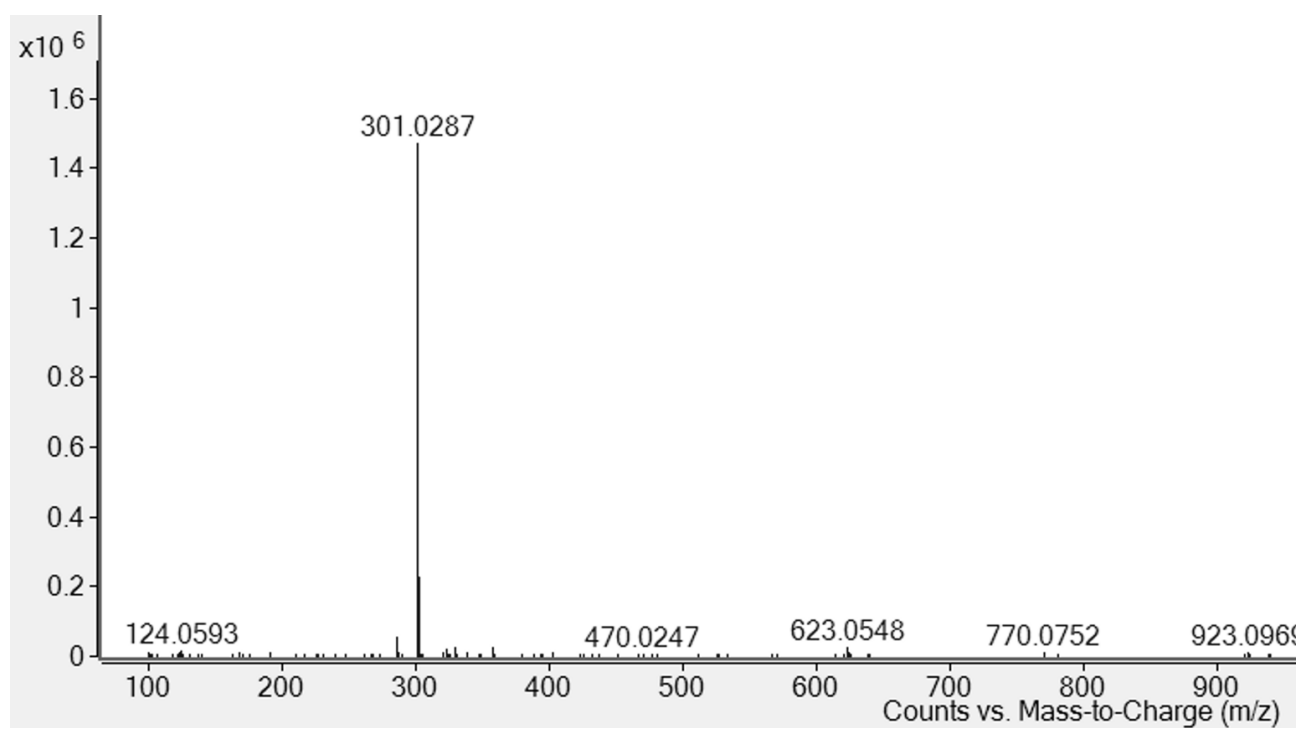


**Figure S13.** <sup>1</sup>H-NMR spectrum of hispidulin (**7**) recorded in CDCl<sub>3</sub> at 500 MHz.



**Figure S14.** <sup>13</sup>C-NMR spectrum of hispidulin (**7**) recorded in (CD<sub>3</sub>)<sub>2</sub>CO at 125 MHz.





**Figure S15.** ESI MS spectrum of hispidulin (7) recorded in positive modality.