

## Supplementary Material

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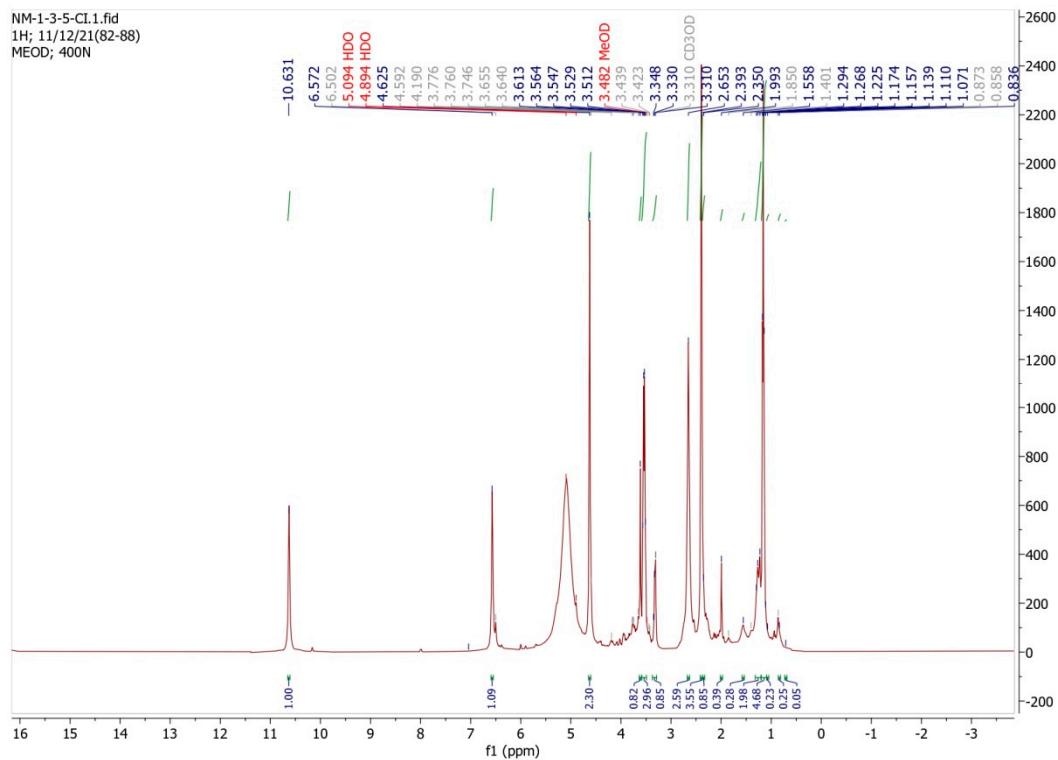
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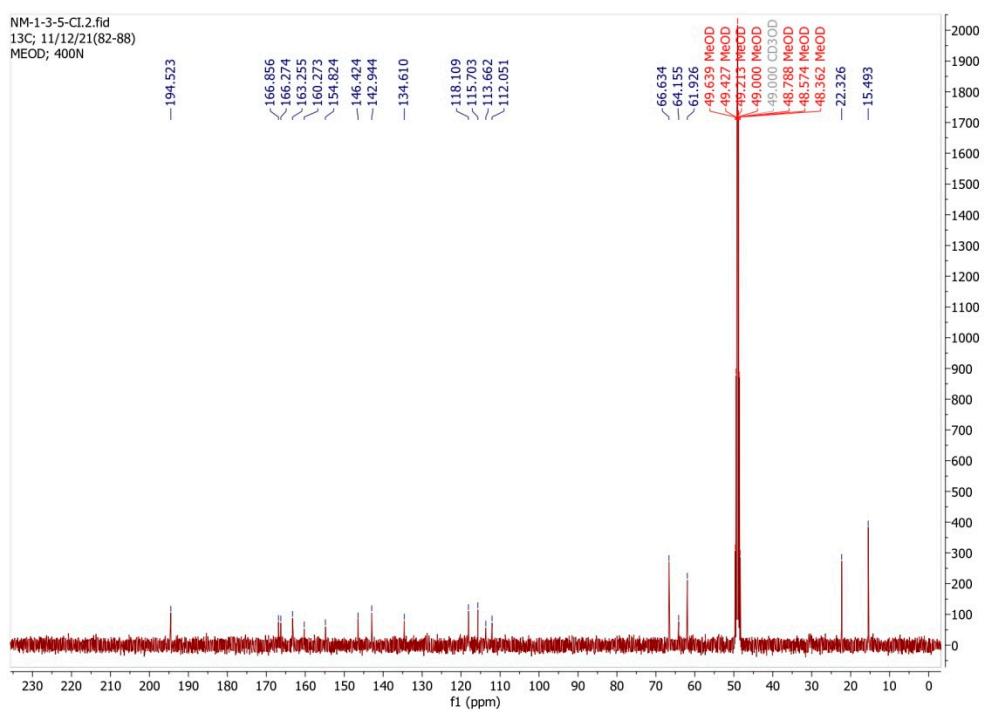
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<sup>4</sup> Division of Pharmacognosy, Department of BioMolecular Sciences, School of Pharmacy, The University of Mississippi, University, MS 38677, USA

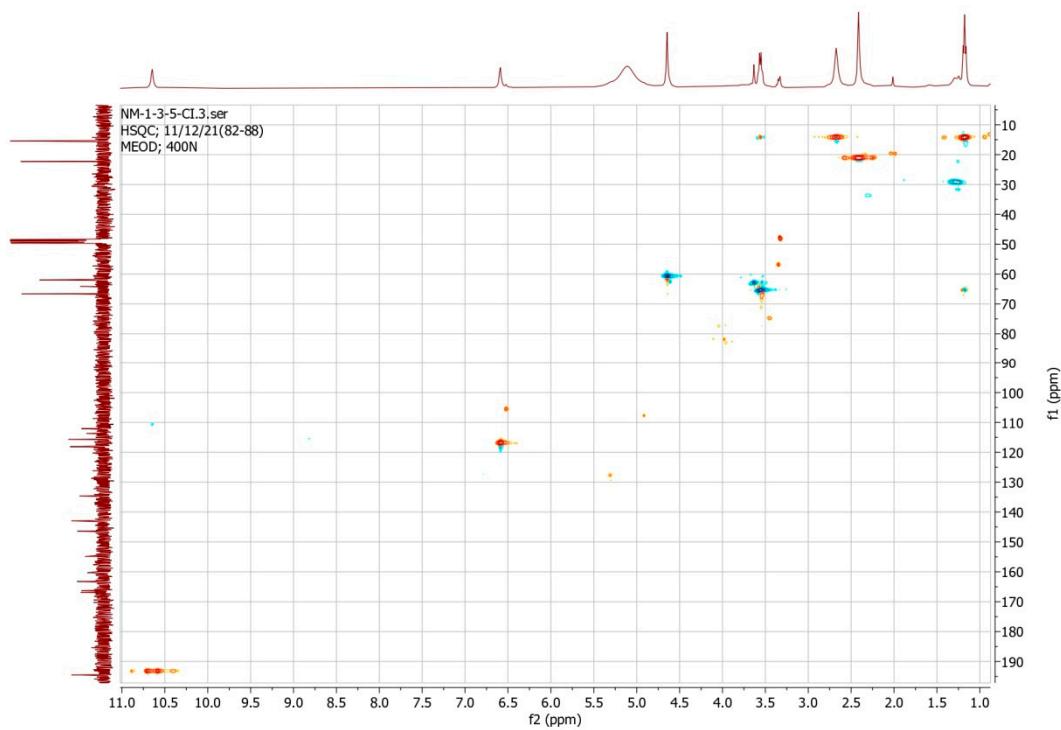
\* Correspondence: sross@olemiss.edu



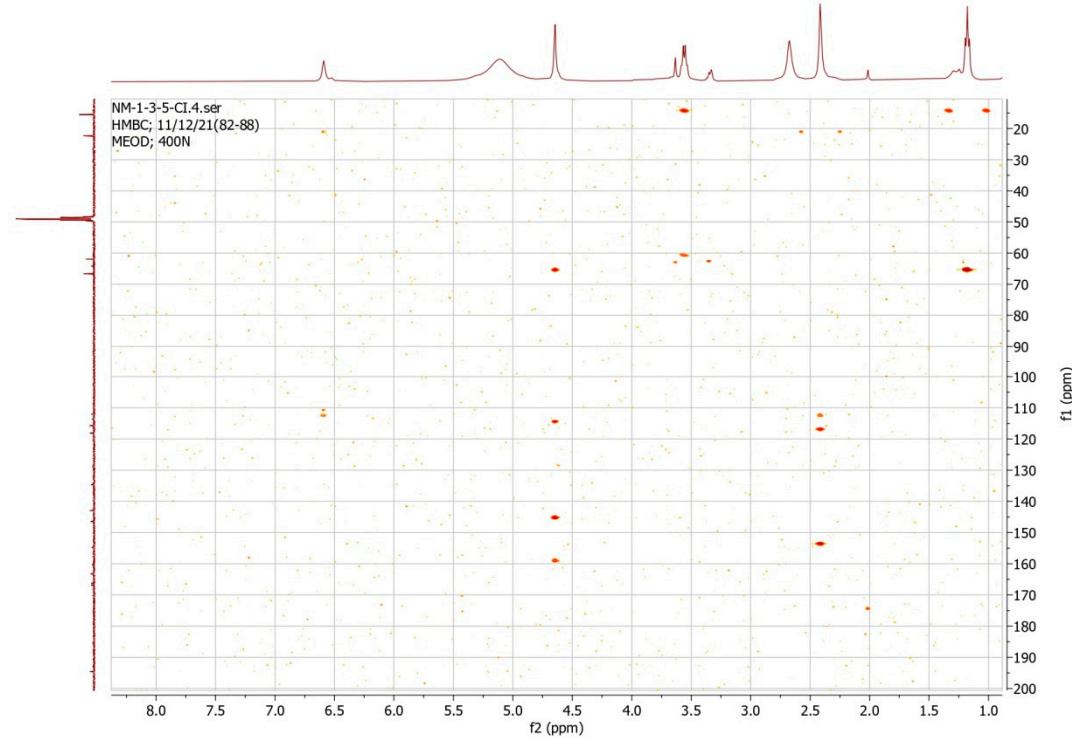
**Figure S1.**  $^1\text{H}$  NMR spectrum of compound **1** (400 MHz,  $\text{CD}_3\text{OD}$ )



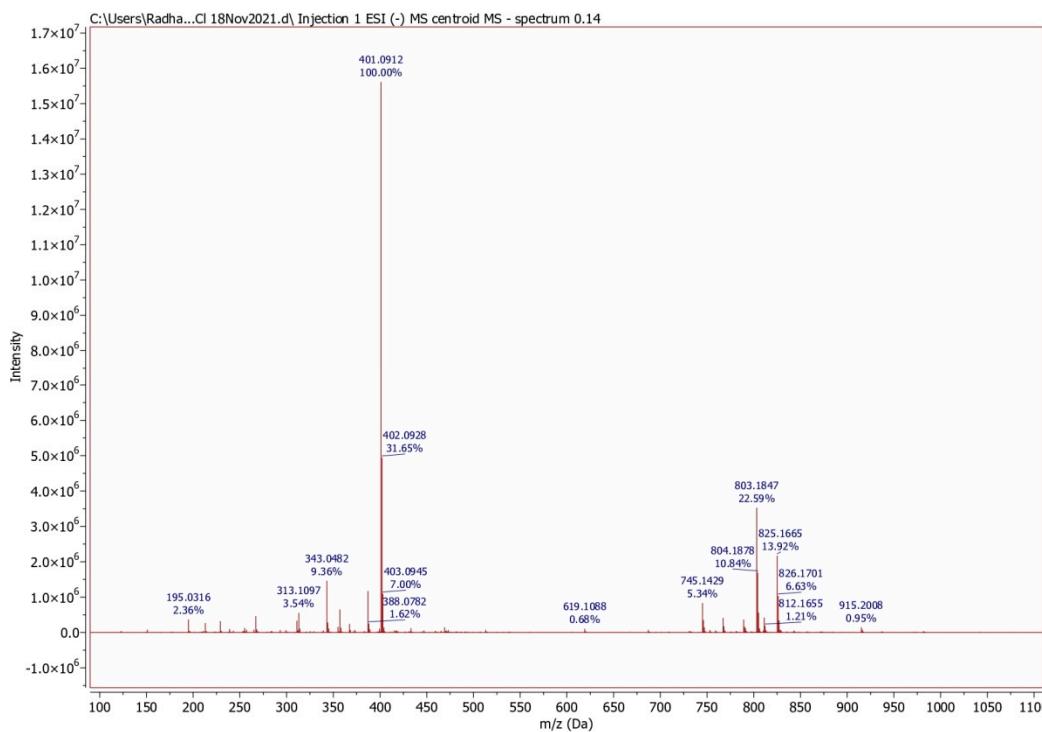
**Figure S2.**  $^{13}\text{C}$  NMR spectrum of compound **1** (100 MHz,  $\text{CD}_3\text{OD}$ )



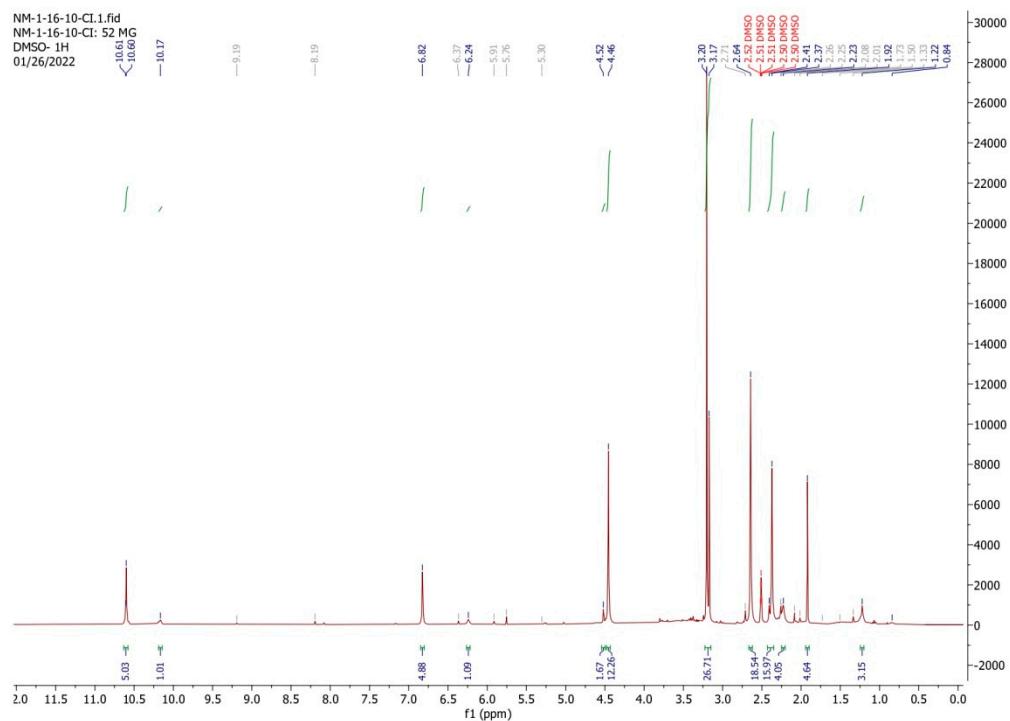
**Figure S3.** HSQC spectrum of compound **1**



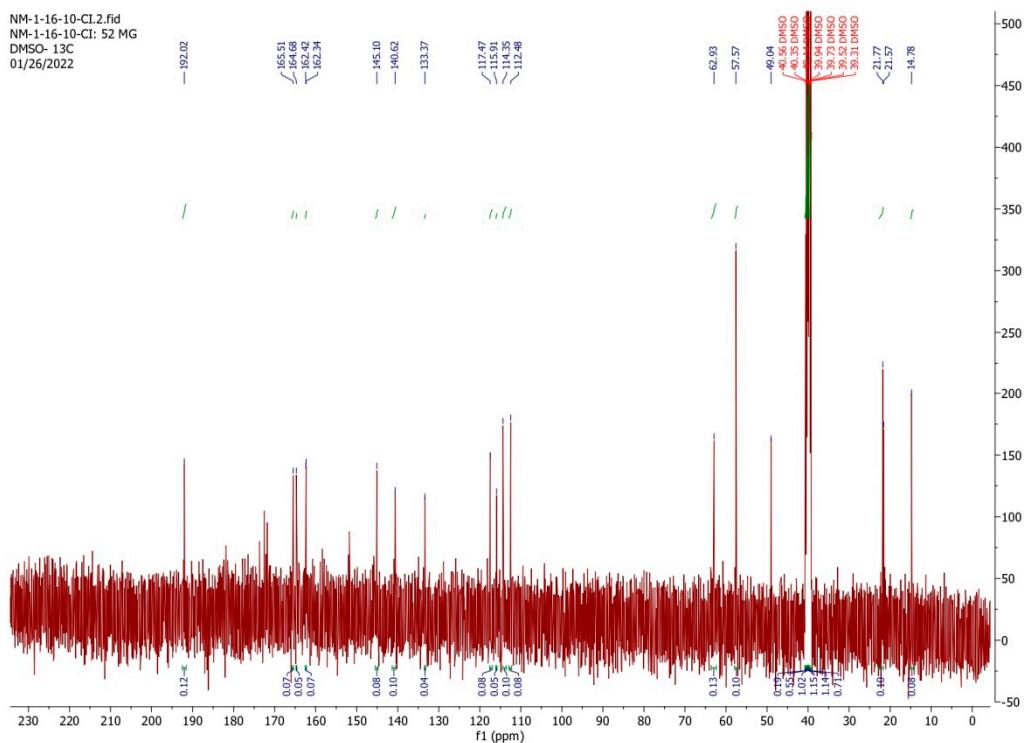
**Figure S4.** HMBC spectrum of compound **1**



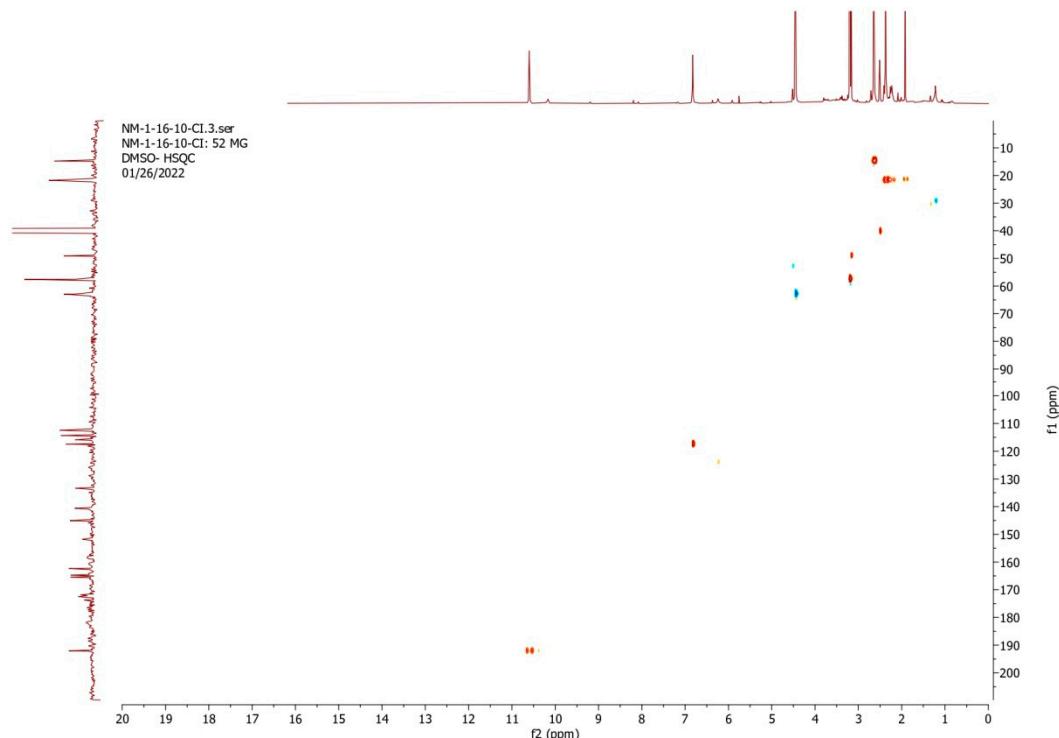
**Figure S5.** HR-ESI-MS spectrum of compound 1



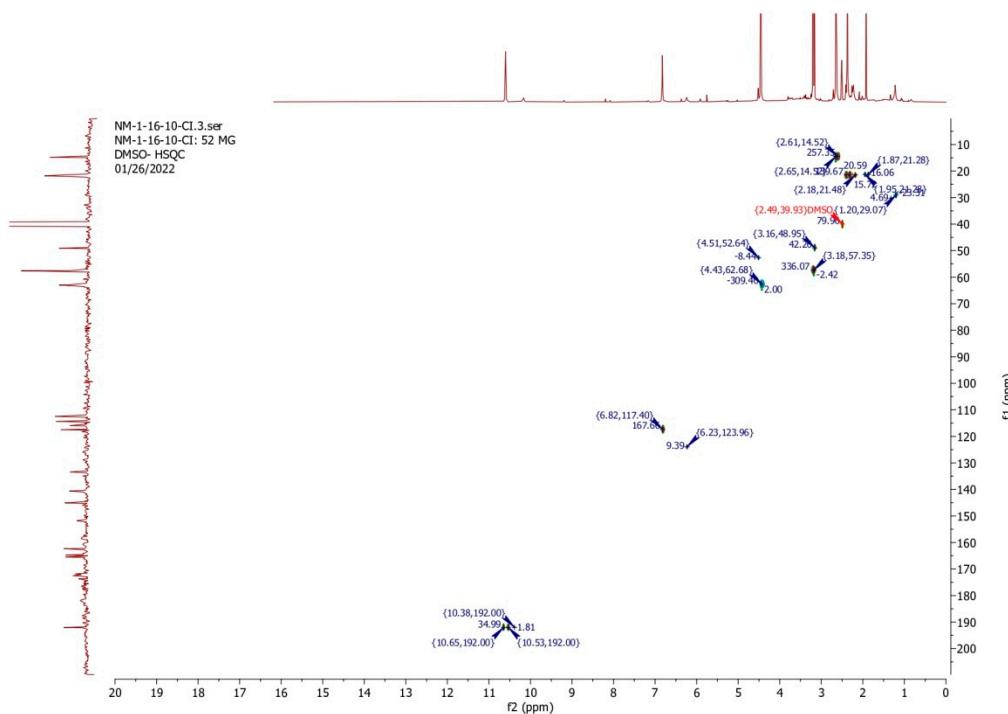
**Figure S6.**  $^1\text{H}$  NMR spectrum of compound 2 (400 MHz,  $\text{DMSO-d}_6$ )



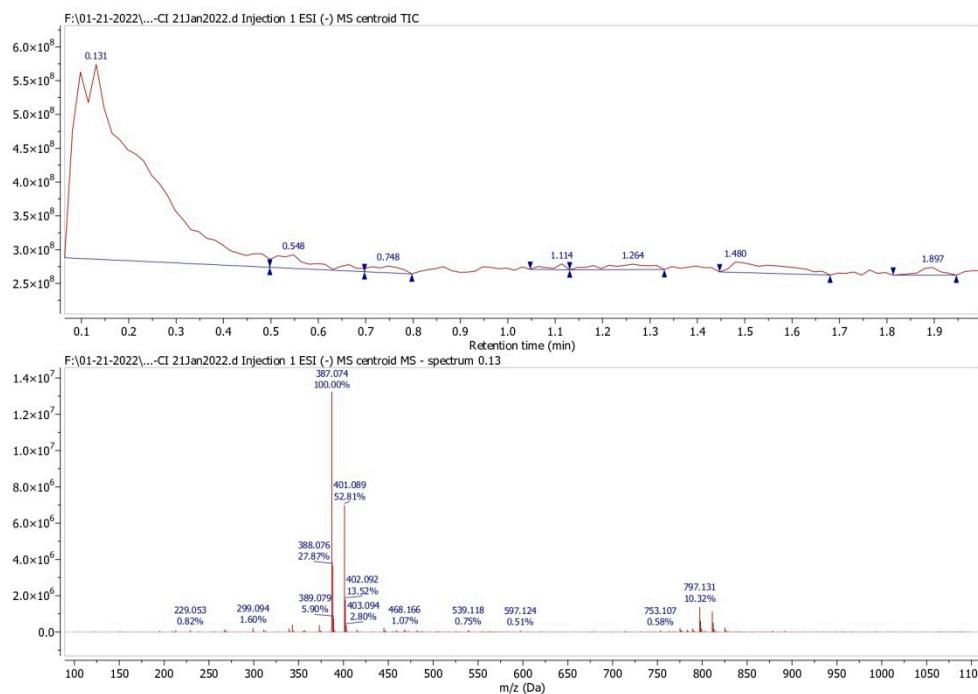
**Figure S7.**  $^{13}\text{C}$  NMR spectrum of compound **2** (100 MHz,  $\text{DMSO-d}_6$ )



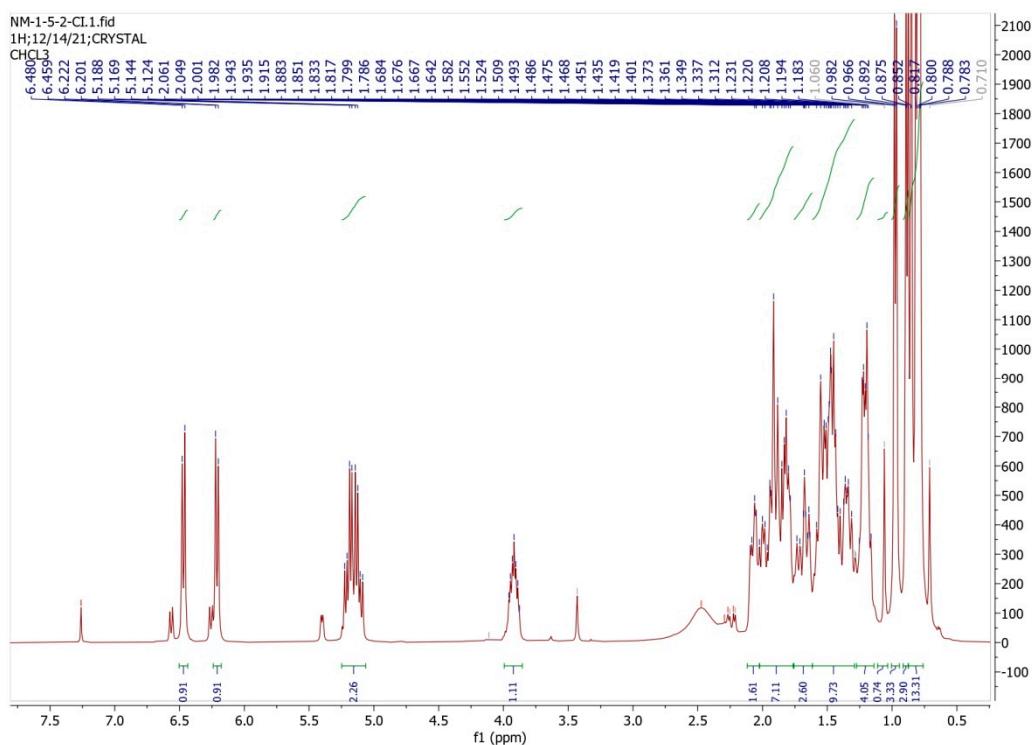
**Figure S8.** HCQC spectrum of compound **2**



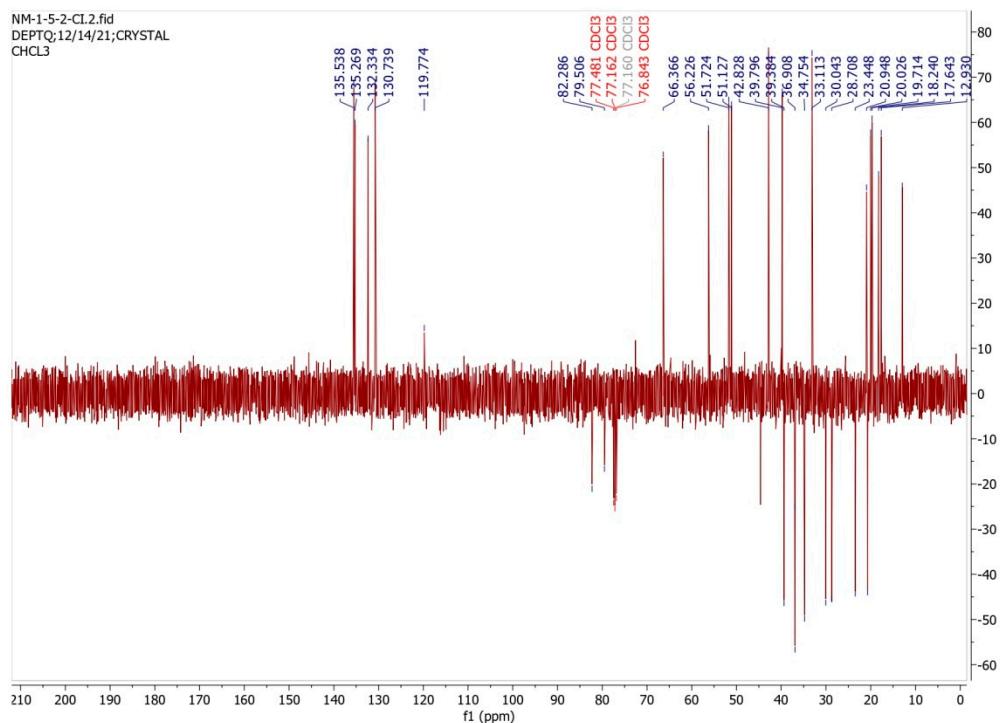
**Figure S9.** HMBC spectrum of compound 2



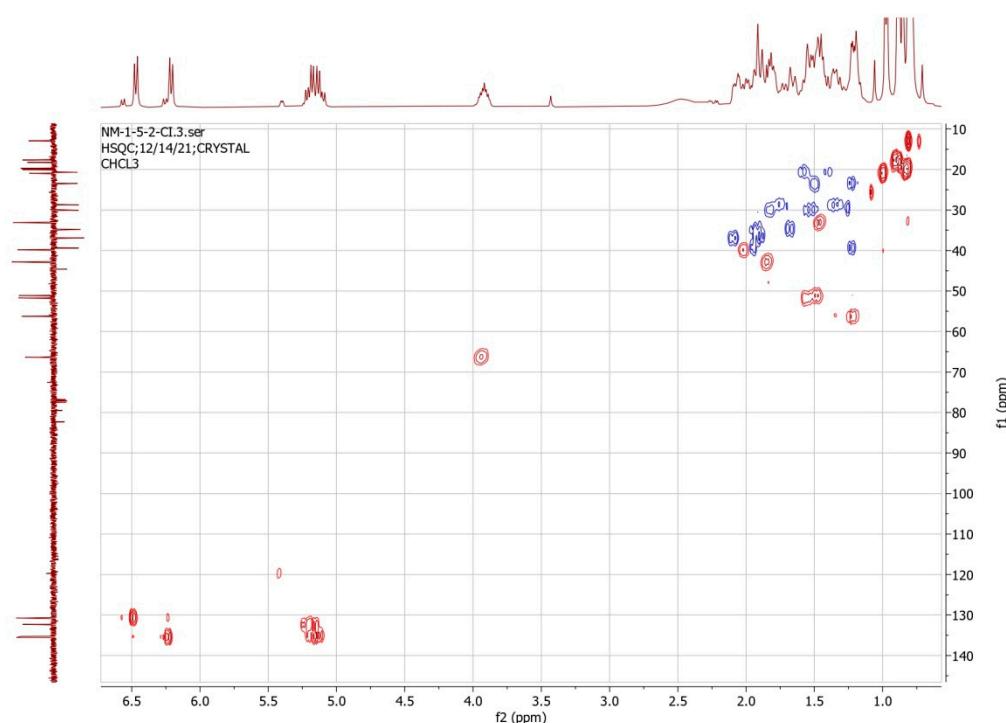
**Figure S10.** HR-ESI-MS spectrum of compound 2



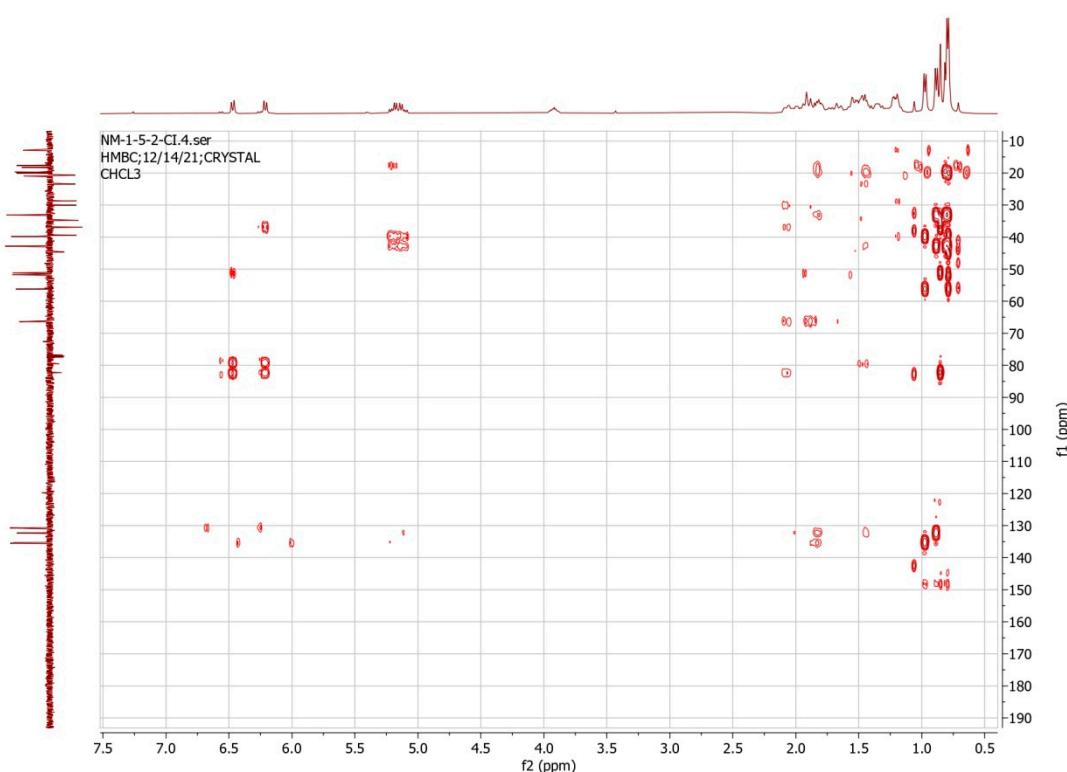
**Figure S11.** <sup>1</sup>H NMR spectrum of compound 4 (400 MHz, CDCl<sub>3</sub>)



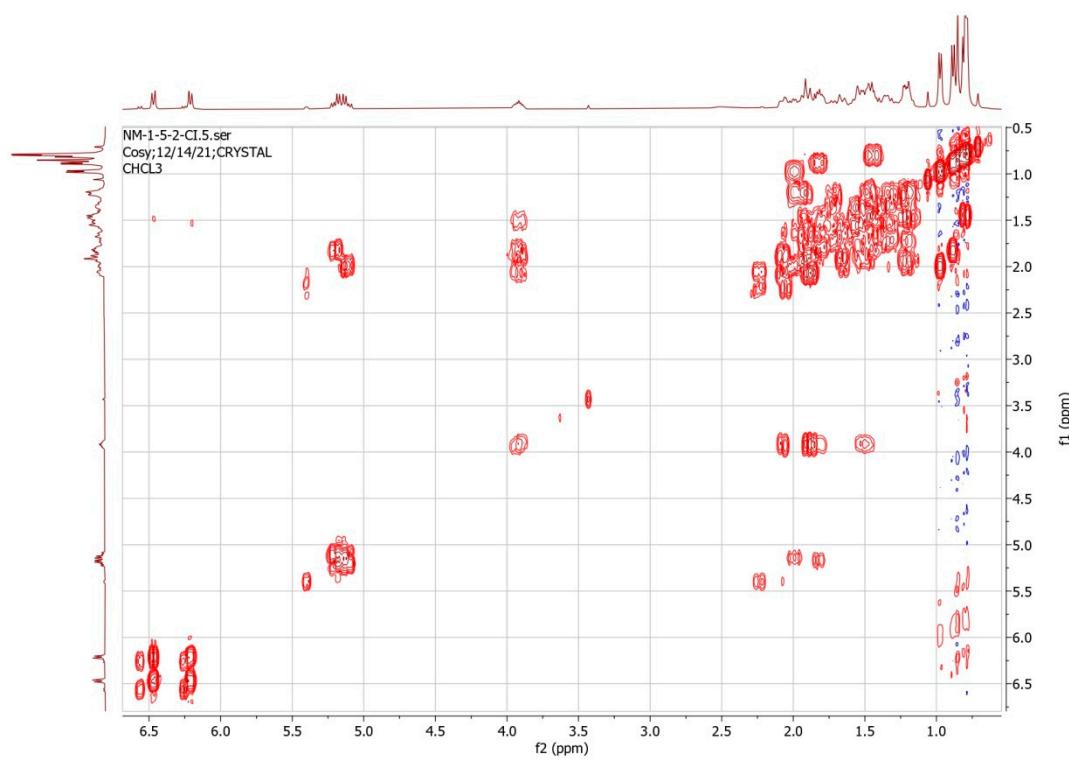
**Figure S12.** DEPTQ spectrum of compound 4 (100 MHz, CDCl<sub>3</sub>)



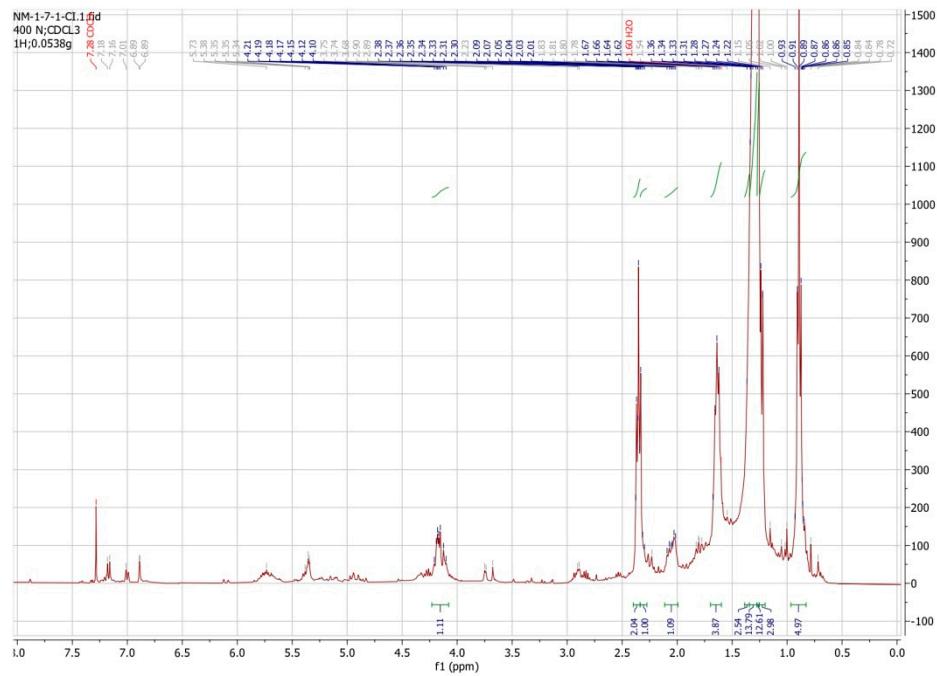
**Figure S13.** HSQC spectrum of compound 4



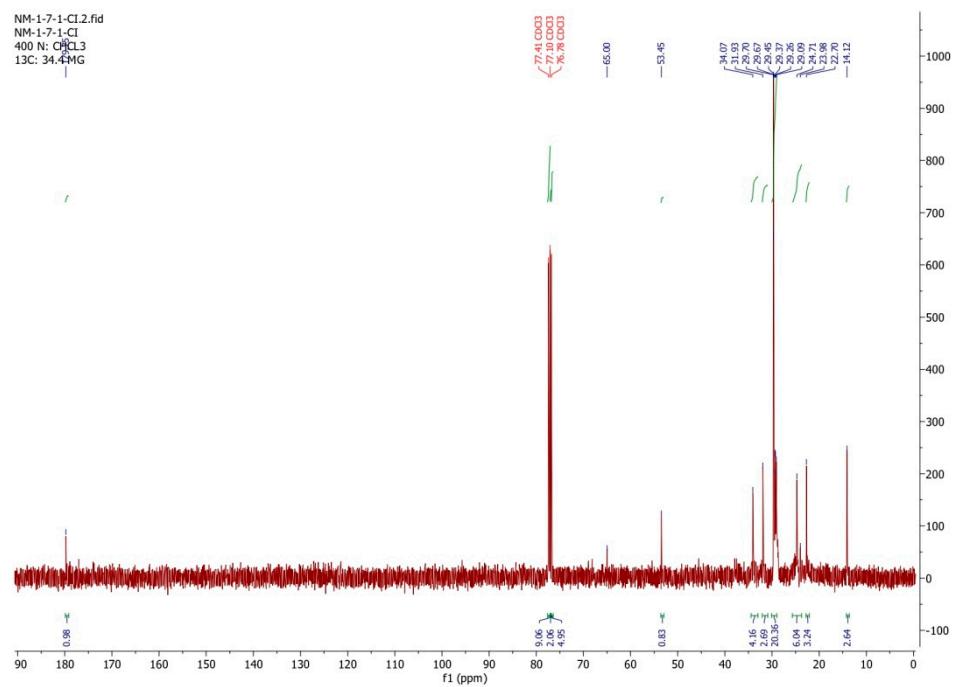
**Figure S14.** HMBC spectrum of compound 4



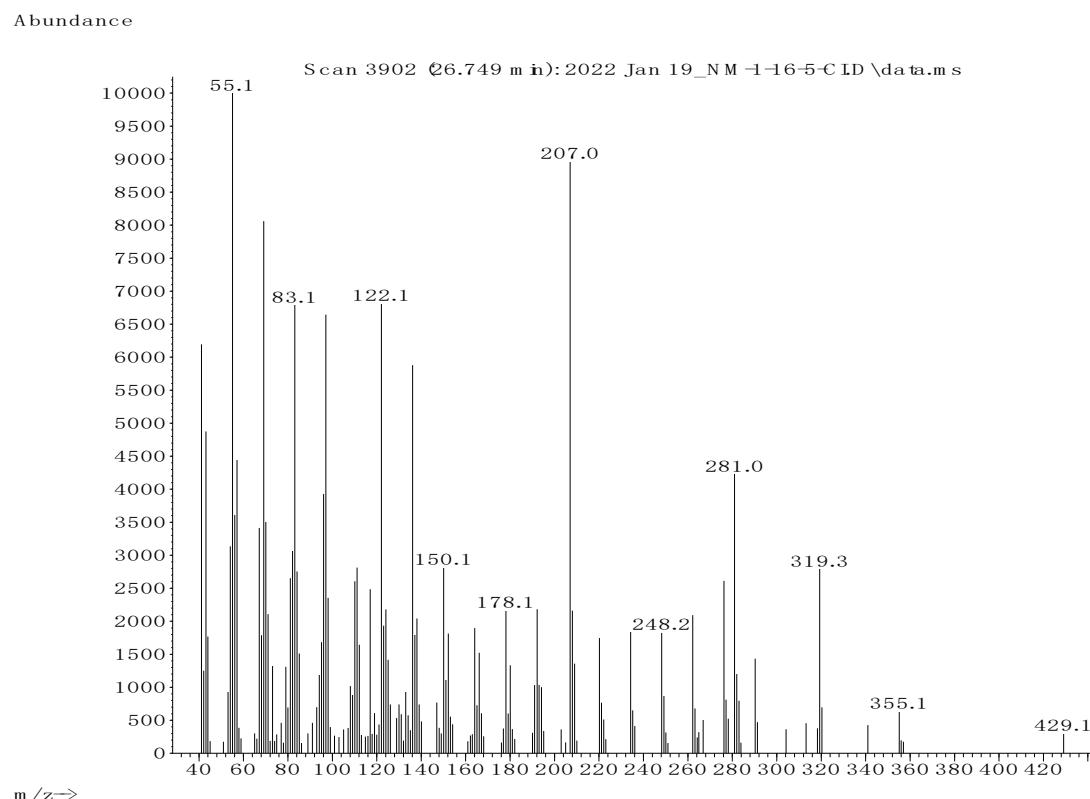
**Figure S15.**  $^1\text{H}$ - $^1\text{H}$  COSY spectrum of compound 4



**Figure S16.**  $^1\text{H}$  NMR spectrum of mixture of compounds 5, 6, 7 (400 MHz, CDCl<sub>3</sub>)

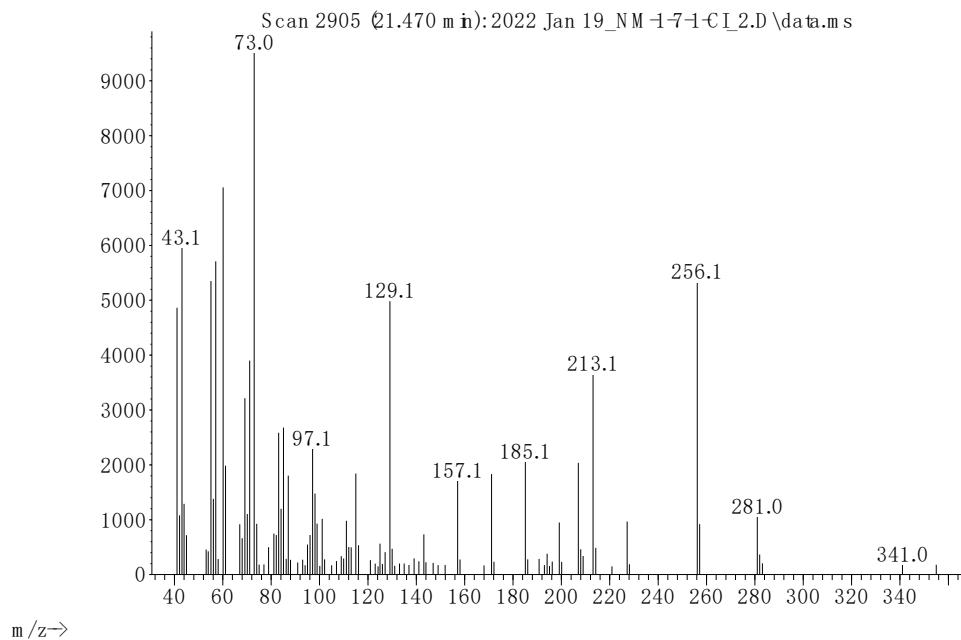


**Figure S17.**  $^{13}\text{C}$  NMR spectrum of mixture of compounds **5,6,7** (100 MHz,  $\text{CDCl}_3$ )



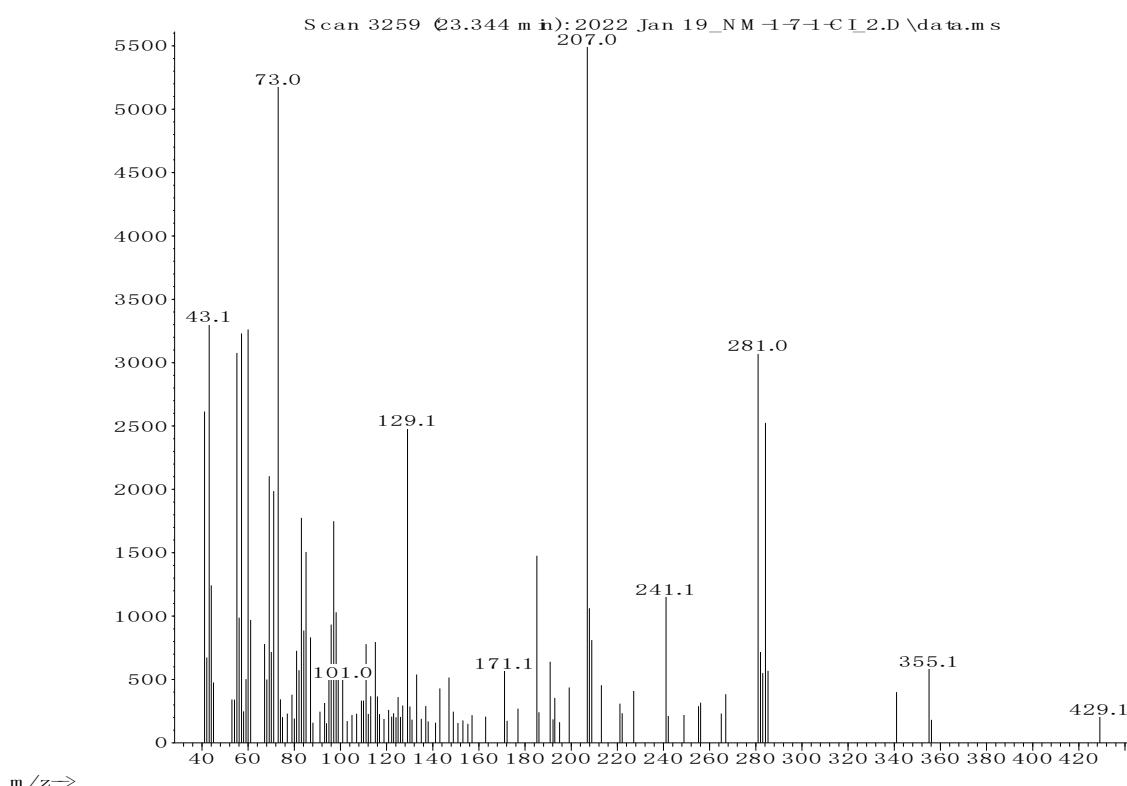
**Figure S18.** EI-MS spectrum of compound **5**

Abundance

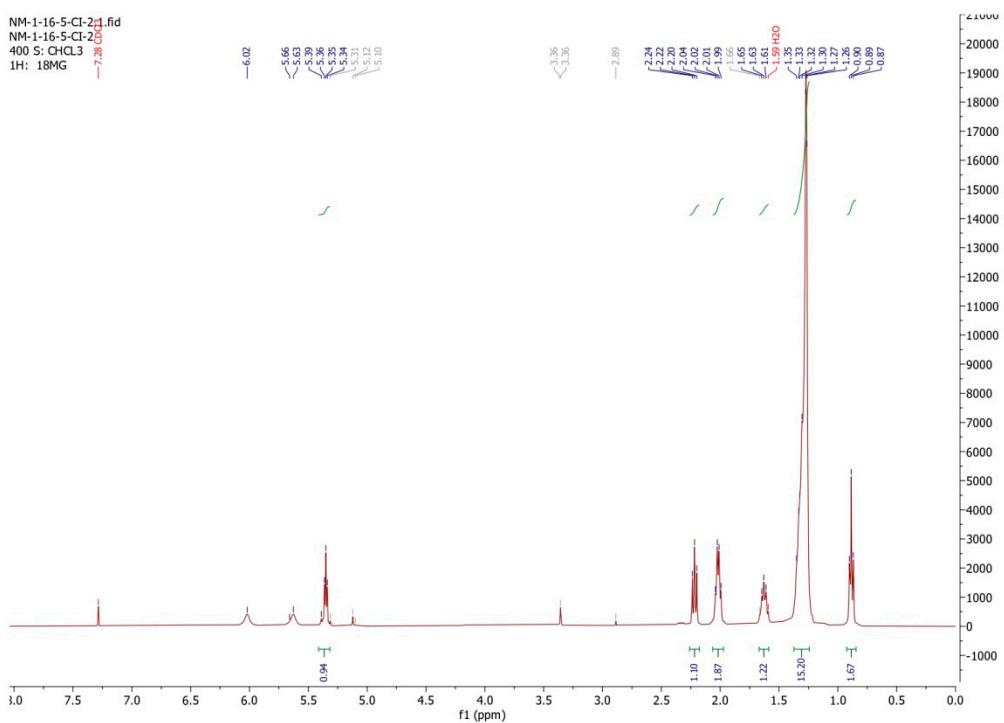


**Figure S19.** EI-MS spectrum of compound 6

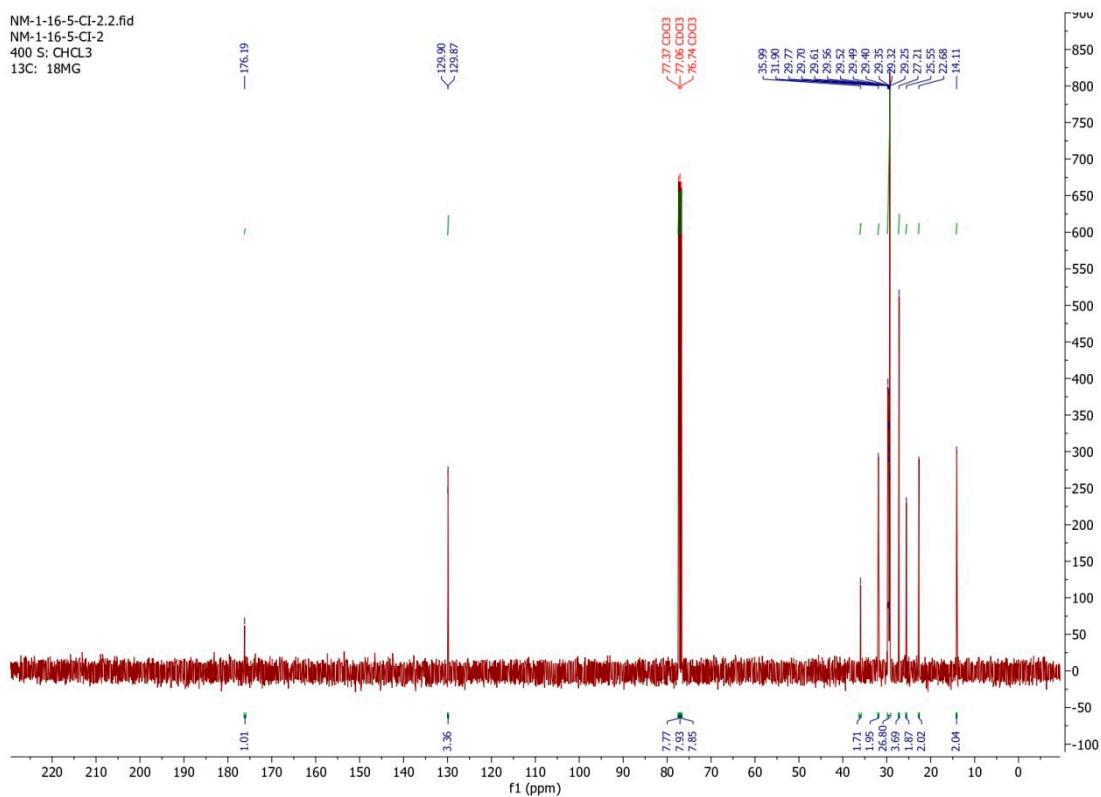
Abundance

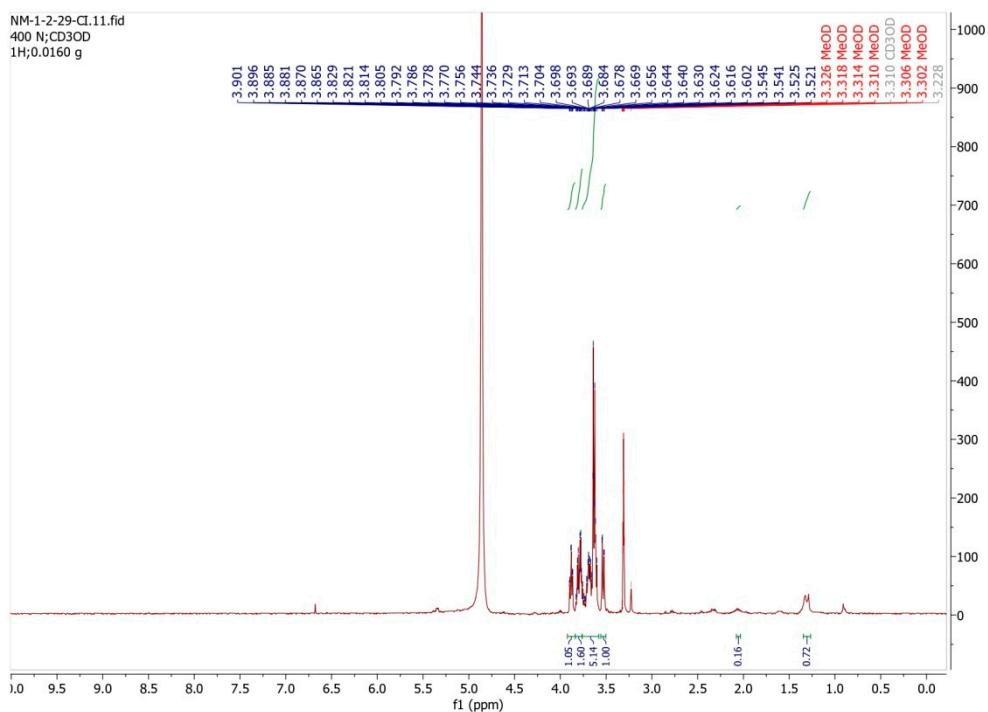


**Figure S20.** EI-MS spectrum of compound 7

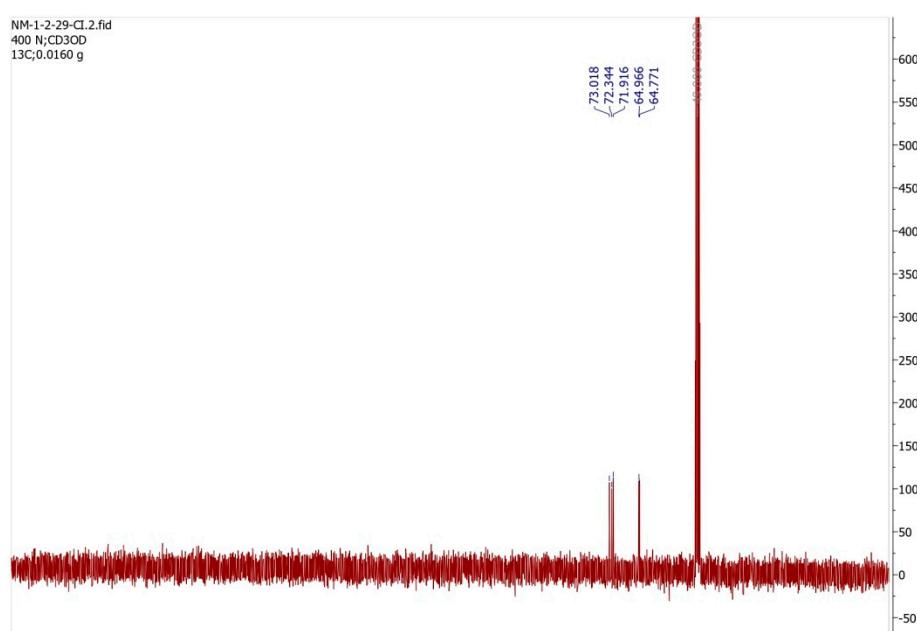


**Figure S21.** <sup>1</sup>H NMR spectrum of mixture of compounds 5 (400 MHz, CDCl<sub>3</sub>)

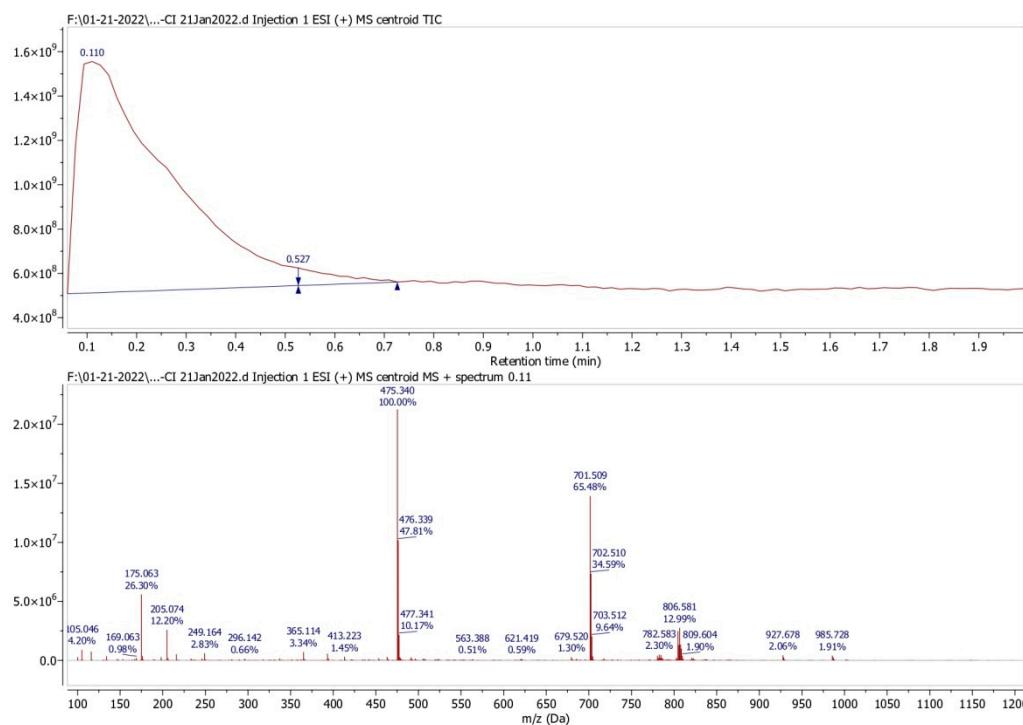




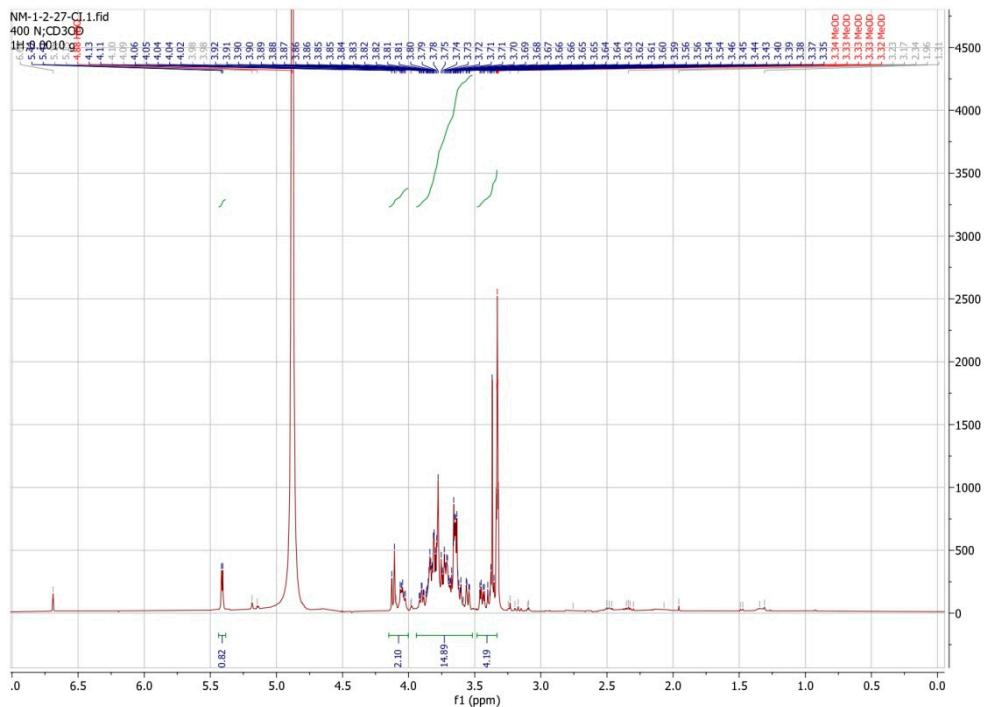
**Figure S23.** <sup>1</sup>H NMR spectrum of mixture of compounds 8 (400 MHz, CD<sub>3</sub>OD)

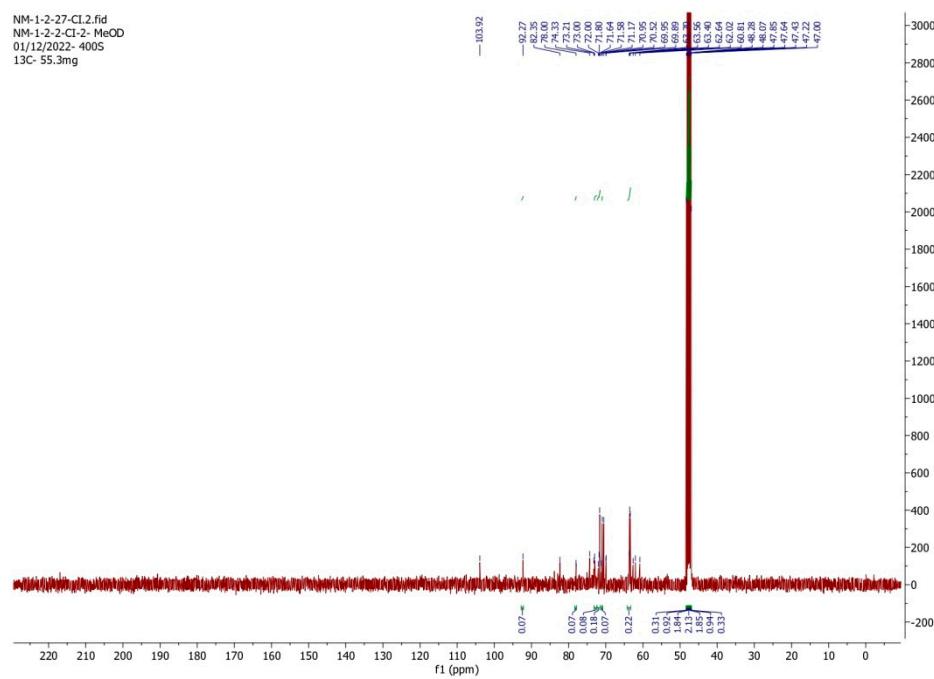


**Figure S24.** <sup>13</sup>C NMR spectrum of mixture of compounds 8 (100 MHz, CD<sub>3</sub>OD)

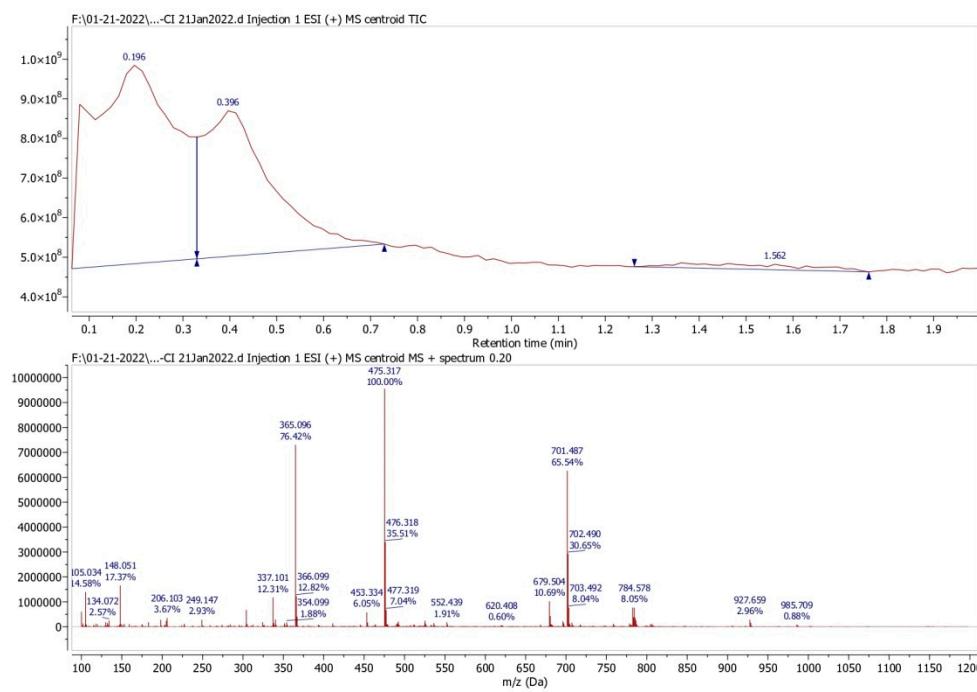


**Figure S25.** HR-ESI-MS spectrum of compound 8



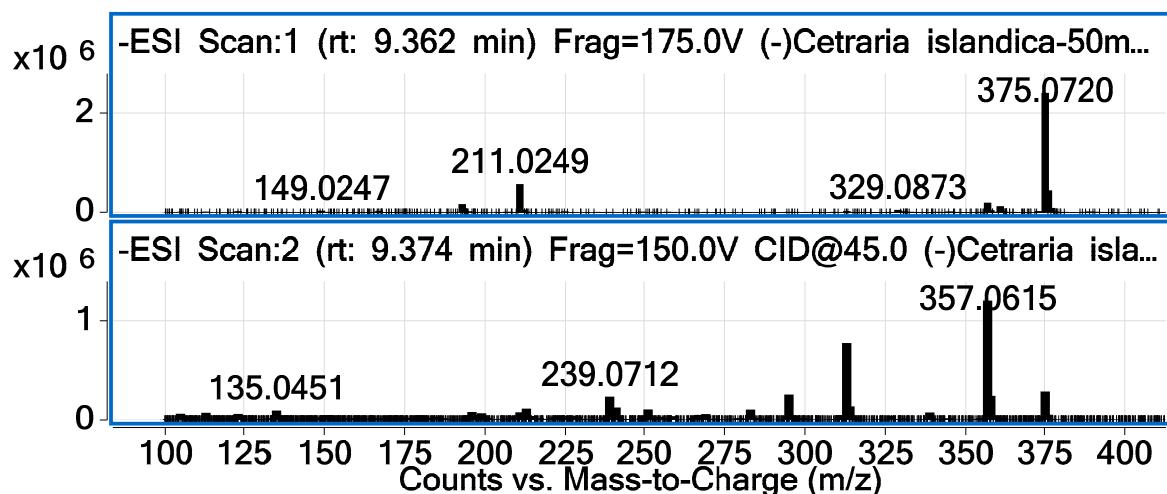


**Figure S27.**  $^{13}\text{C}$  NMR spectrum of mixture of compounds **9** (100 MHz,  $\text{CD}_3\text{OD}$ )

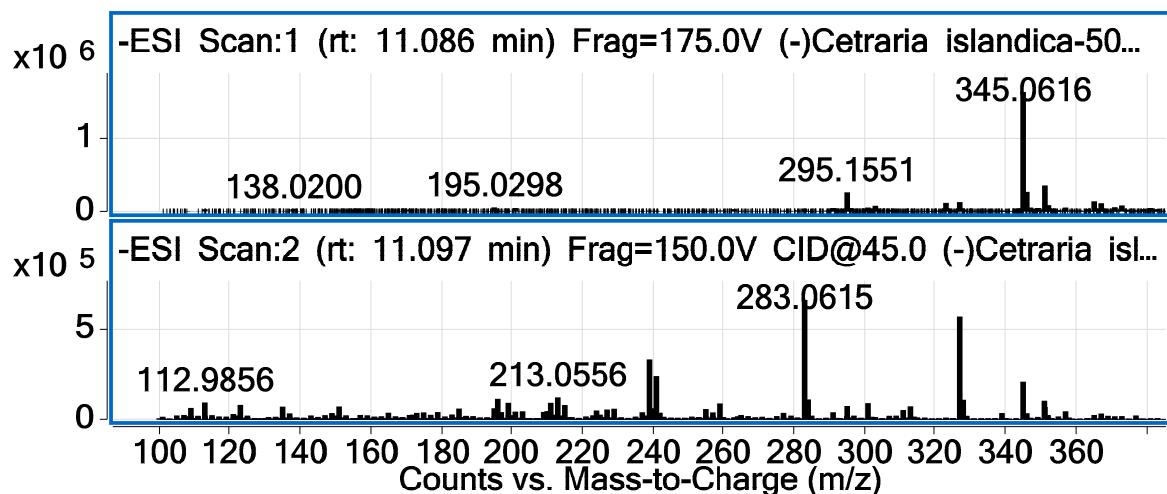


**Figure S28.** HR-ESI-MS spectrum of compound **9**

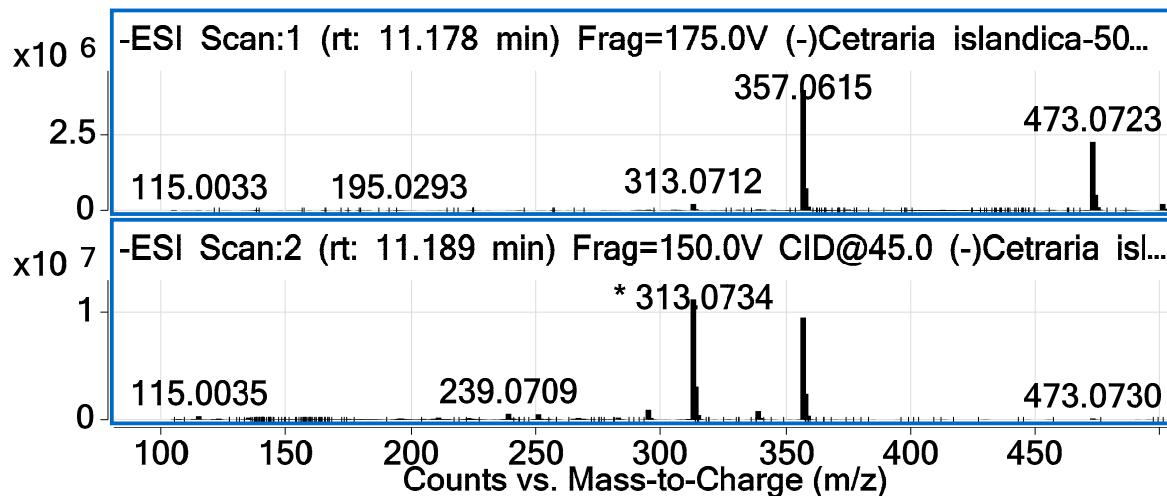
**Peak-1**



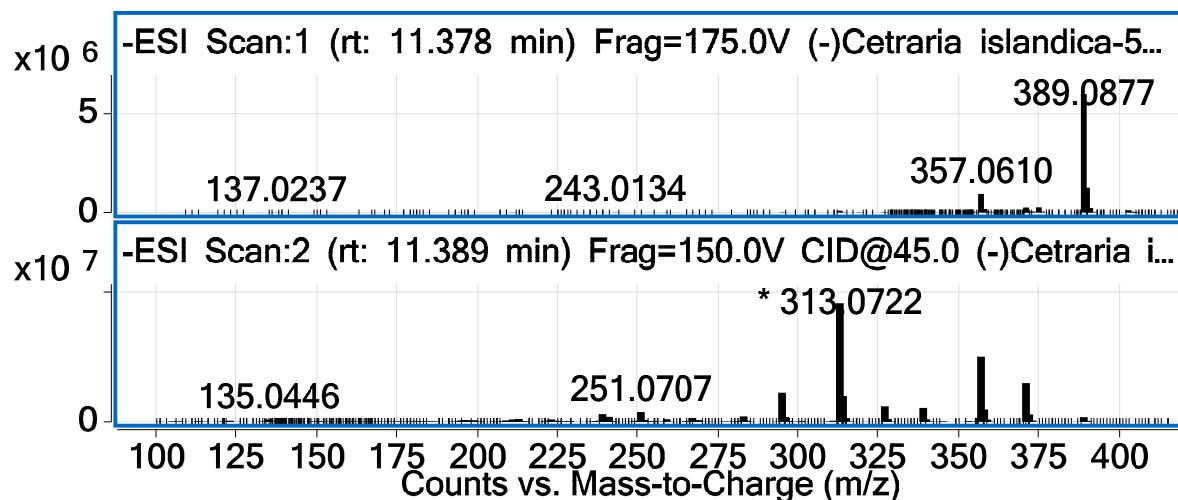
#### Peak-2



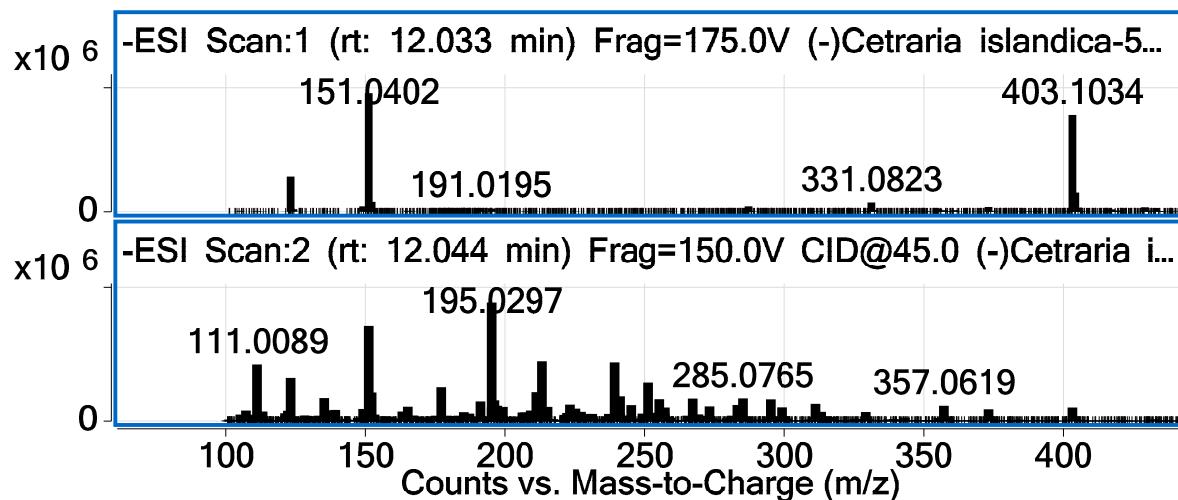
#### Peak-3



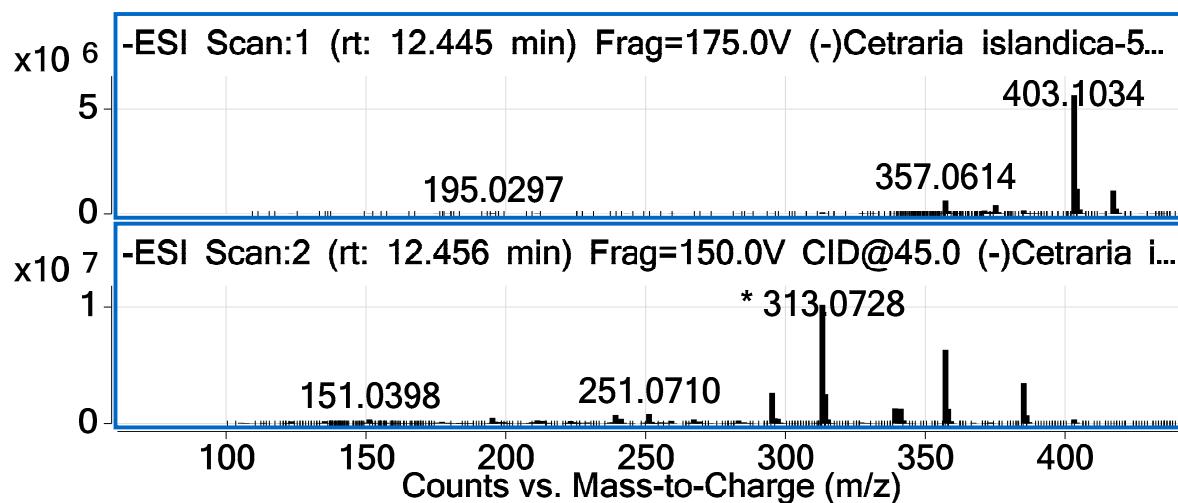
#### Peak-4



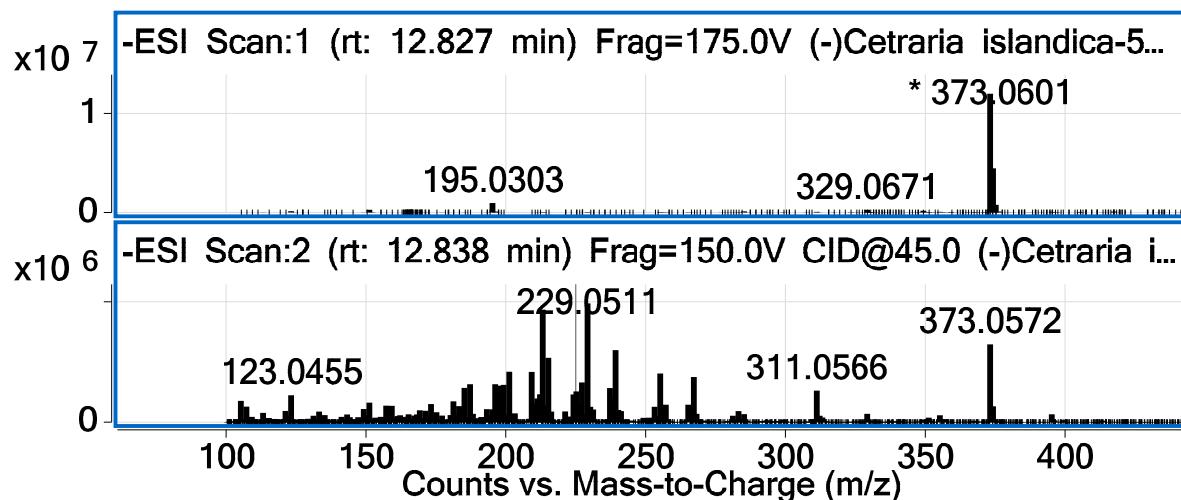
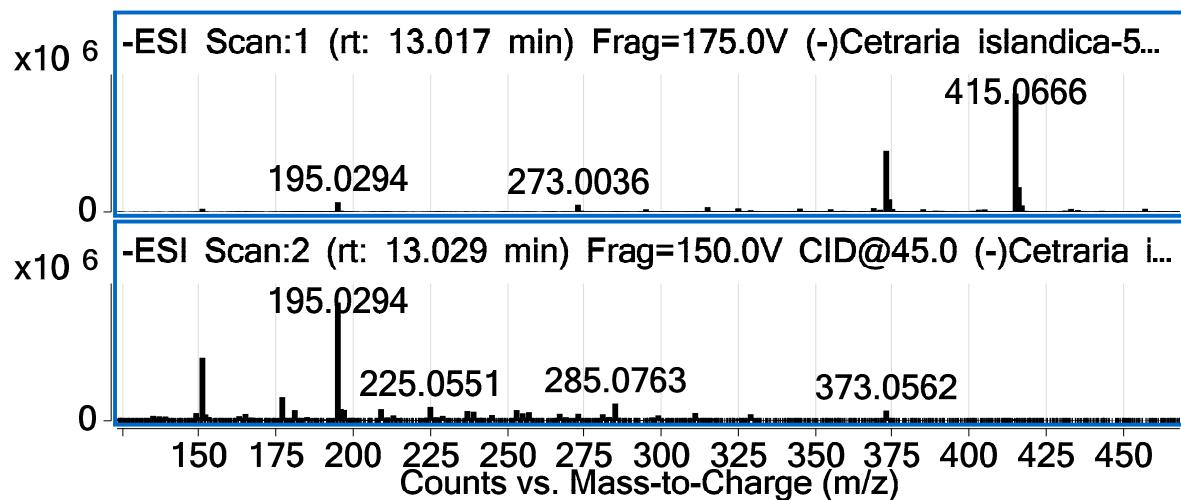
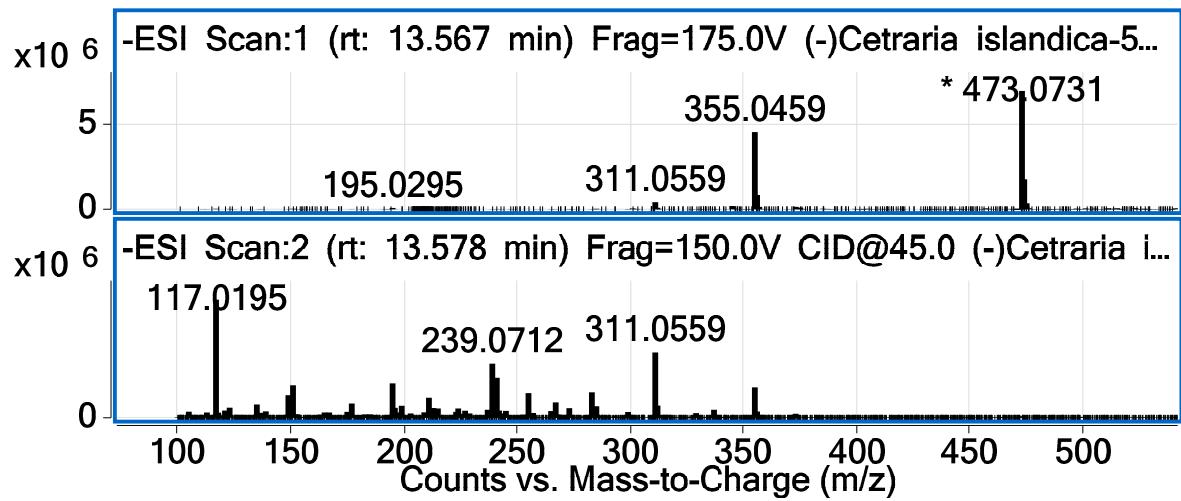
#### Peak-5

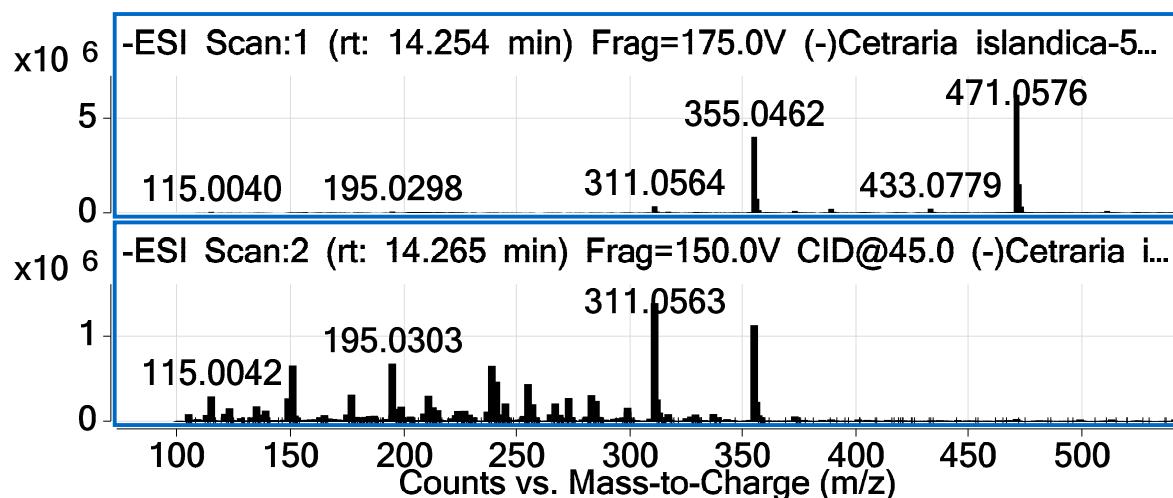


#### Peak-6

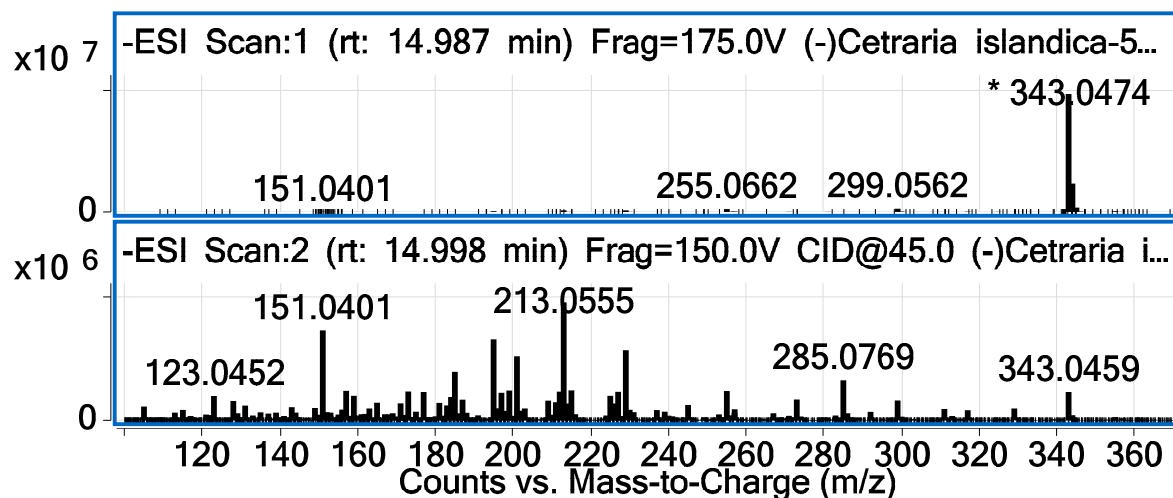


#### Peak-7

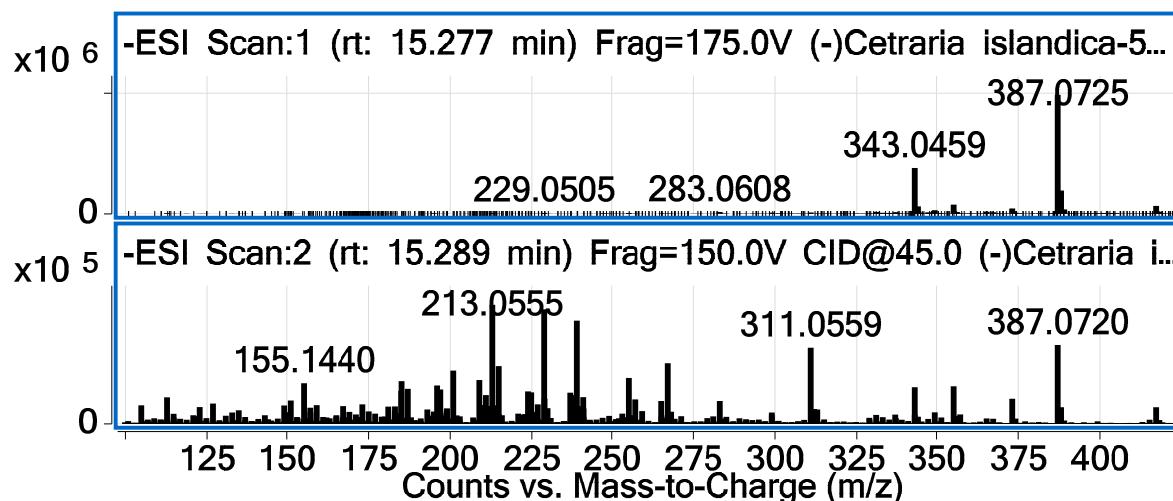
Peak-8Peak-9Peak-10



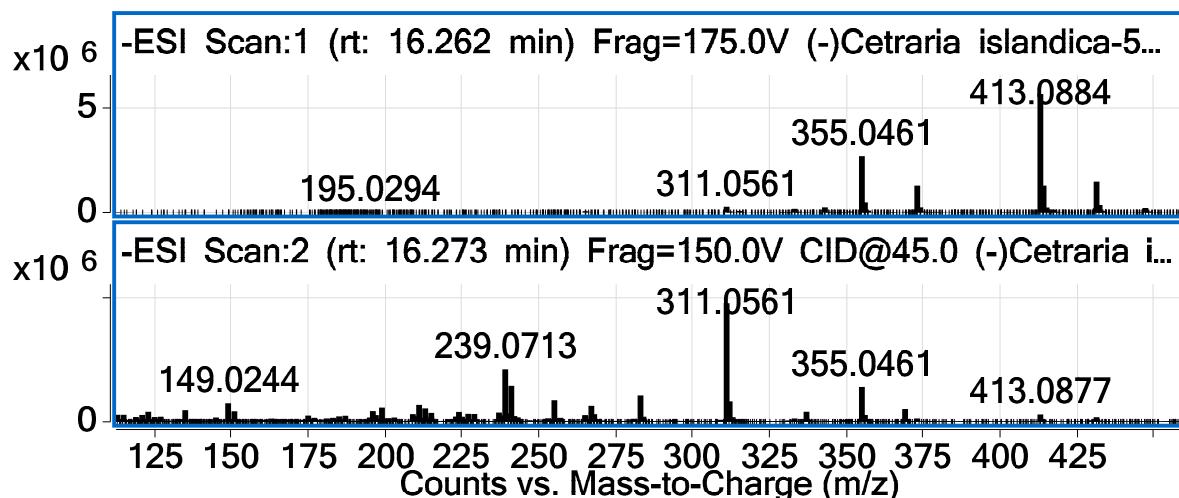
### Peak-11



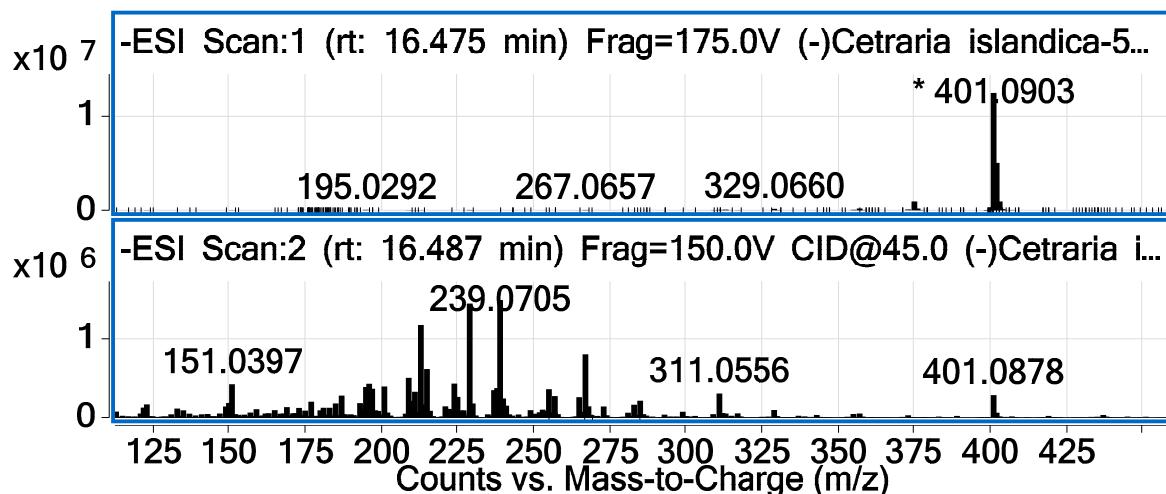
### Peak-12



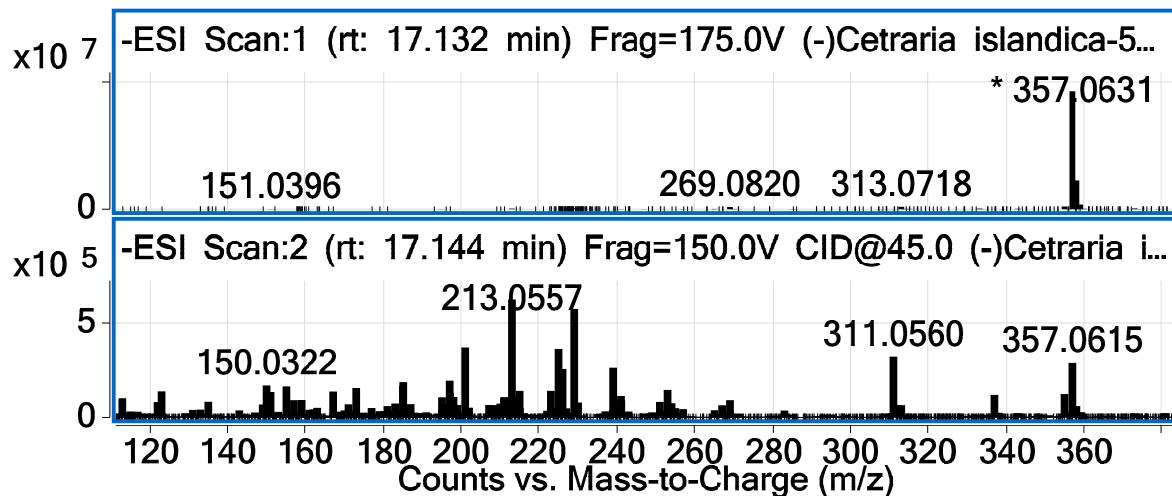
### Peak-13



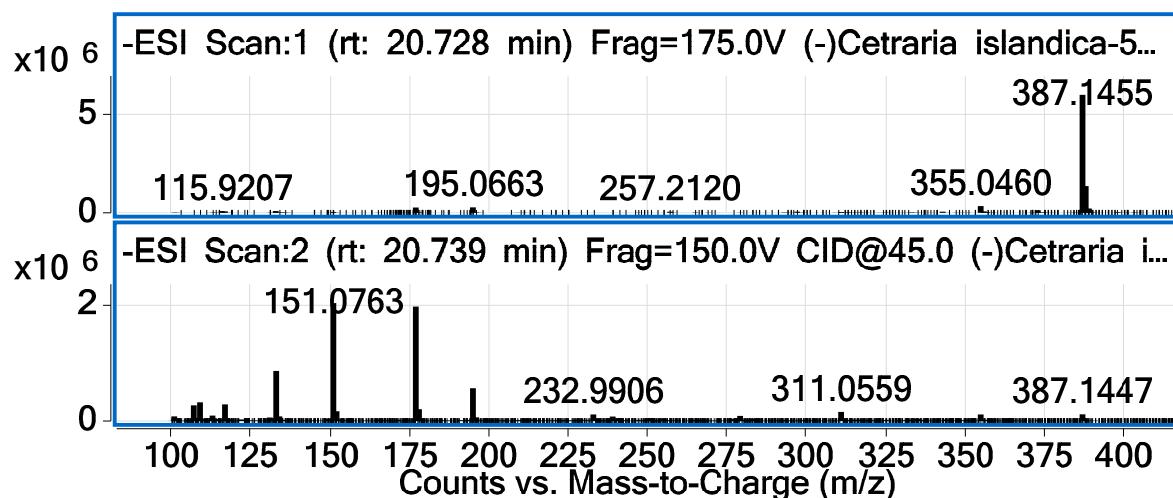
#### Peak-14



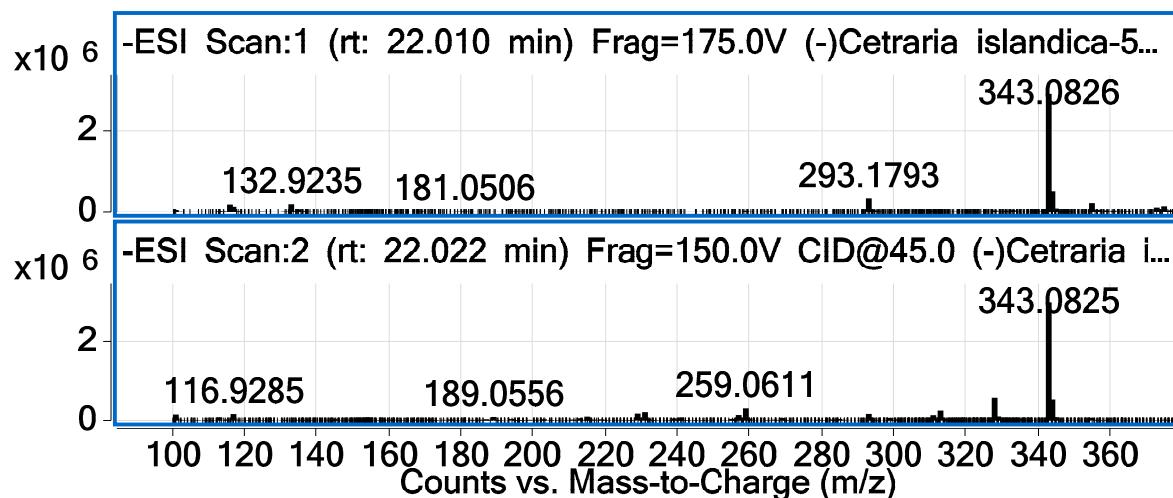
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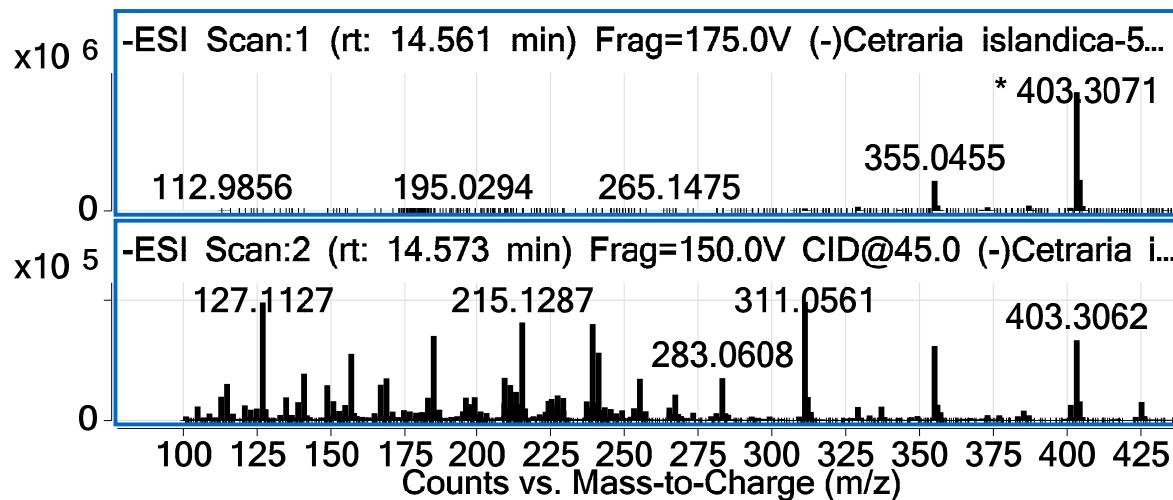
#### Peak-16



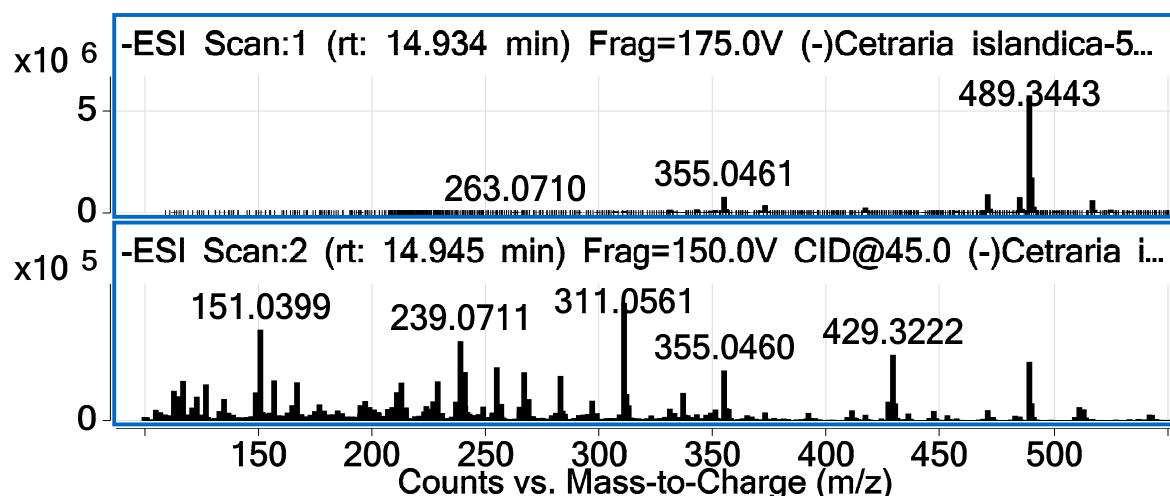
#### Peak-17



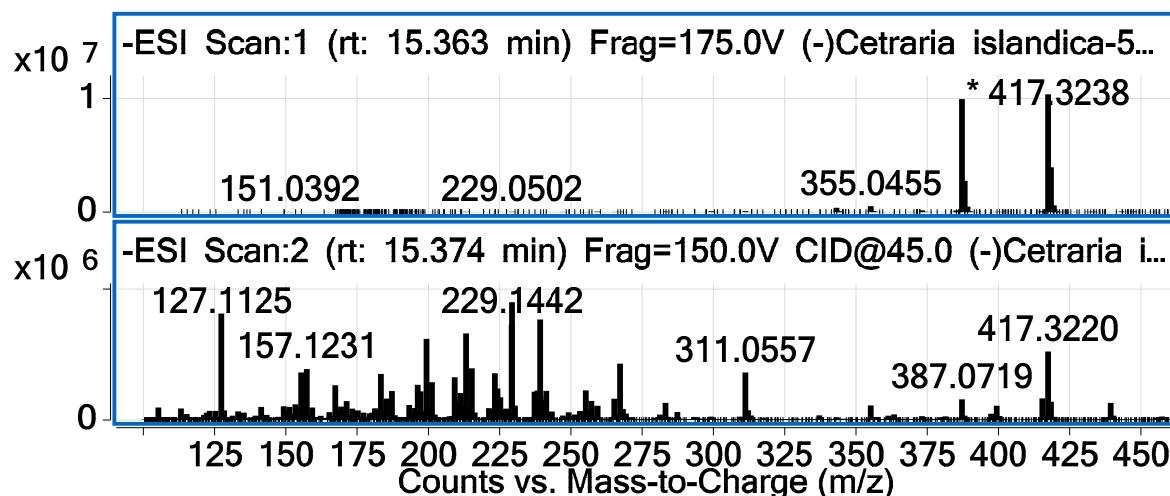
#### Peak-18



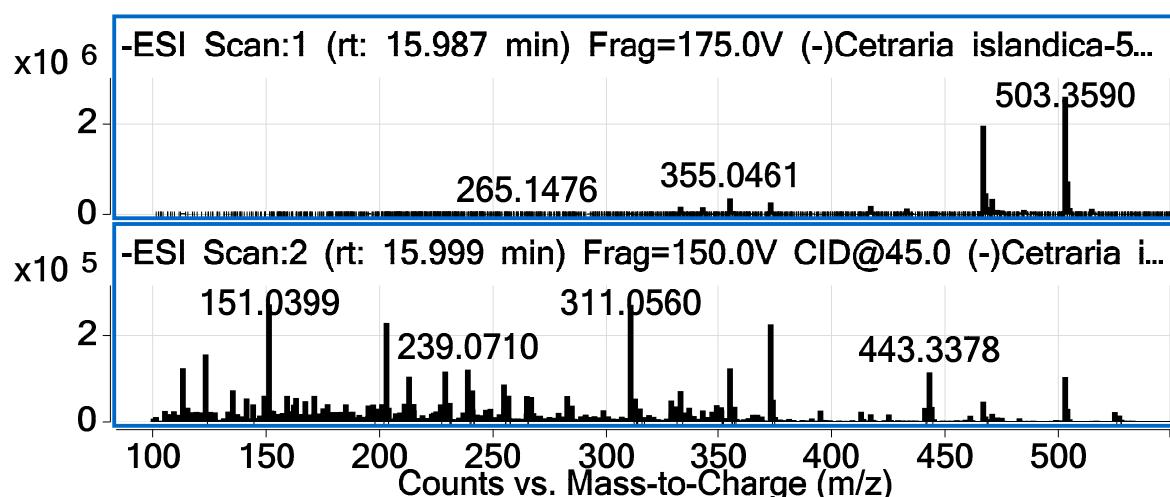
#### Peak-19



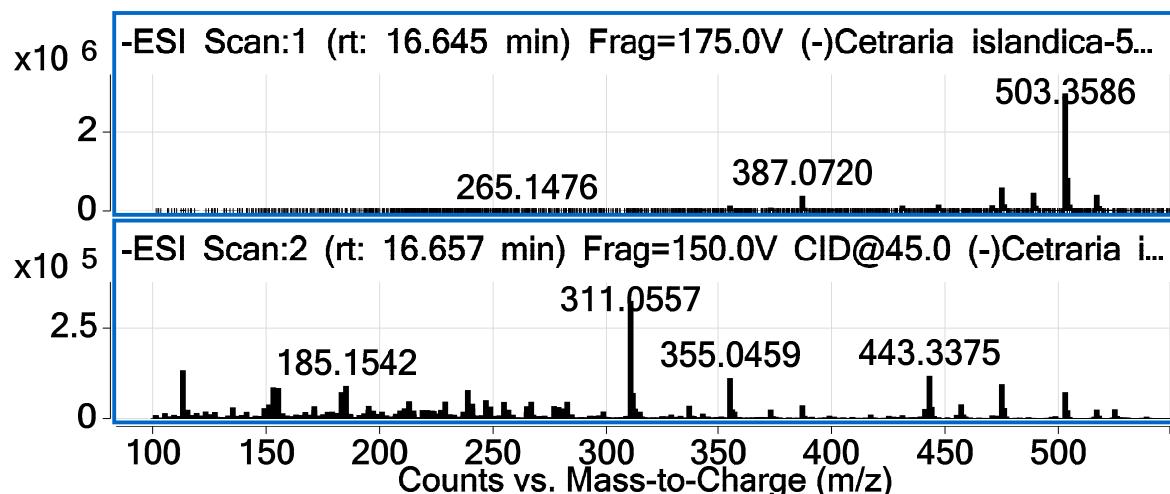
#### Peak-20



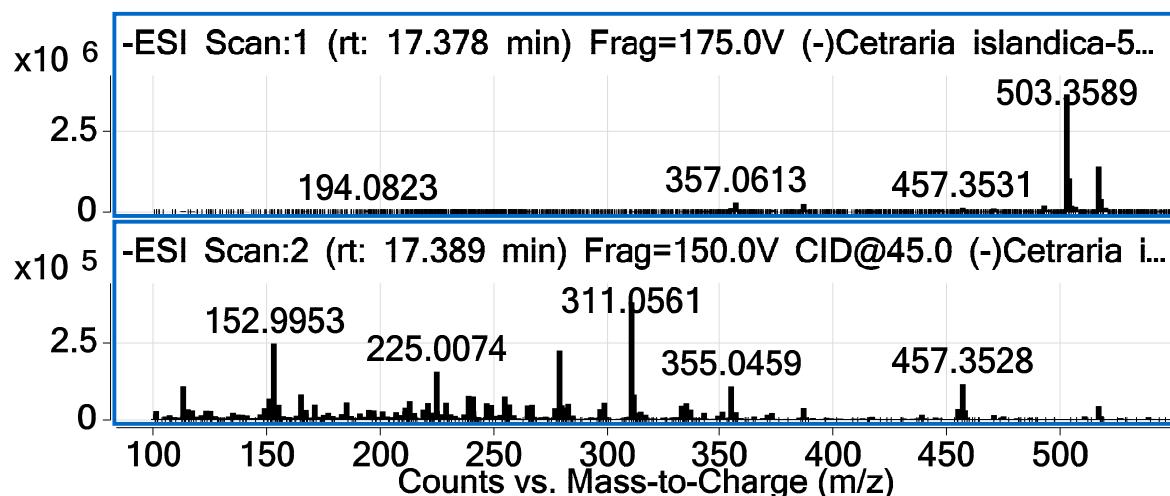
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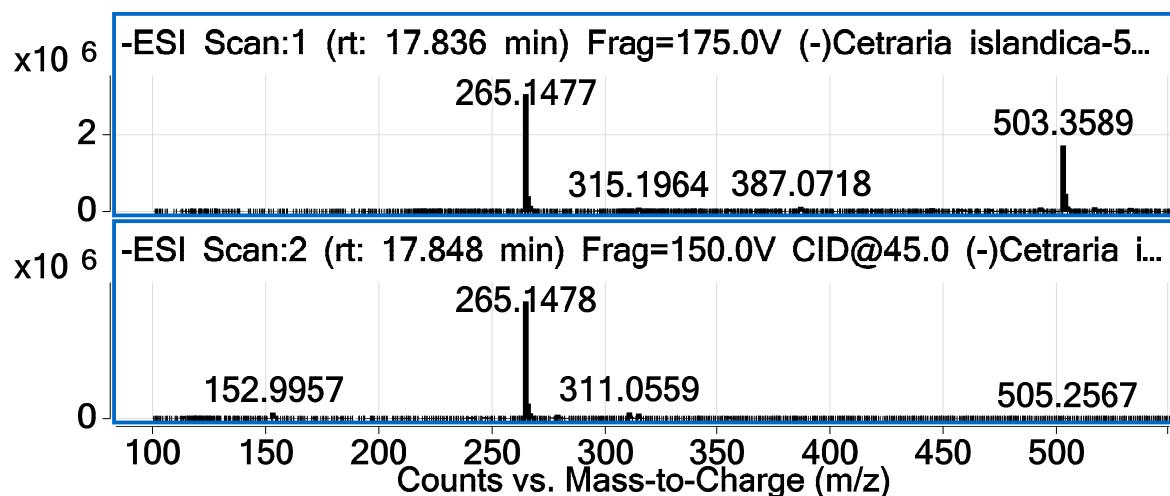
#### Peak-22



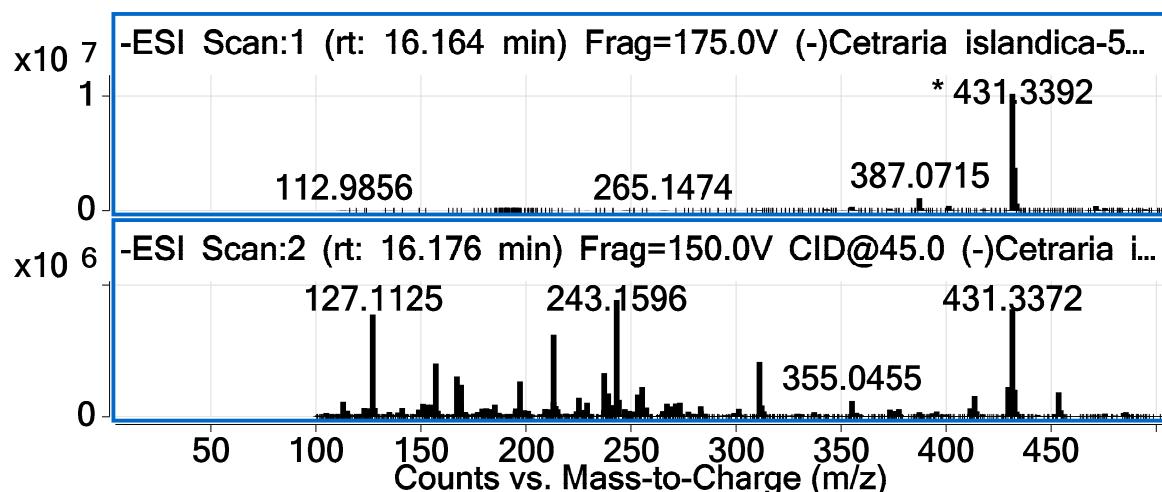
#### Peak-23



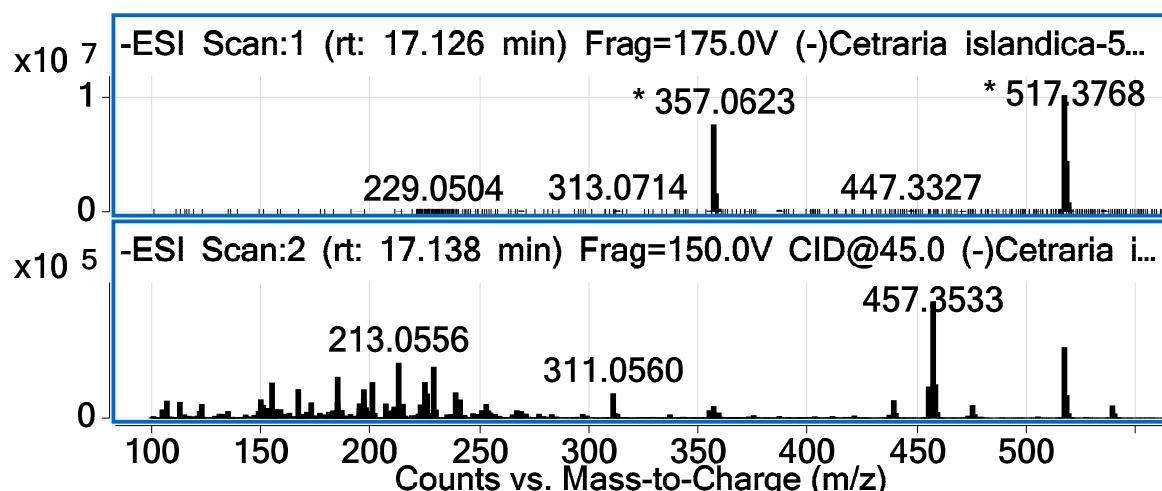
#### Peak-24



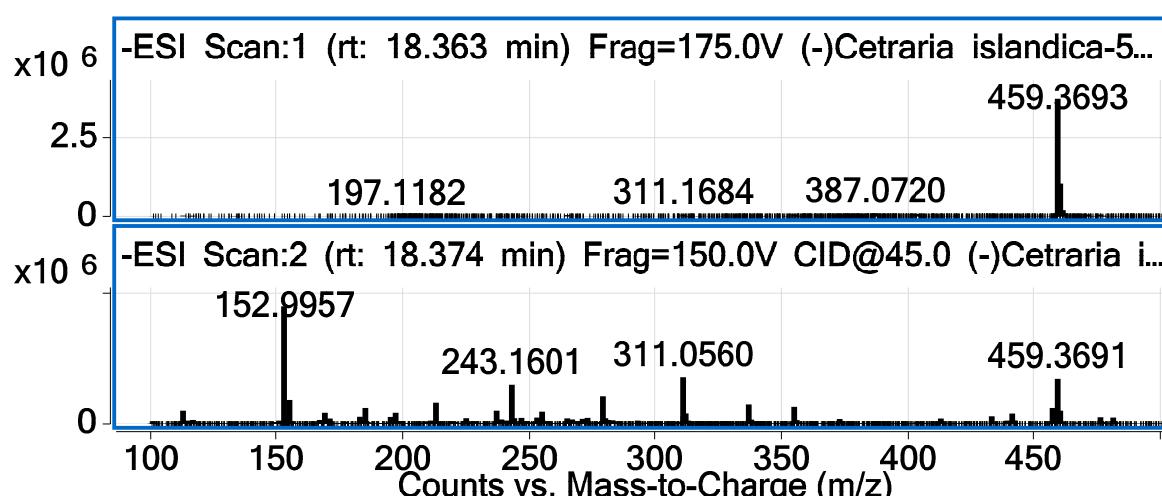
#### Peak-25



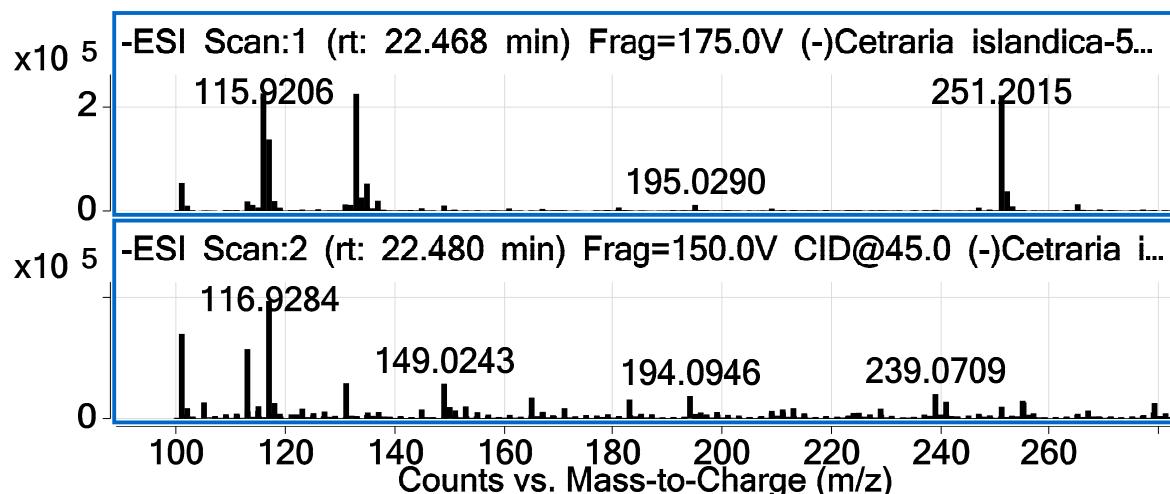
#### Peak-26



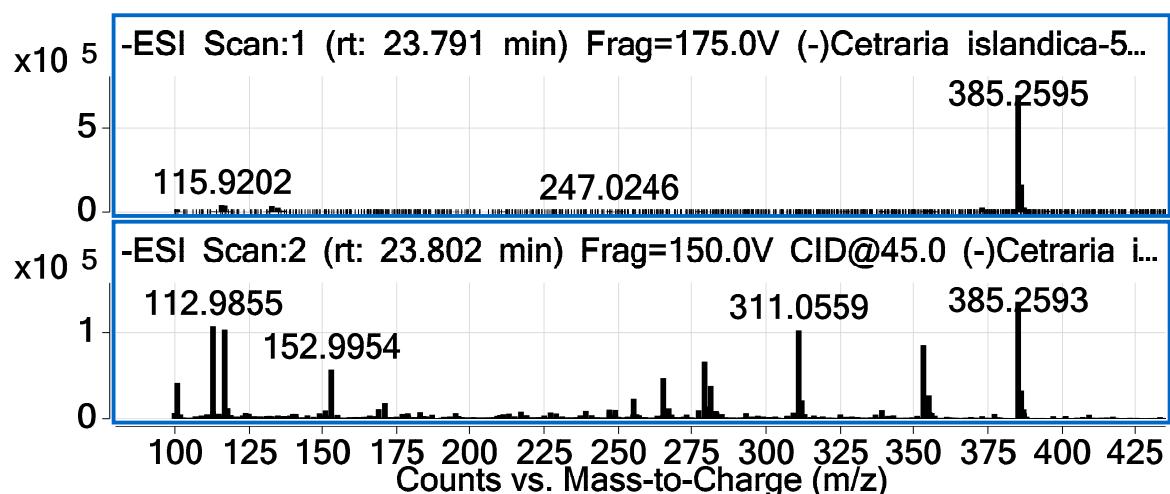
#### Peak-27



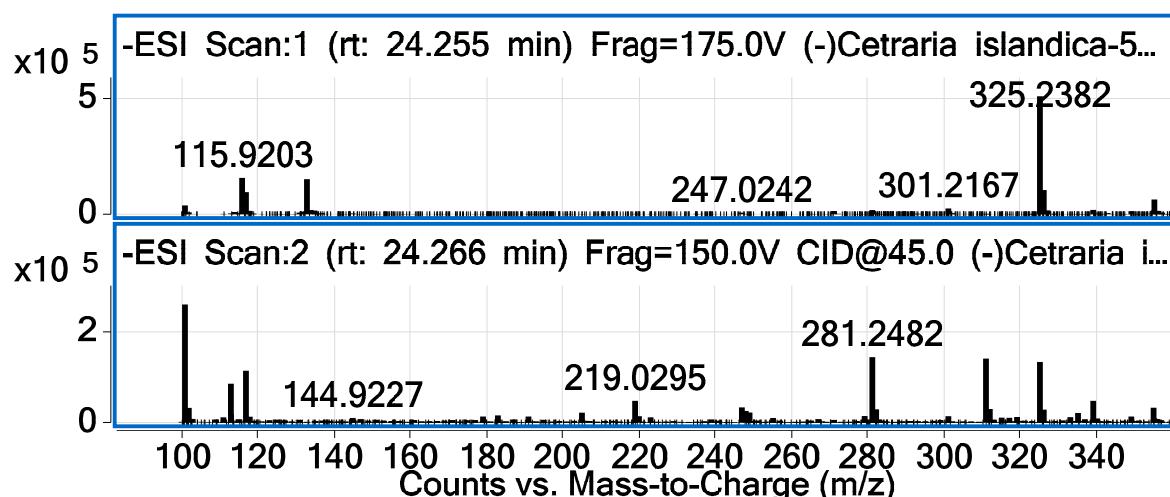
#### Peak-28



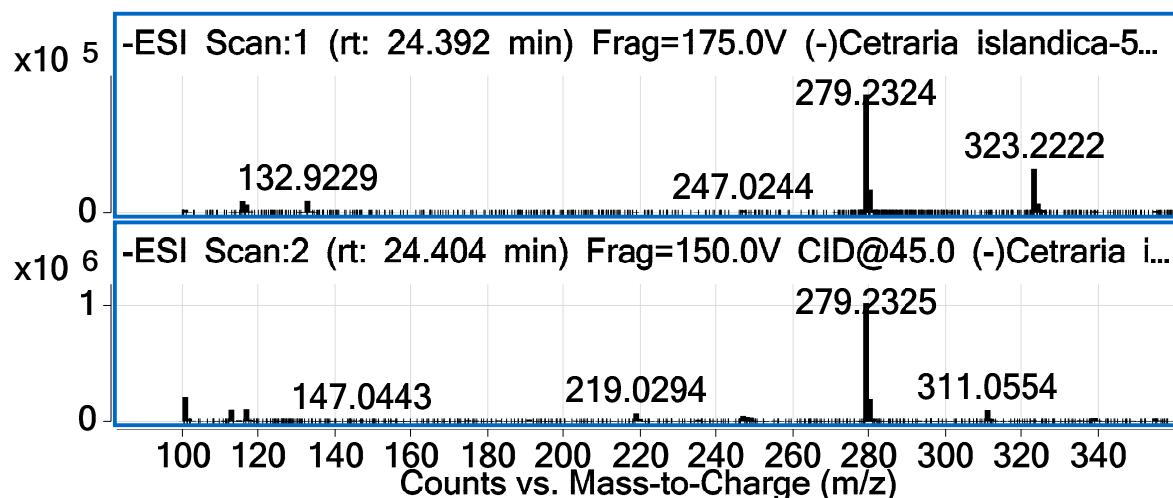
#### Peak-29



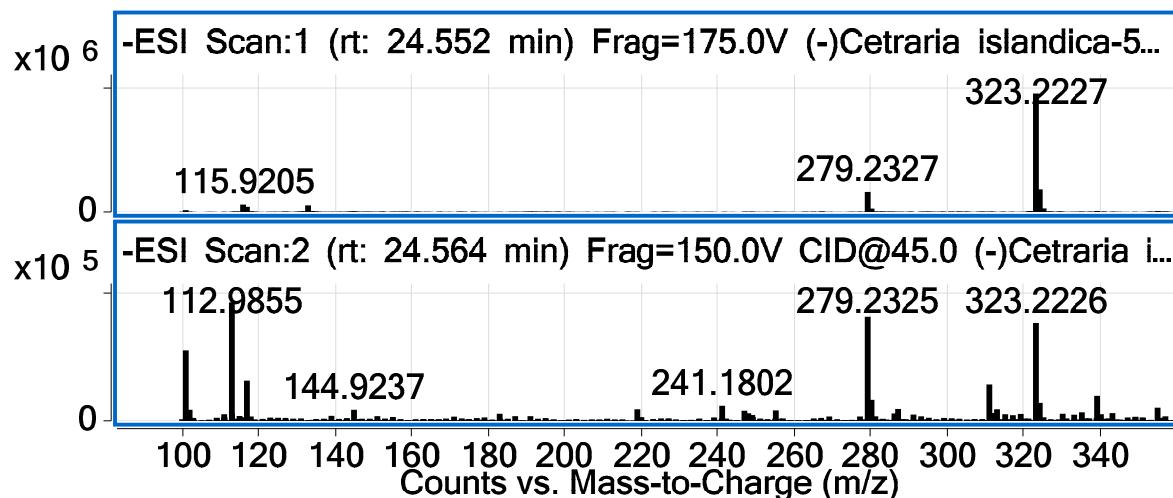
#### Peak-30



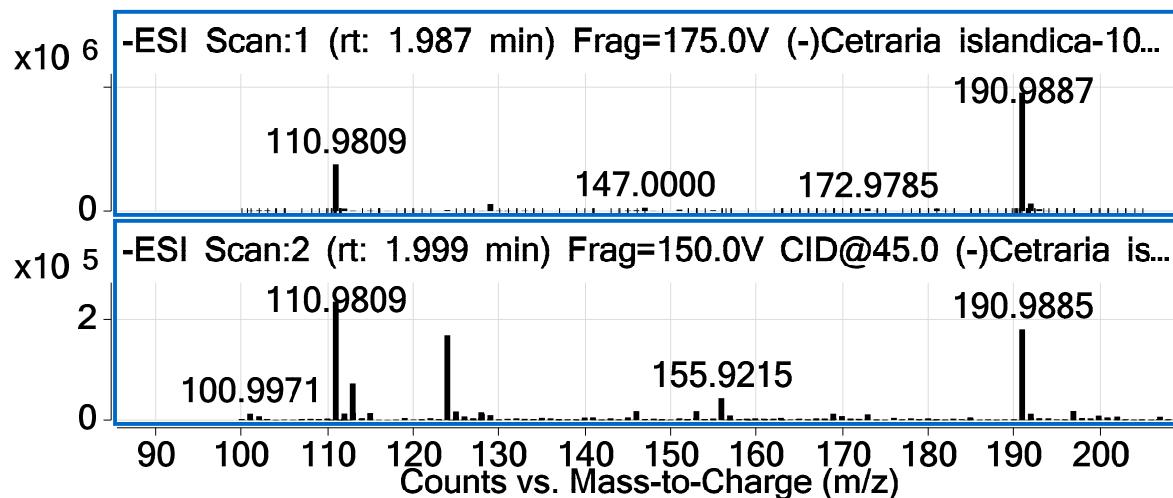
#### Peak-31



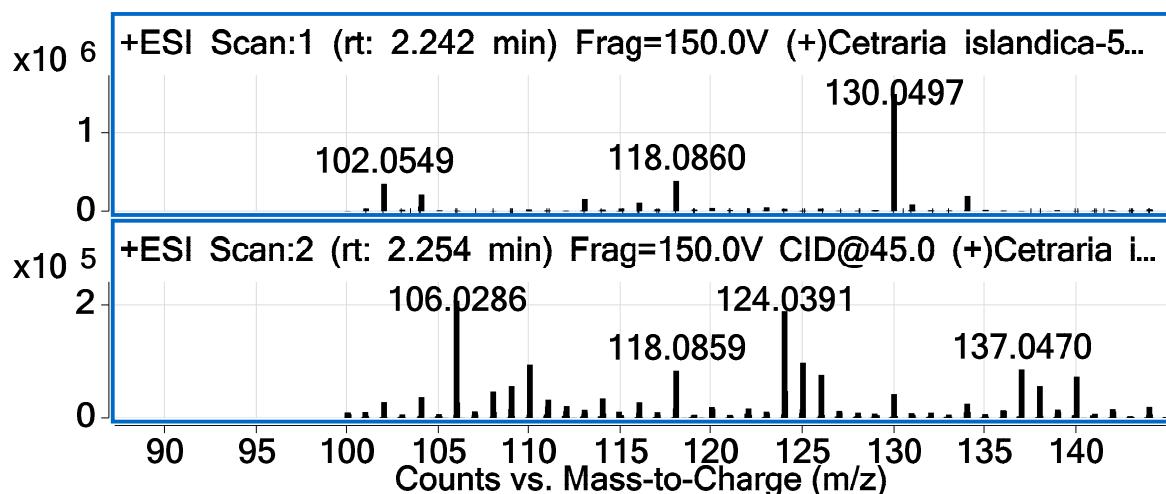
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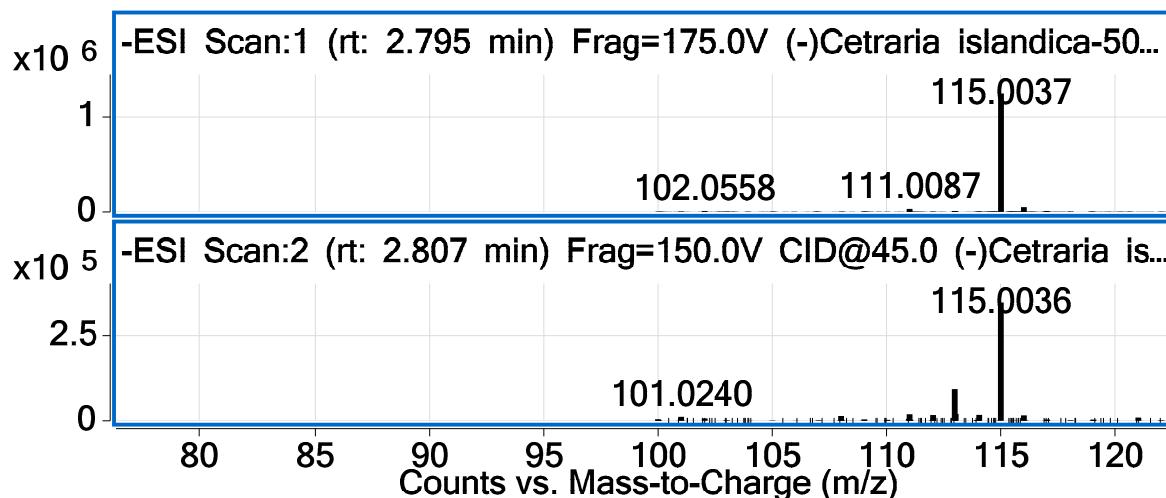
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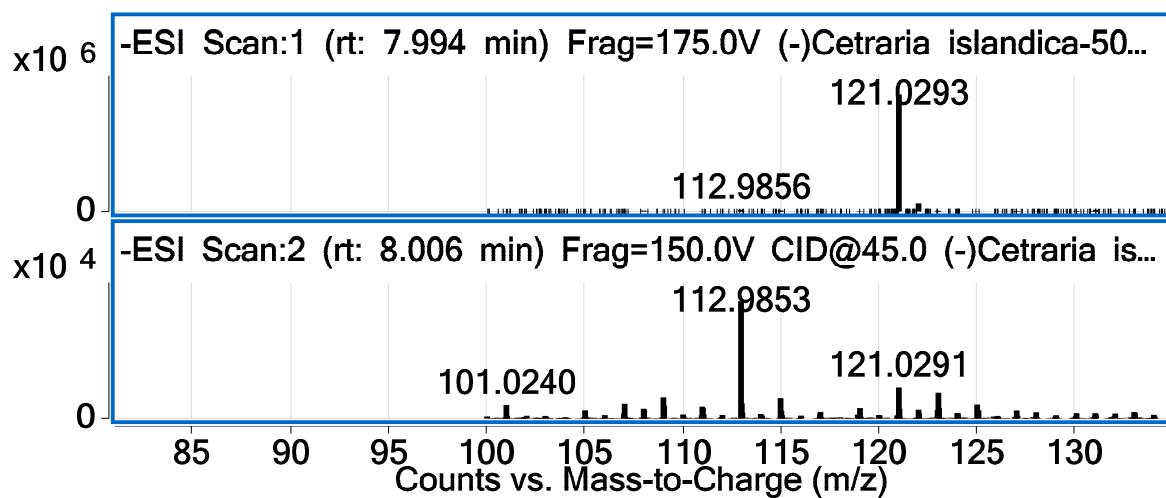
#### Peak-34



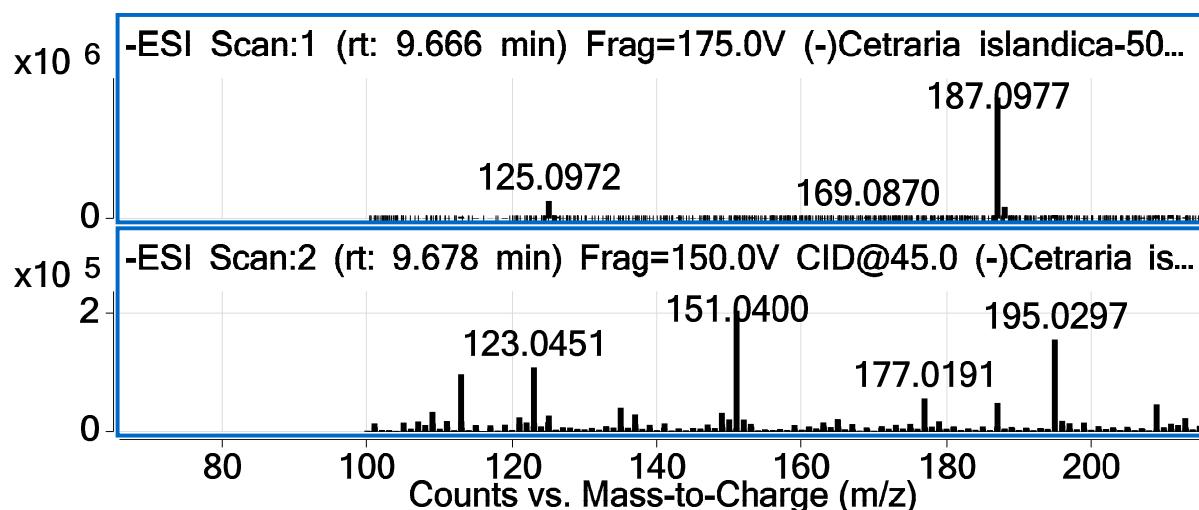
#### Peak-35



#### Peak-36



#### Peak-37



**Figure S29.** HR-MS/MS spectra of the identified compounds 1-37