

Electronic Supplementary Information for

**Overexpression of *div8* increases the production and diversity of divergolides in
Streptomyces sp. W112**

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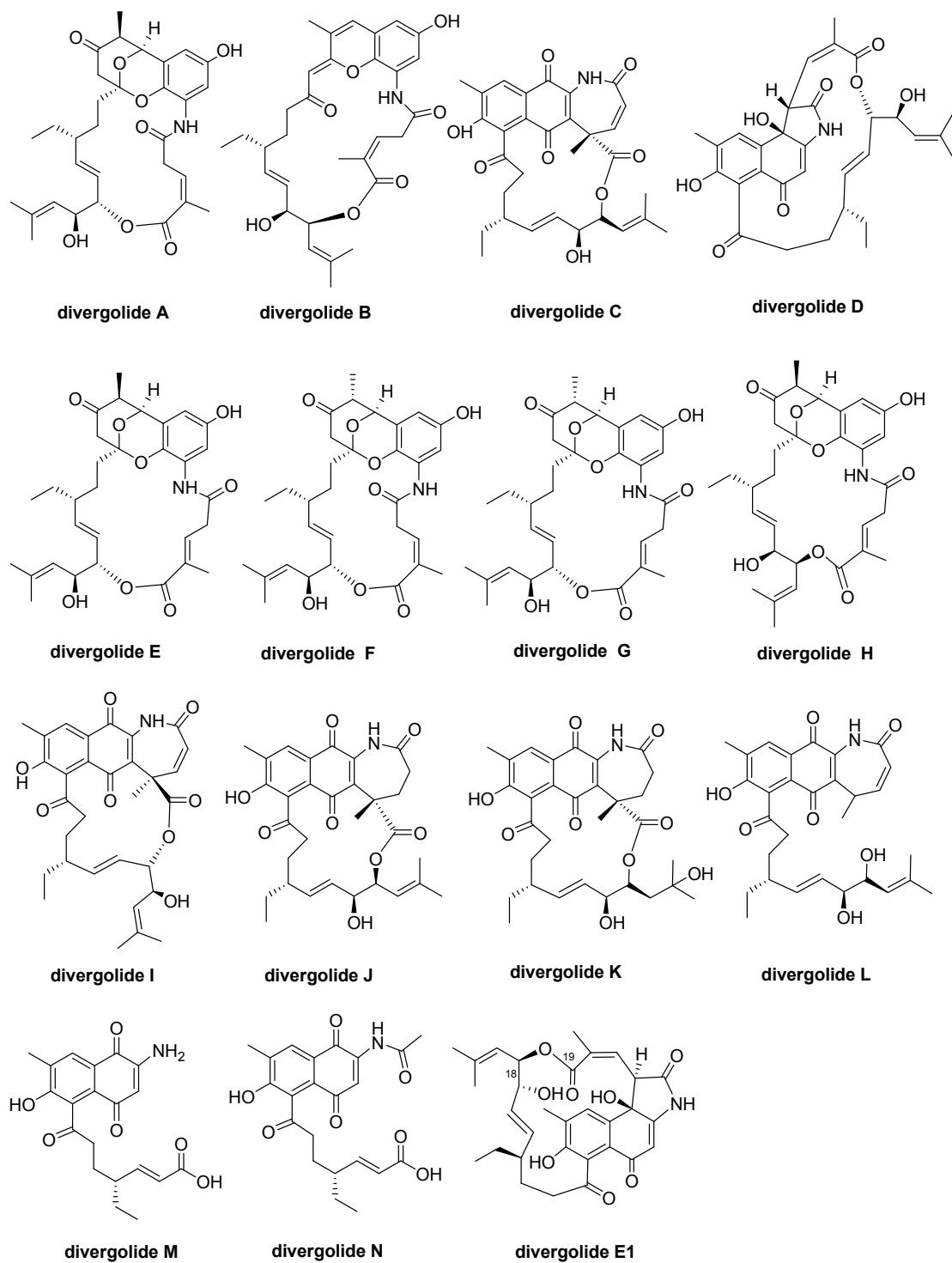


Fig.S1 The reported structures of divergolides

(Divergolides A-D reported by Ding et al, Angew Chem Int Ed Engl, 2011, 50, 1630-1634;

Divergolides E-H reported by Cui et al, Chembiochem, 2014, 15, 1274-1279;

Divergolides I-N reported by Ding et al, Org Biomol Chem, 2015, 13, 1618-1623);

Divergolide E1 (also named E) reported by Li et al, Gene, 2014, 544, 93-99)

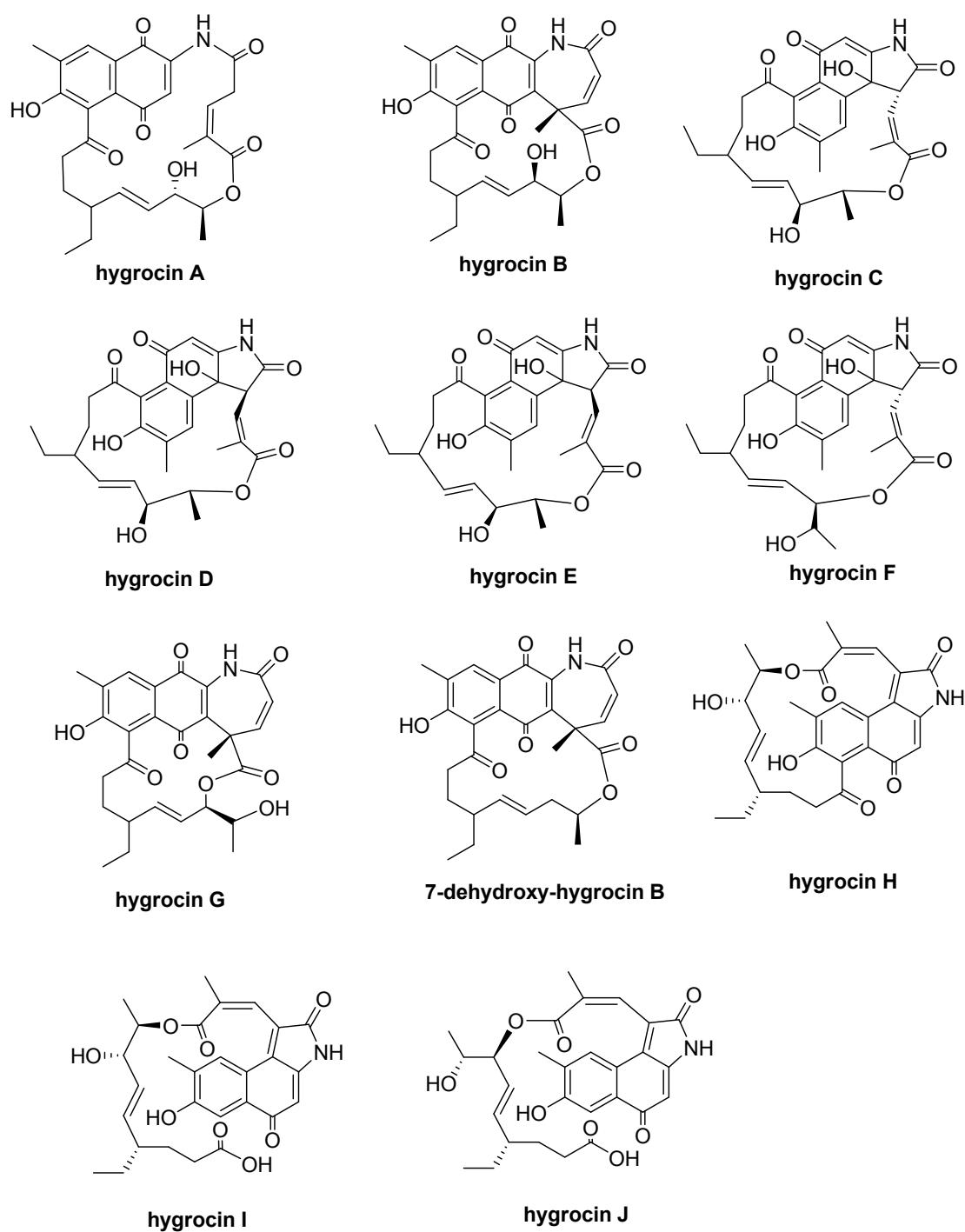


Fig.S2 The reported structures of hygrocins

(Hygrocins A and B reported by Cai et al, *J Nat Prod.* 2005, 68(12):1736-42;

Hygrocins C-G reported by Lu et al, *J Nat Prod.* 2013, 76(12): 2175-9;

Hygrocins H-I reported by Li et al, *RSC Adv.* 2015, 5, 83843-83846; DOI: 10.1039/C5RA12623A

7-dehydroxy-hygrocin B reported by Li et al, *Chembiochem.* 2014, 15(1):94-102.)

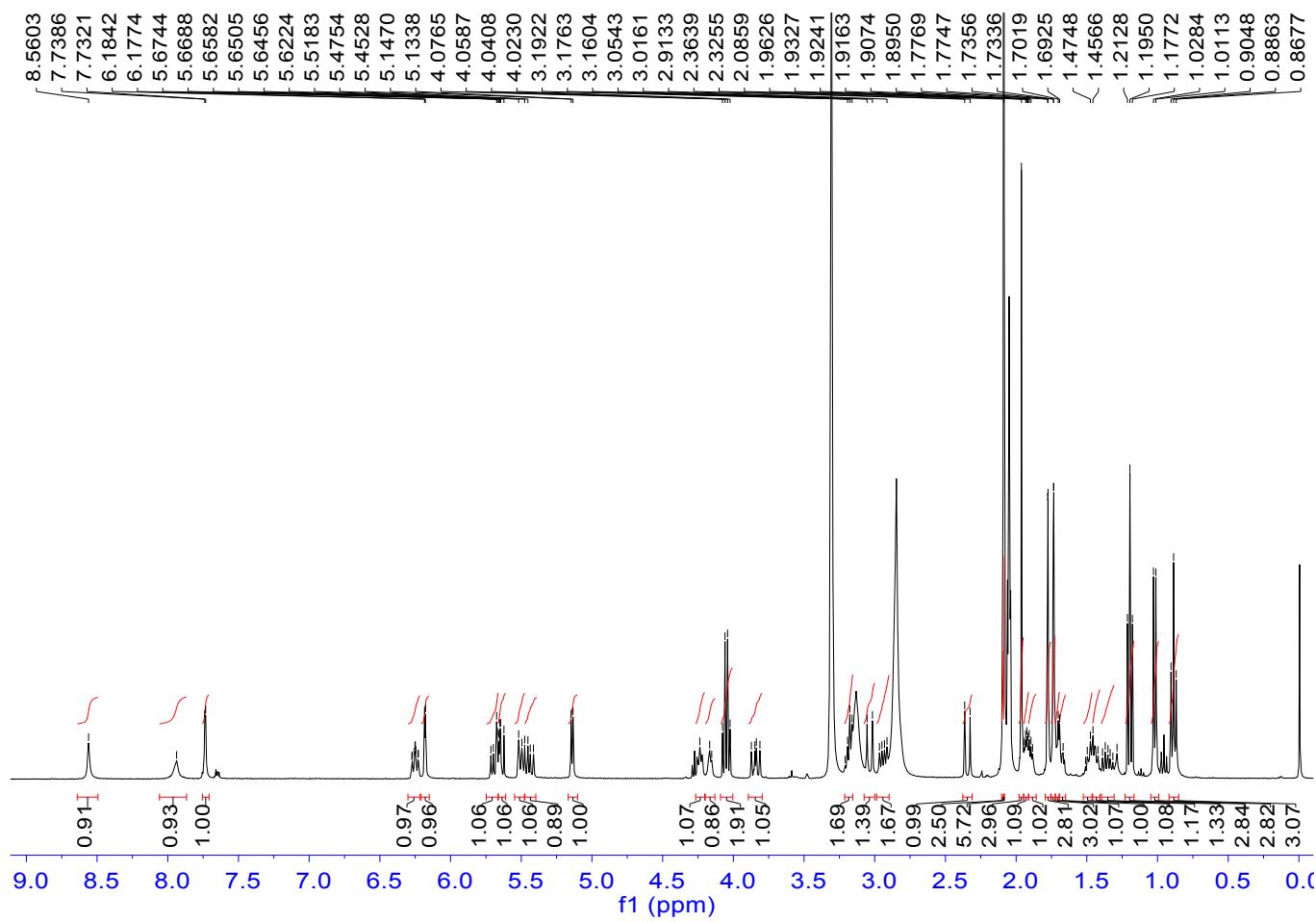


Figure S3. ¹H-NMR (400MHz, CD₃COCD₃) spectrum of **1**

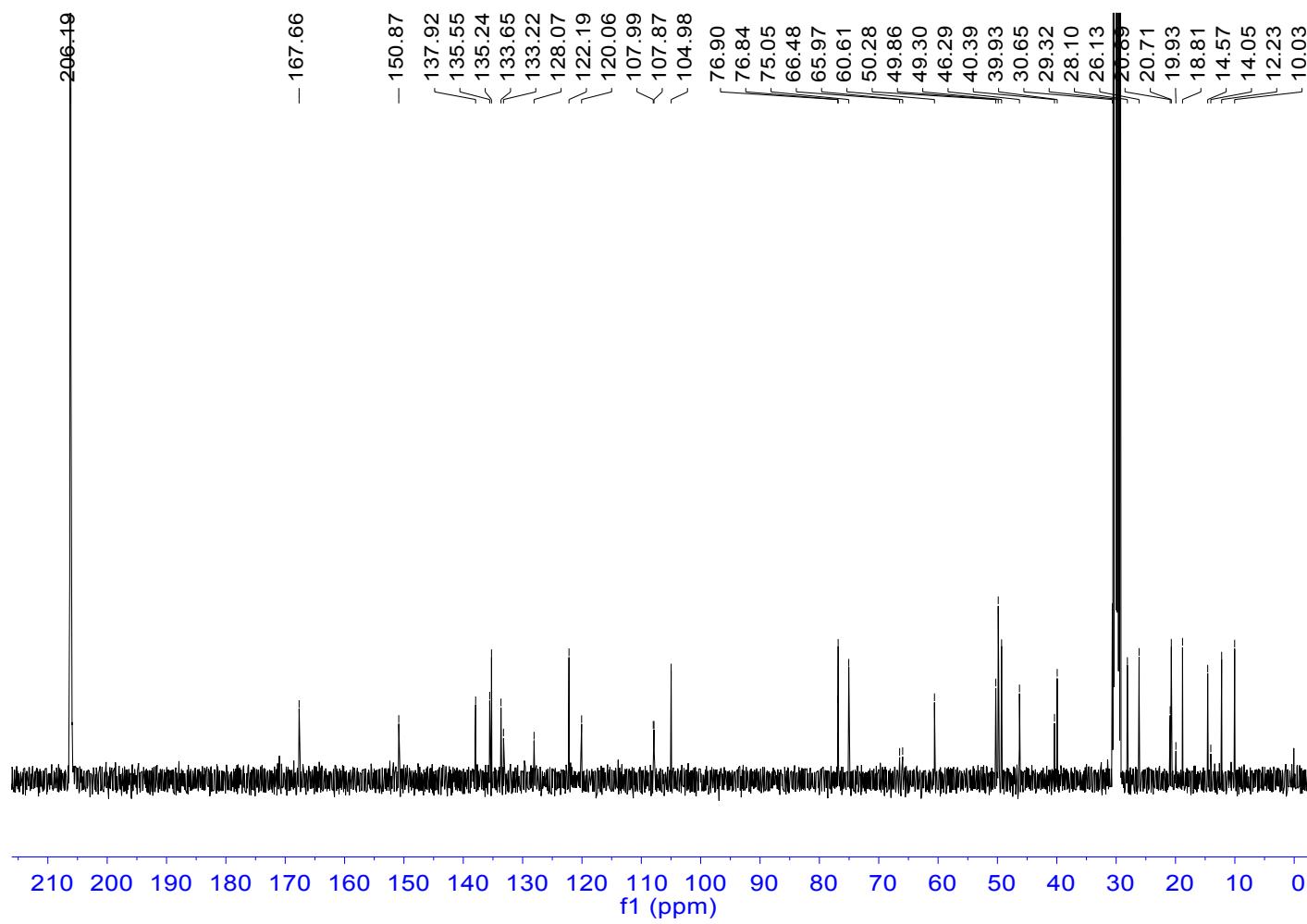


Figure S4. ^{13}C -NMR (100MHz, CD_3COCD_3) spectrum of **1**

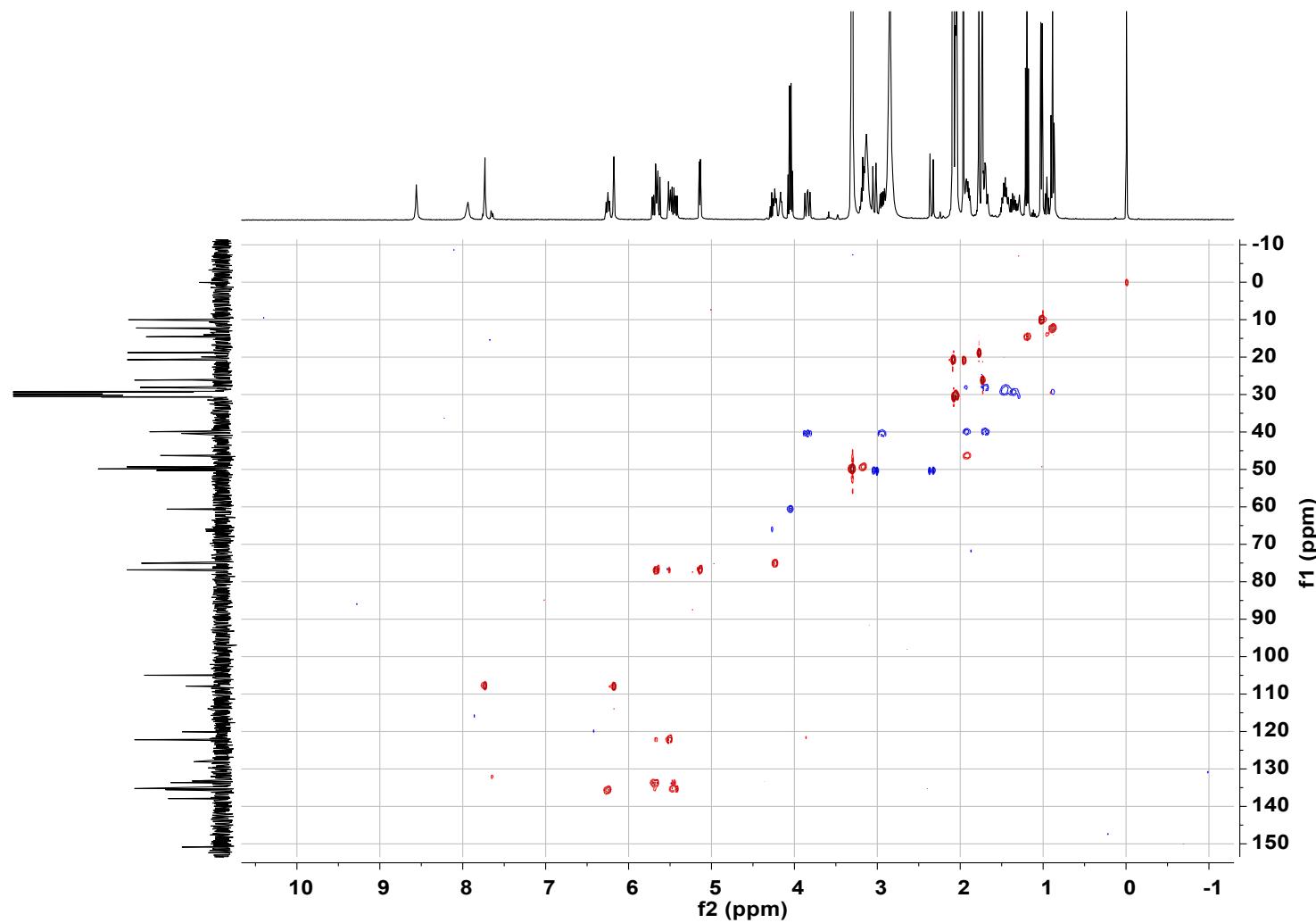


Figure S5. HSQC spectrum of **1**

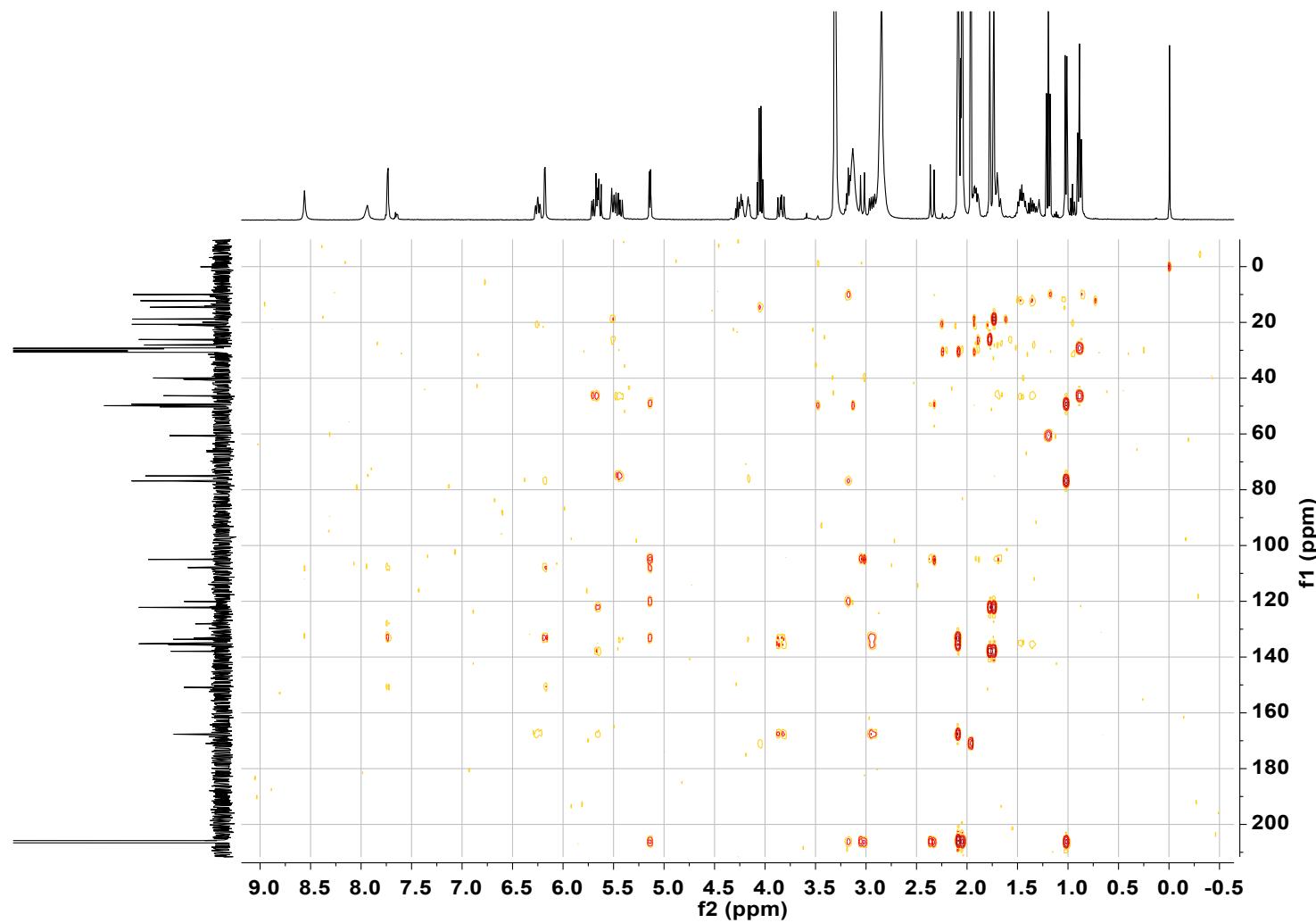


Figure S6. HMBC spectrum of **1**

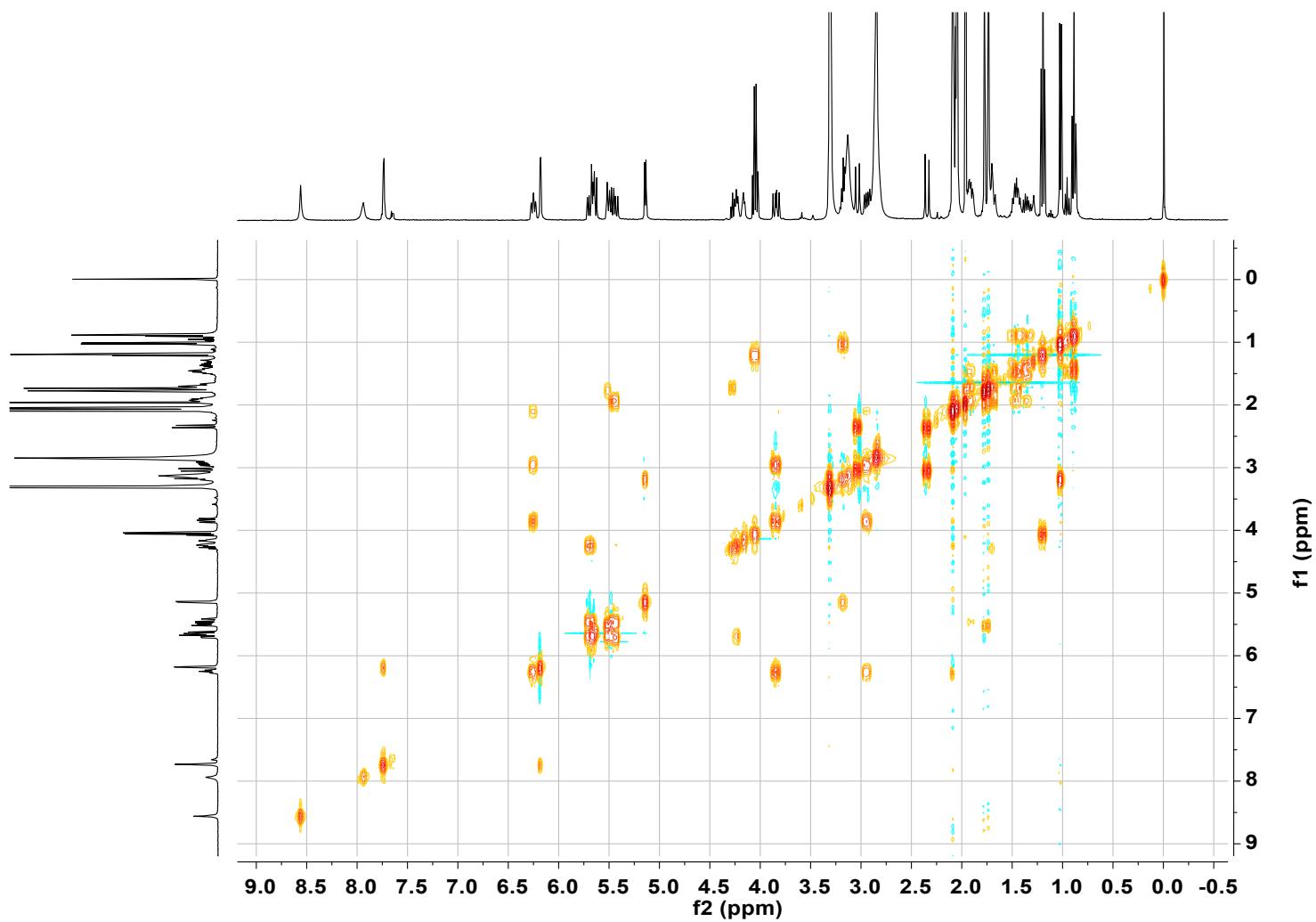


Figure S7. COSY spectrum of 1.

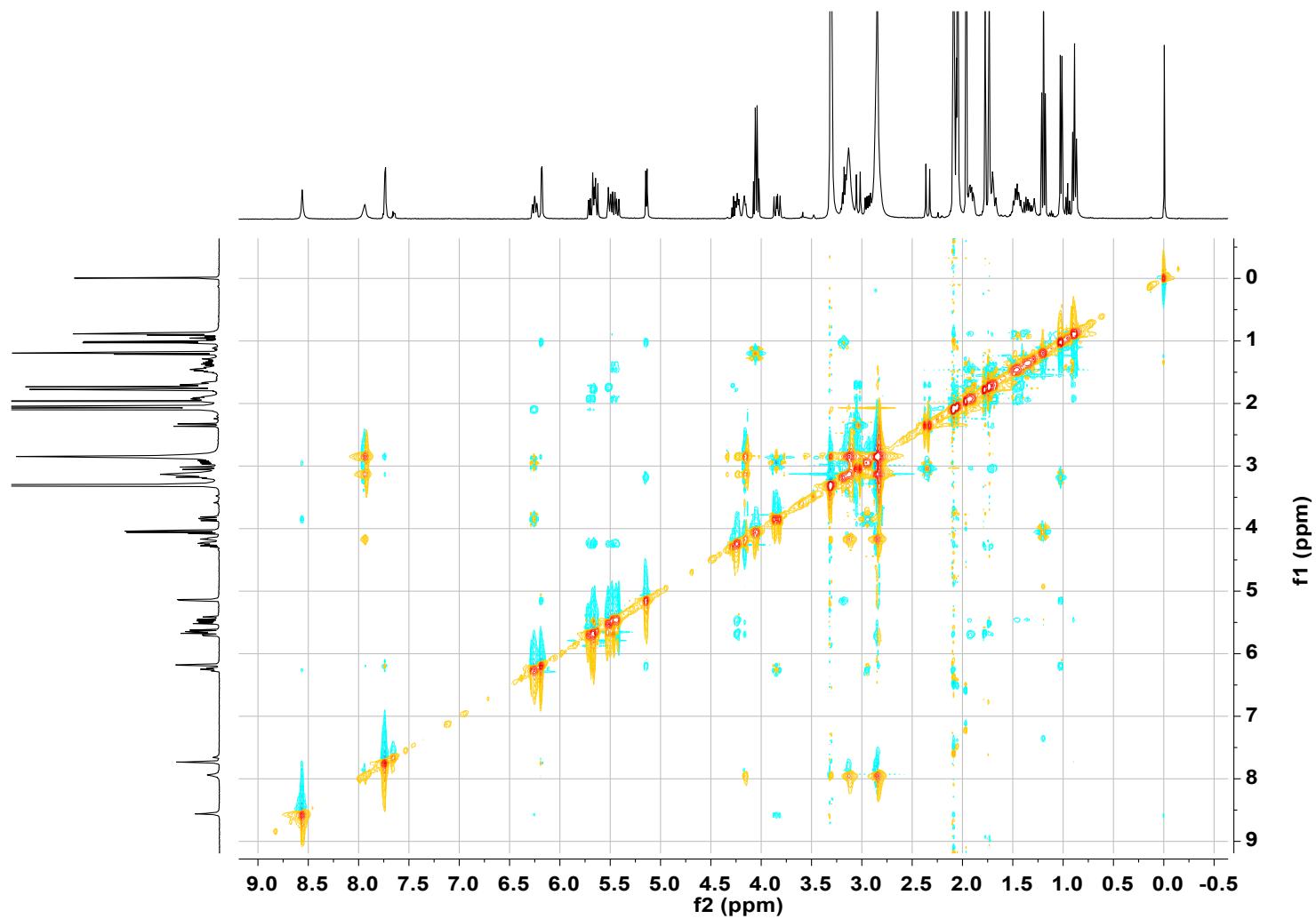


Figure S8. NOESY spectrum of 1

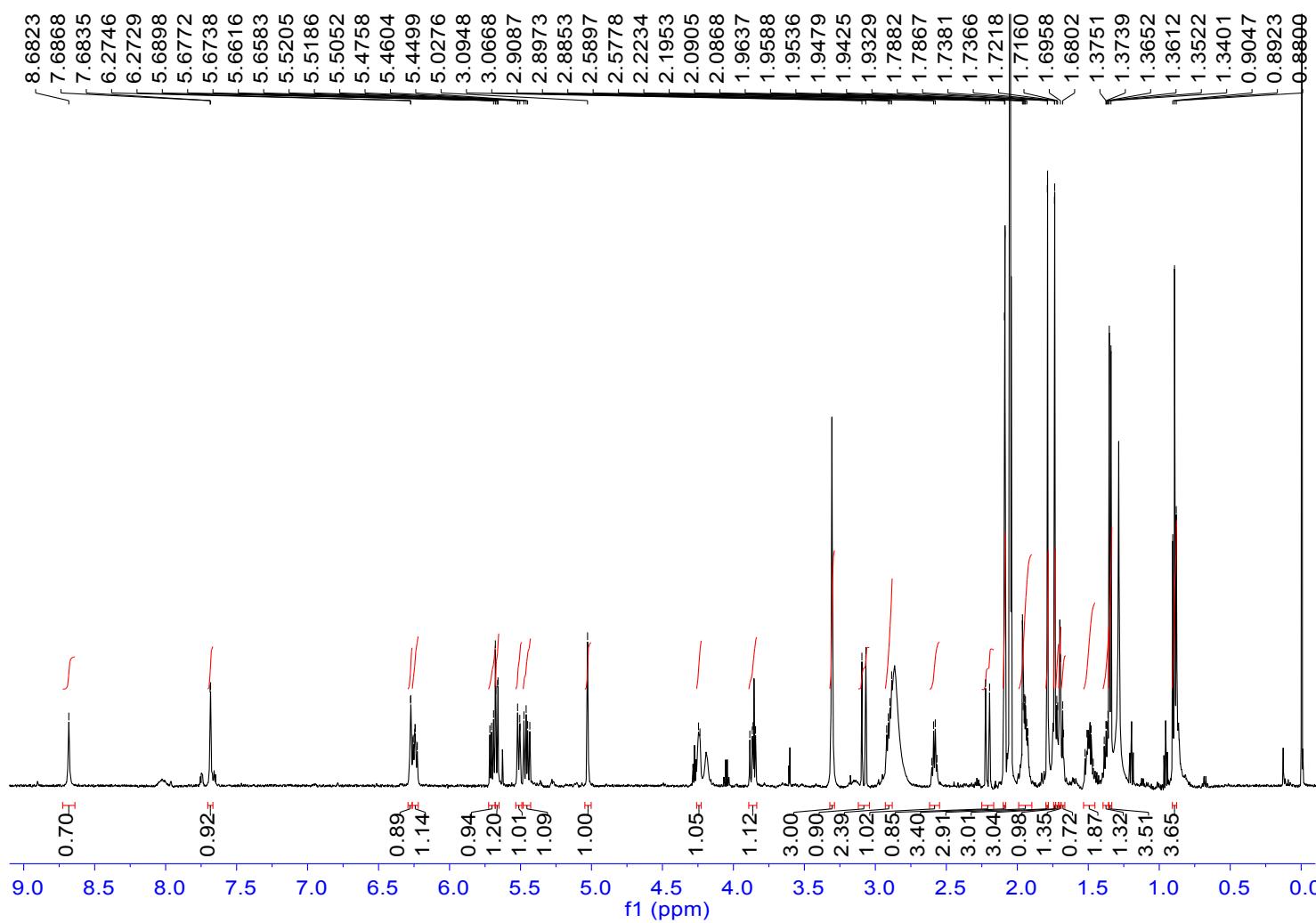


Figure S9. ^1H -NMR (600MHz, CD_3COCD_3) spectrum of **2**

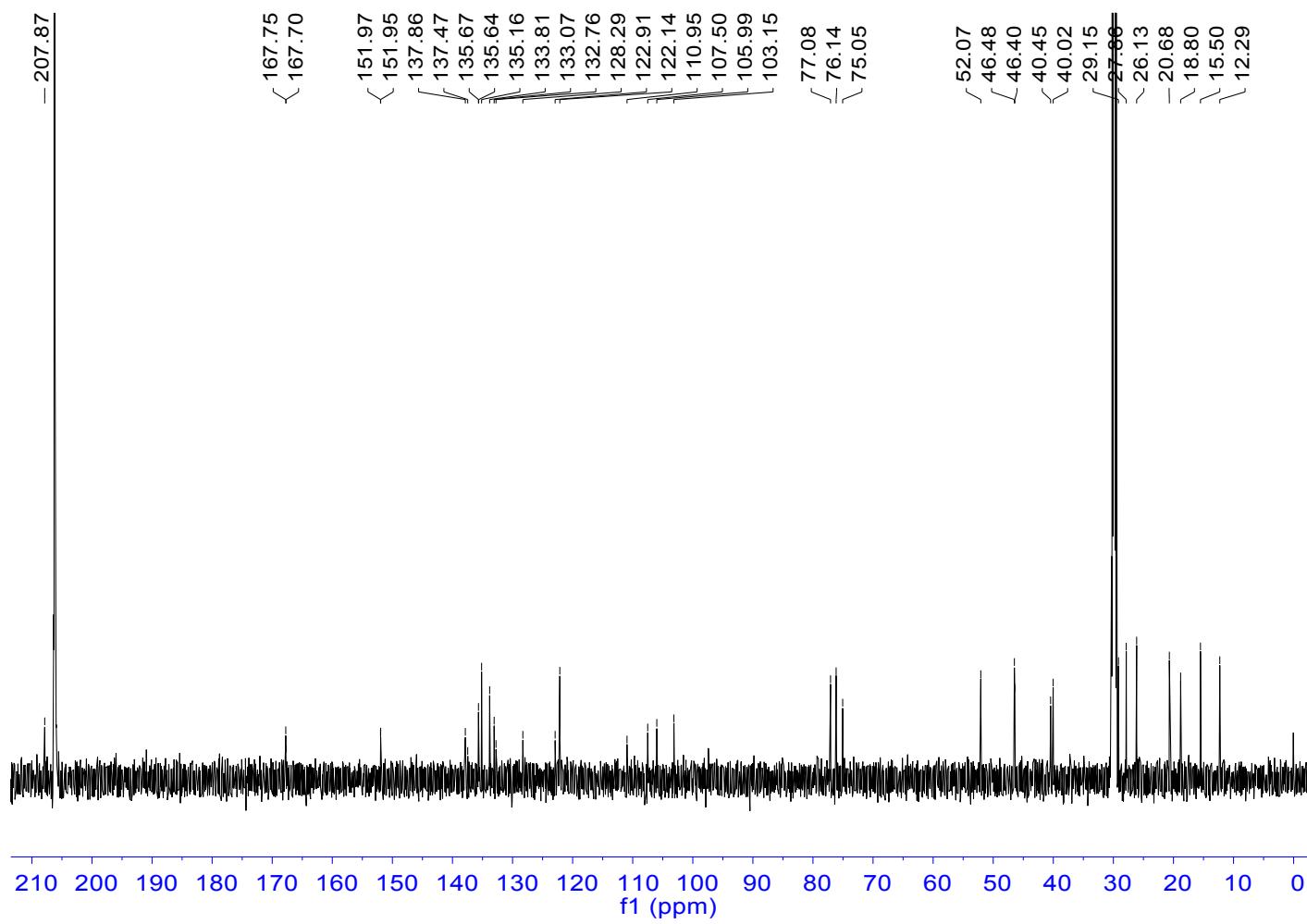


Figure S10.¹³C-NMR (150MHz, CD₃COCD₃) spectrum of **2**

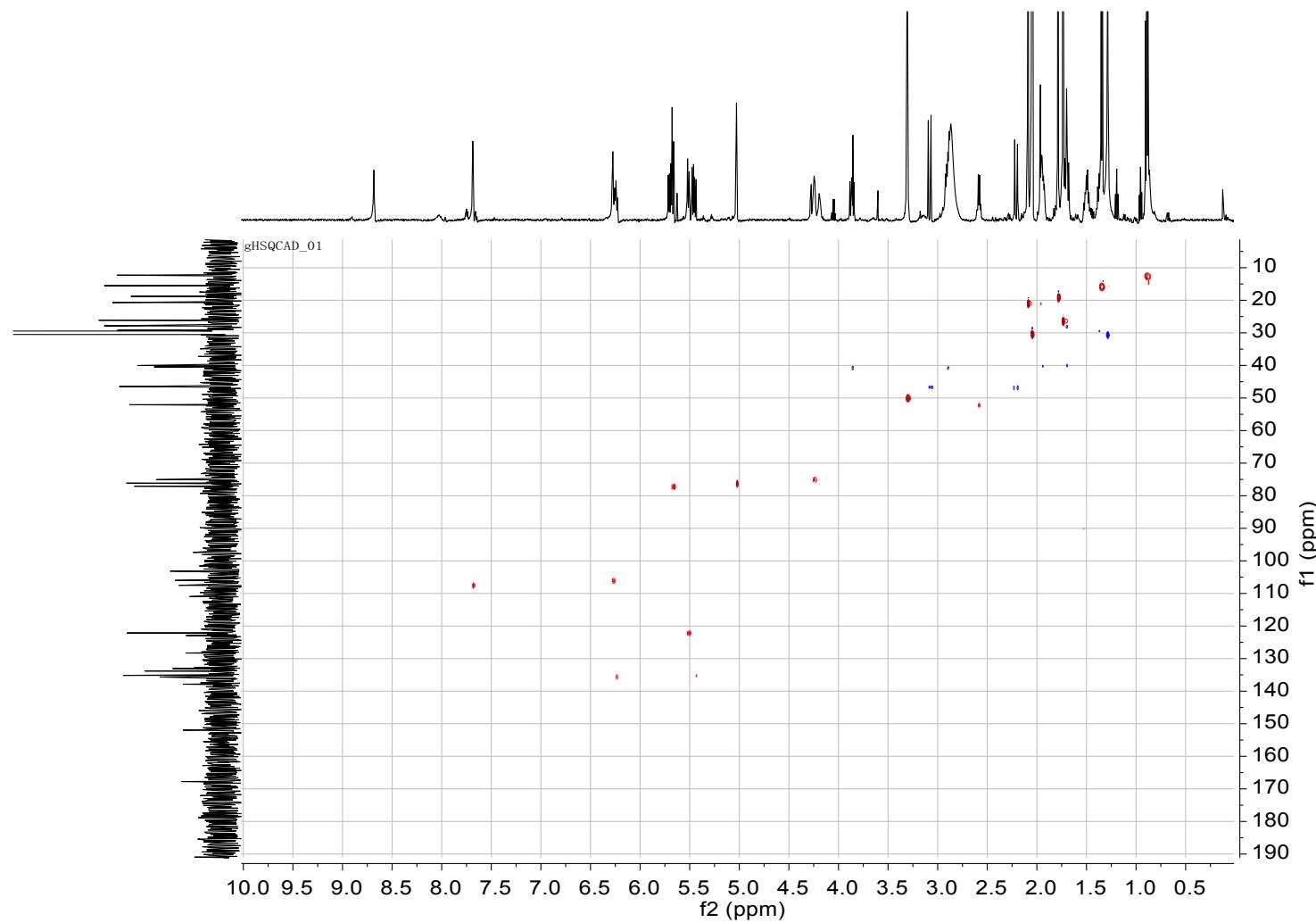


Figure S11. HSQC spectrum of **2**

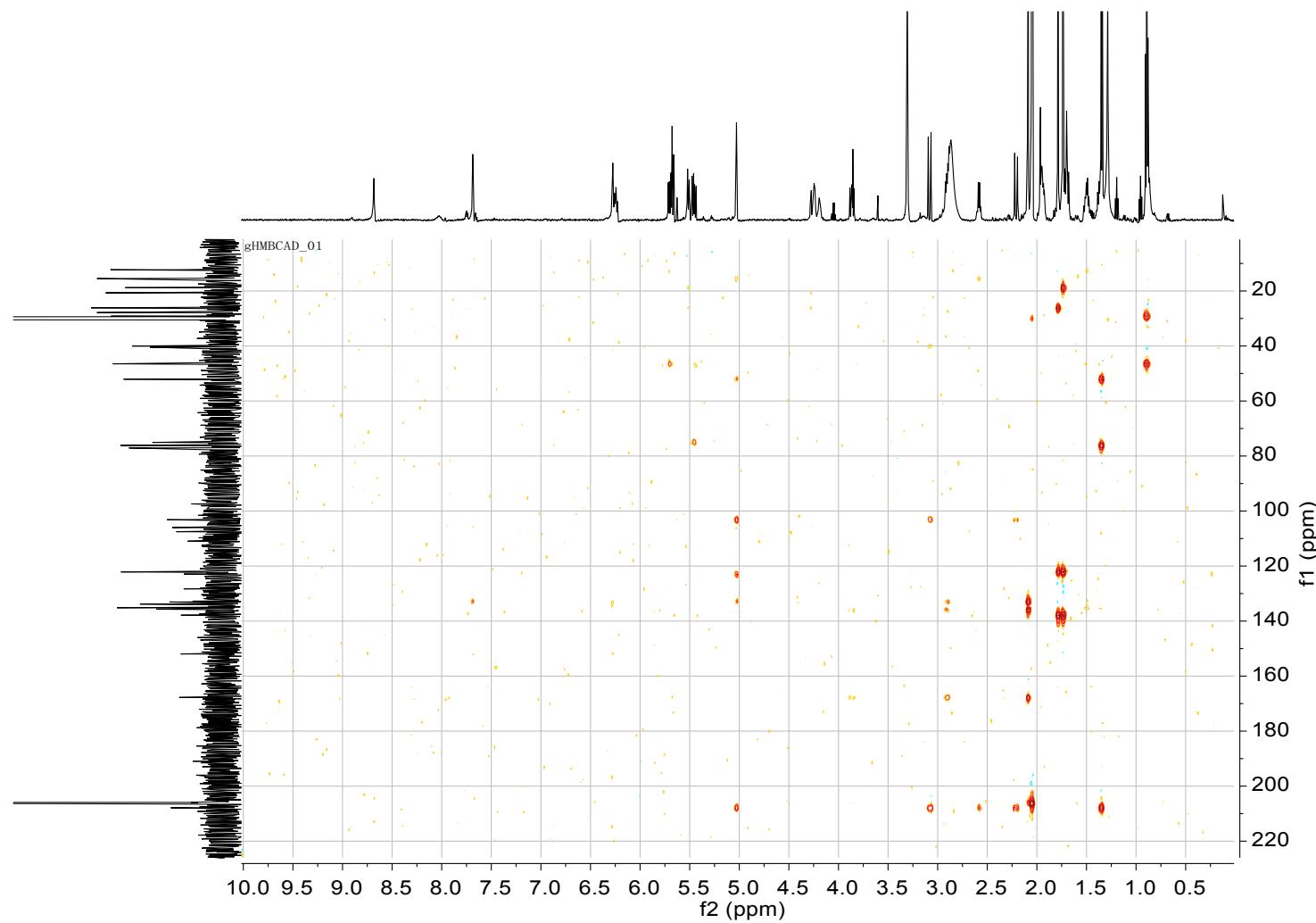


Figure S12. HMBC spectrum of **2**

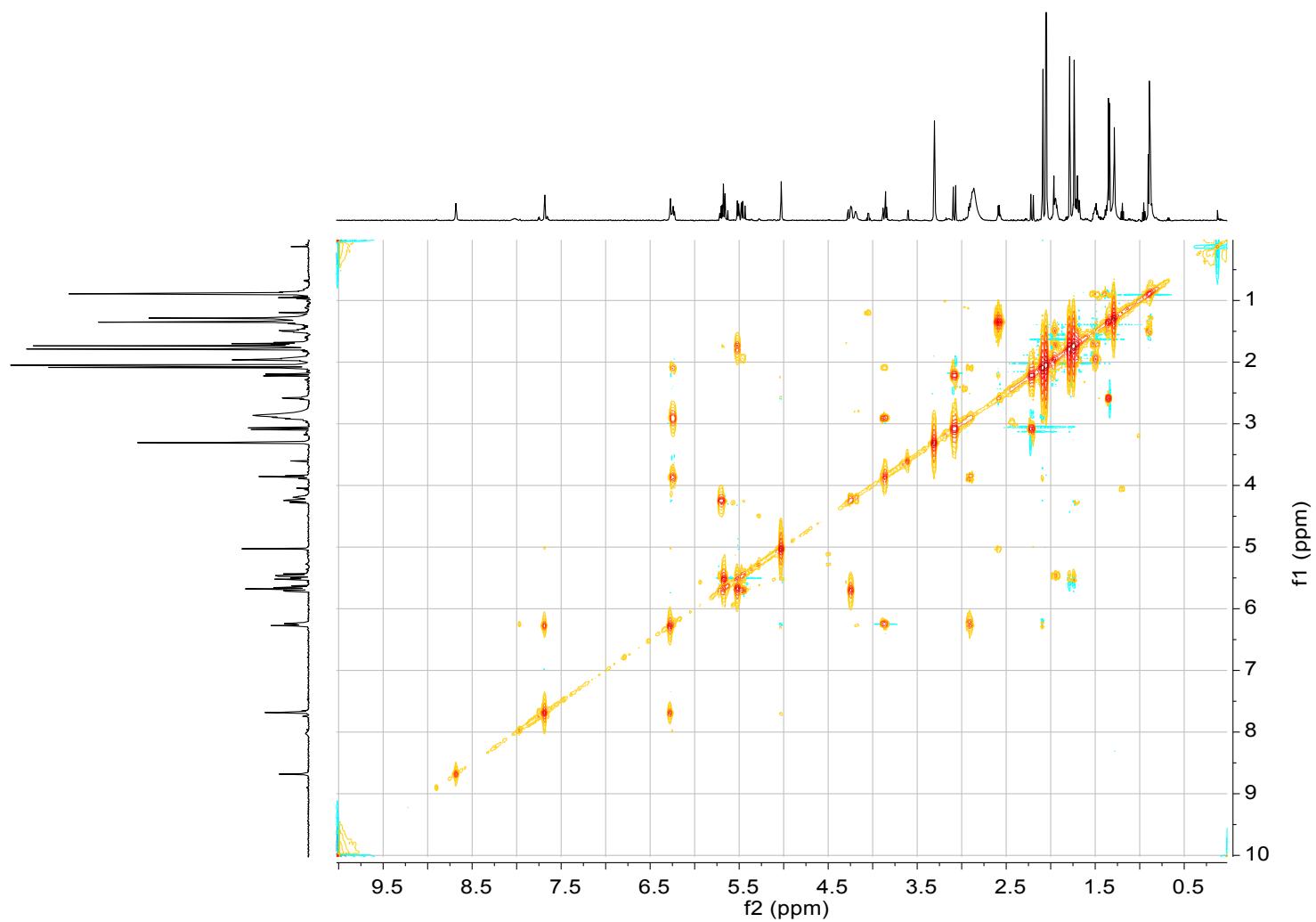


Figure S13. COSY spectrum of **2**

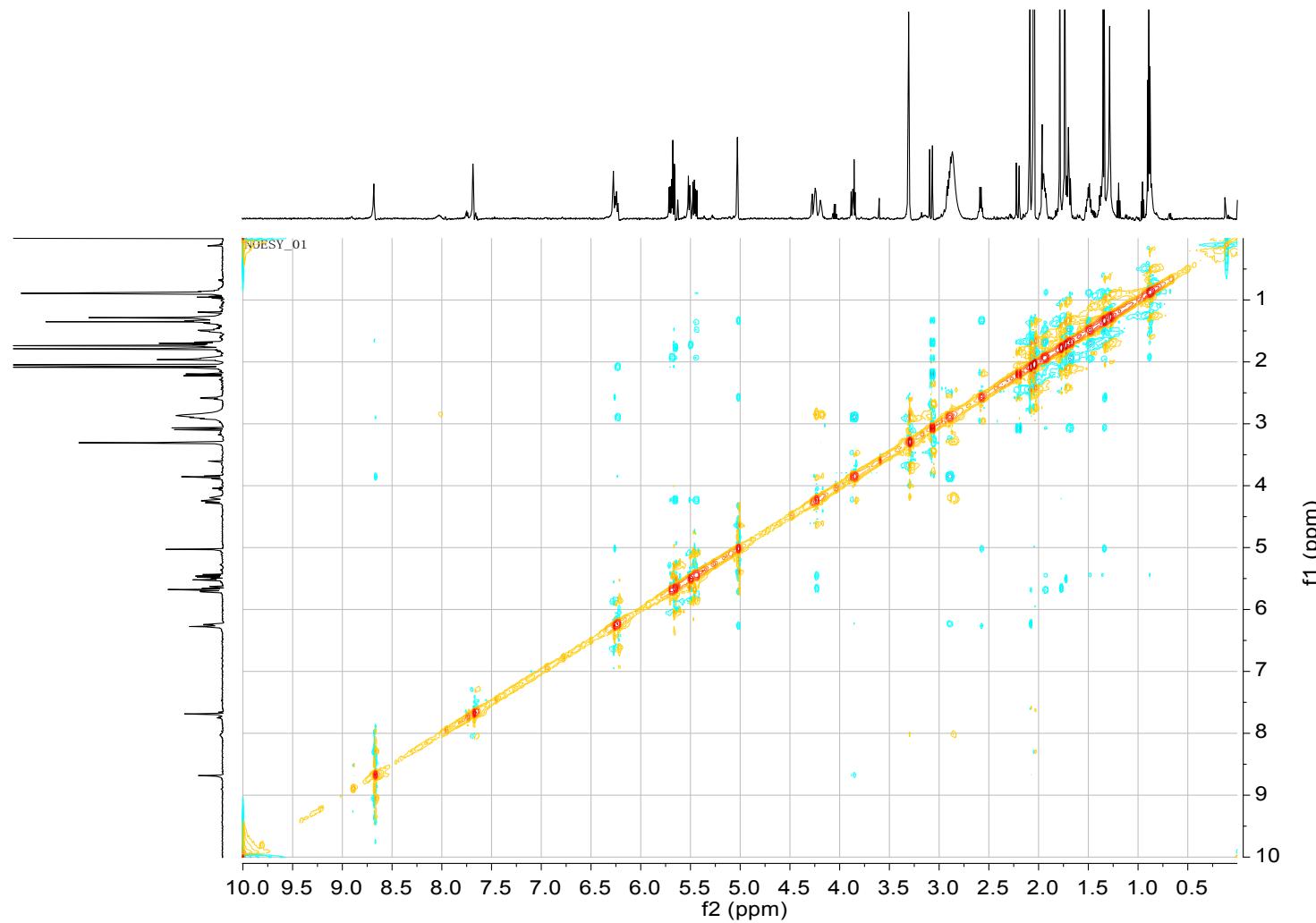


Figure S14. NOESY spectrum of **2**

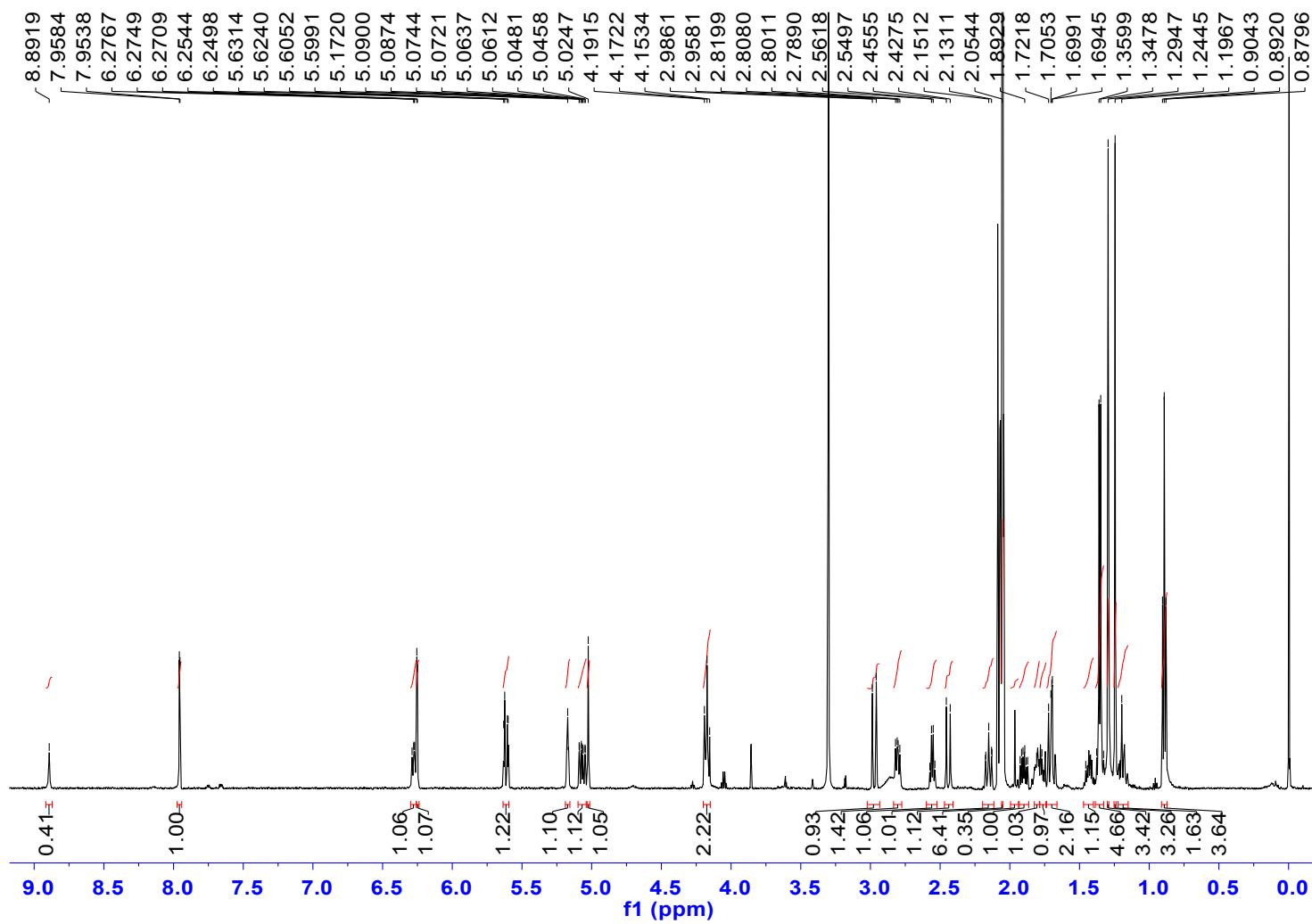


Figure S15. ^1H -NMR (600MHz, CD_3COCD_3) spectrum of **3**

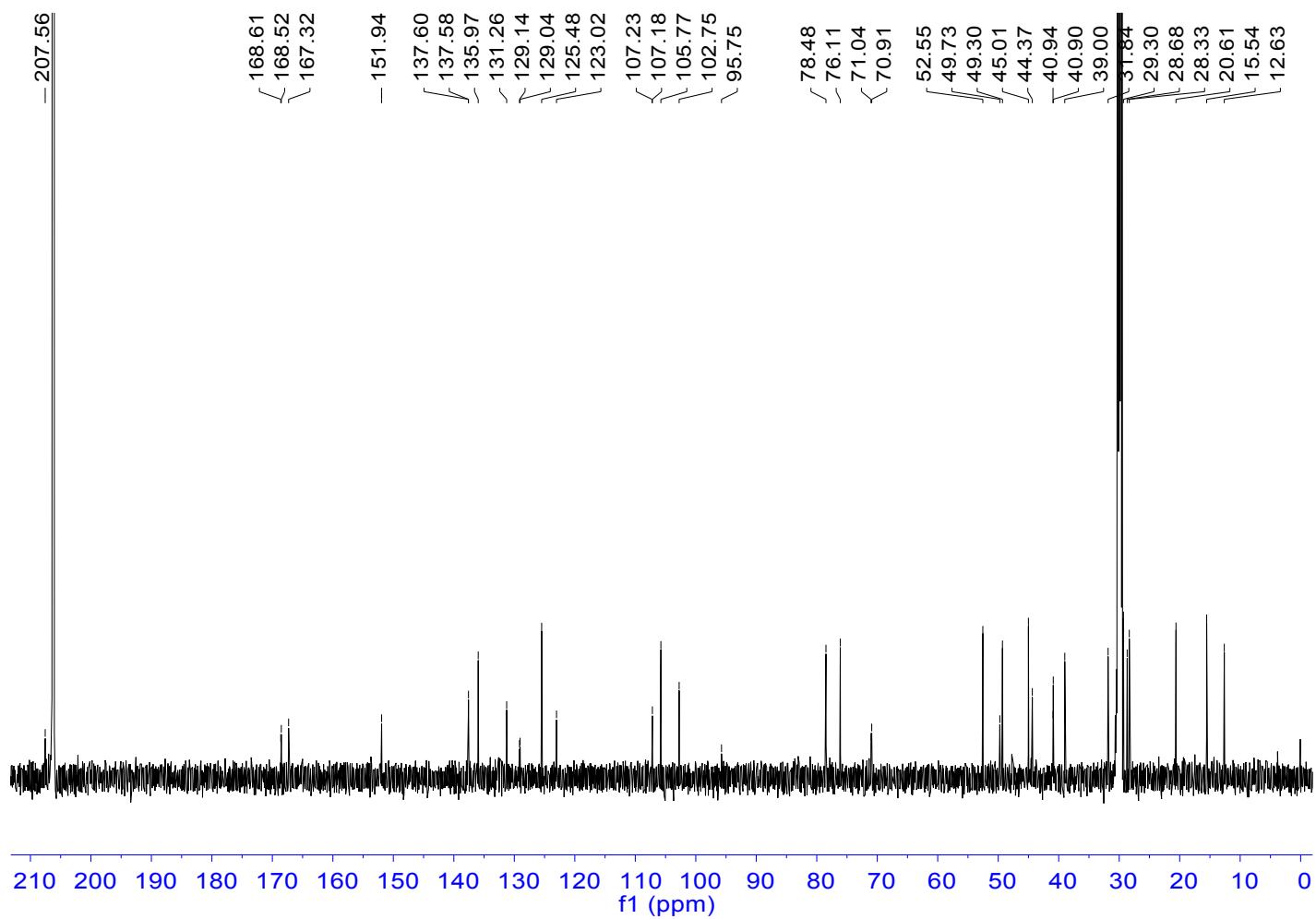


Figure S16. ^{13}C -NMR (150MHz, CD_3COCD_3) spectrum of **3**

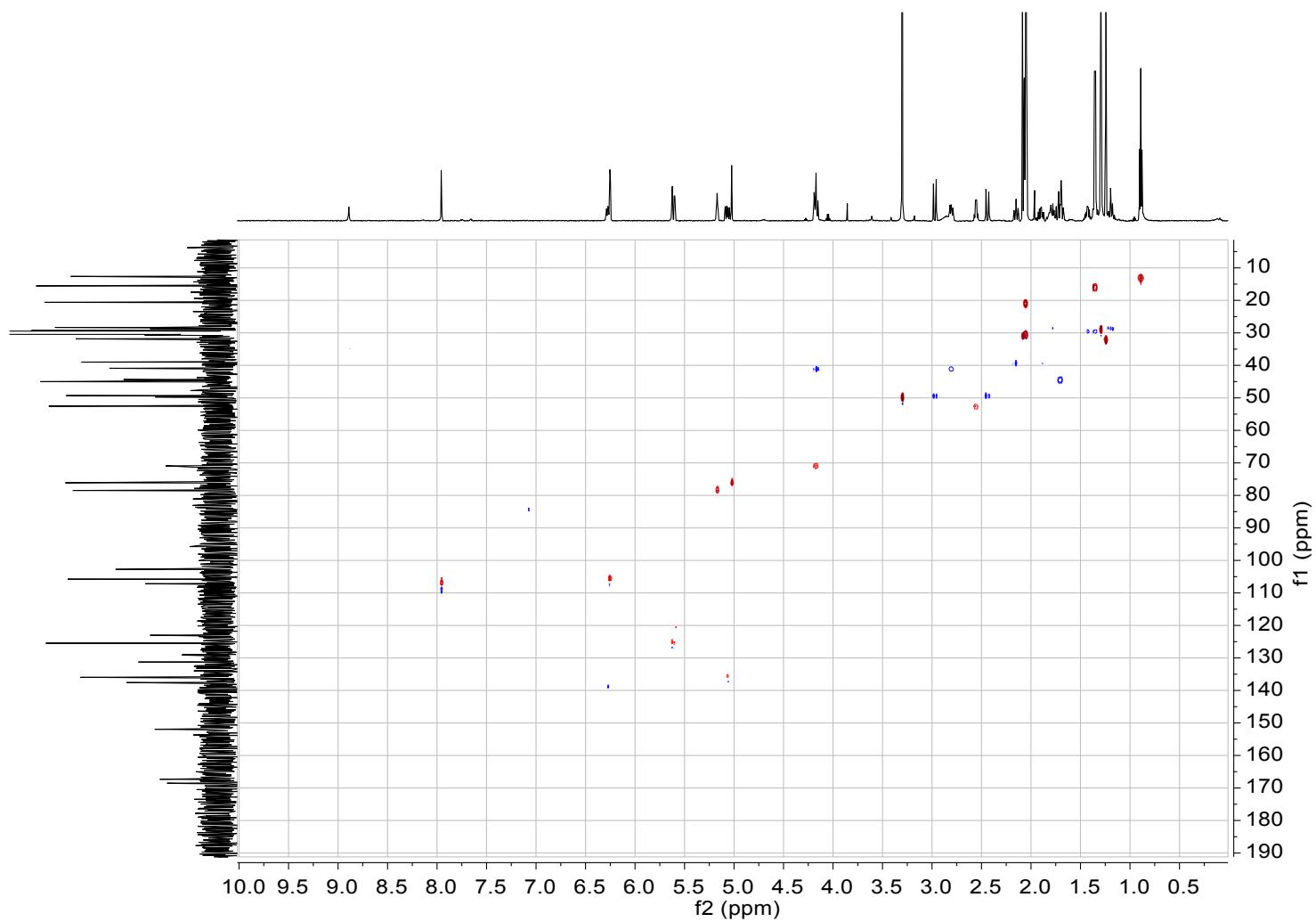


Figure S17. HSQC spectrum of 3

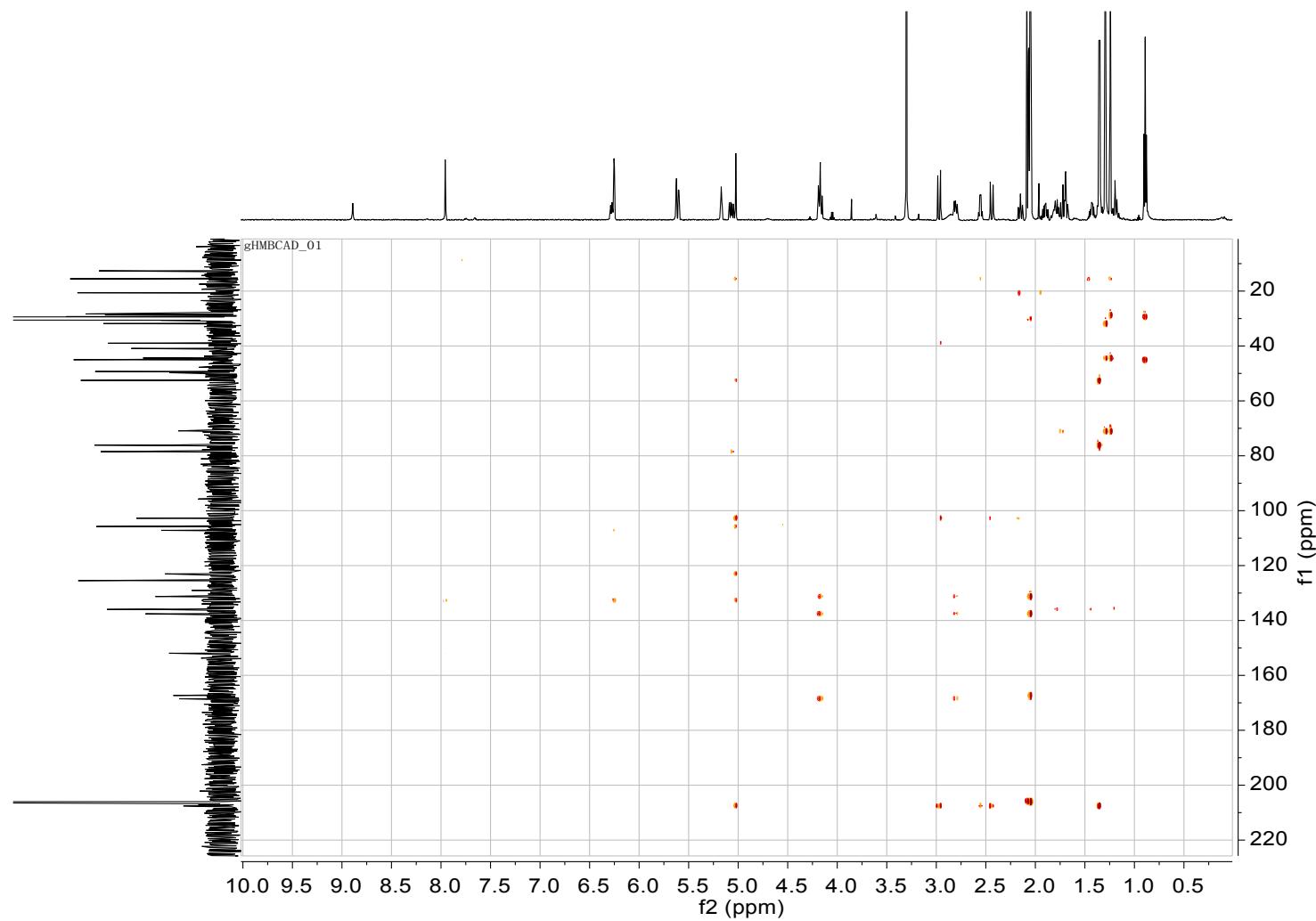


Figure S18. HMBC spectrum of **3**

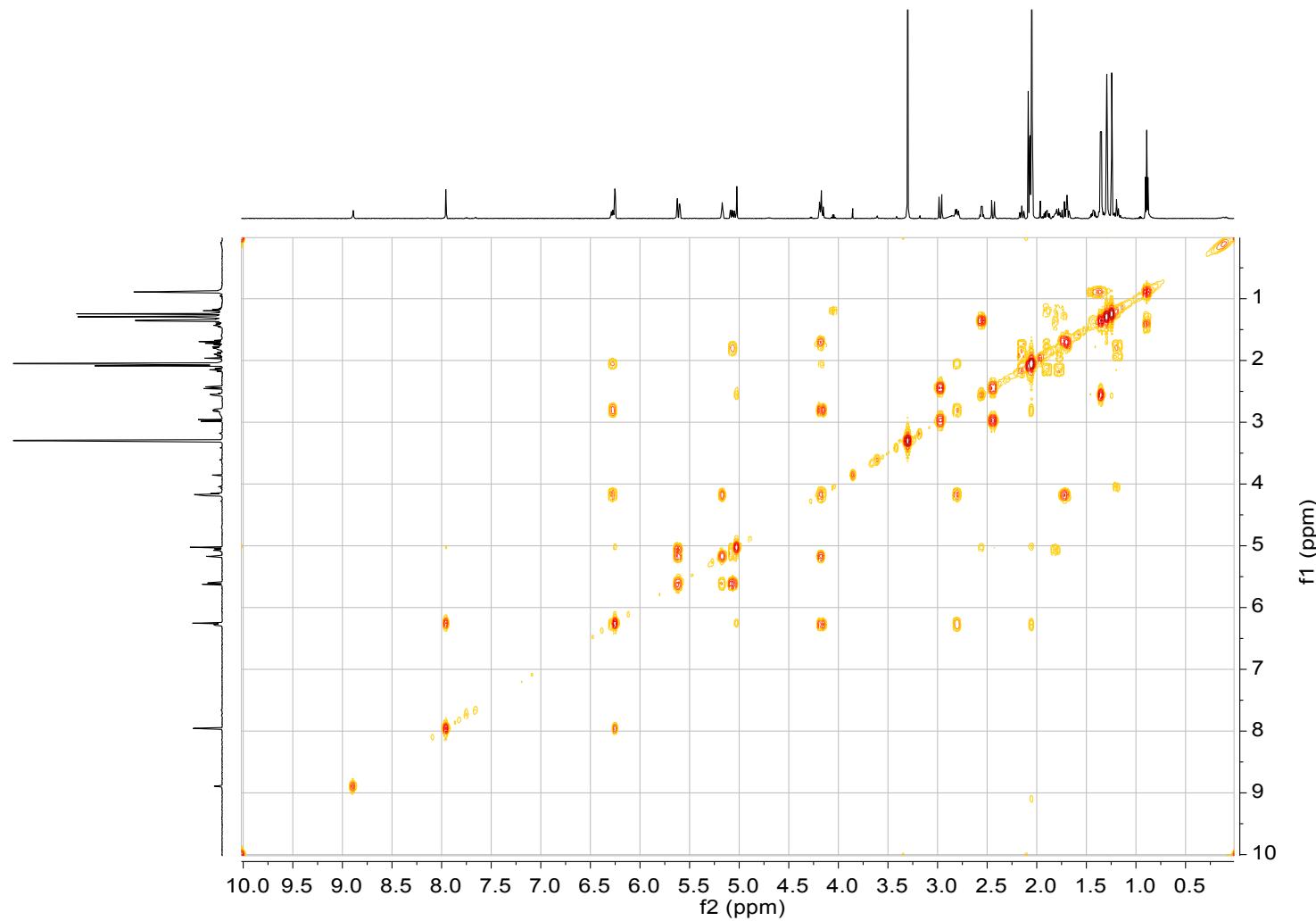


Figure S19. COSY spectrum for **3**

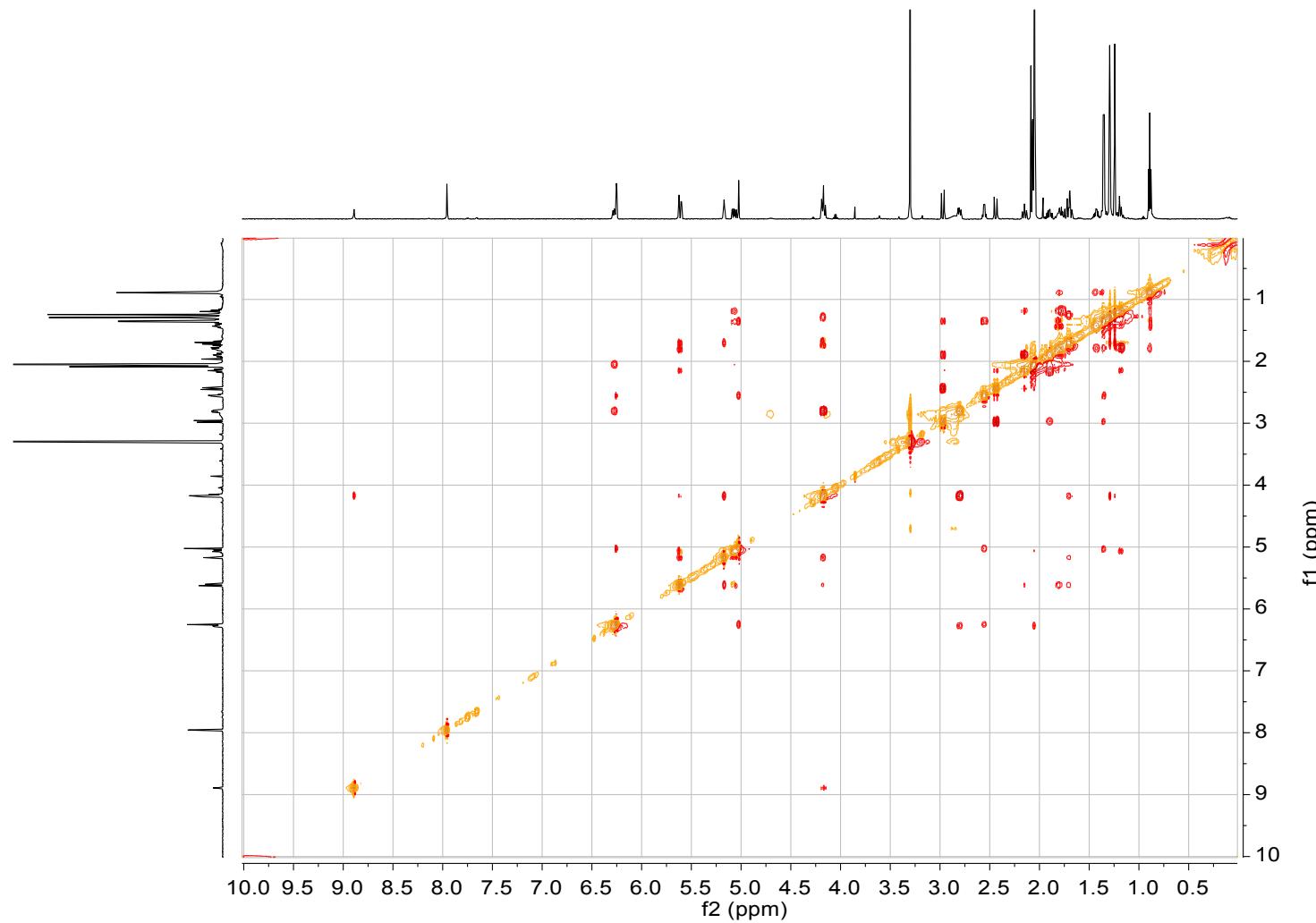


Figure S20. NOESY spectrum of **3**

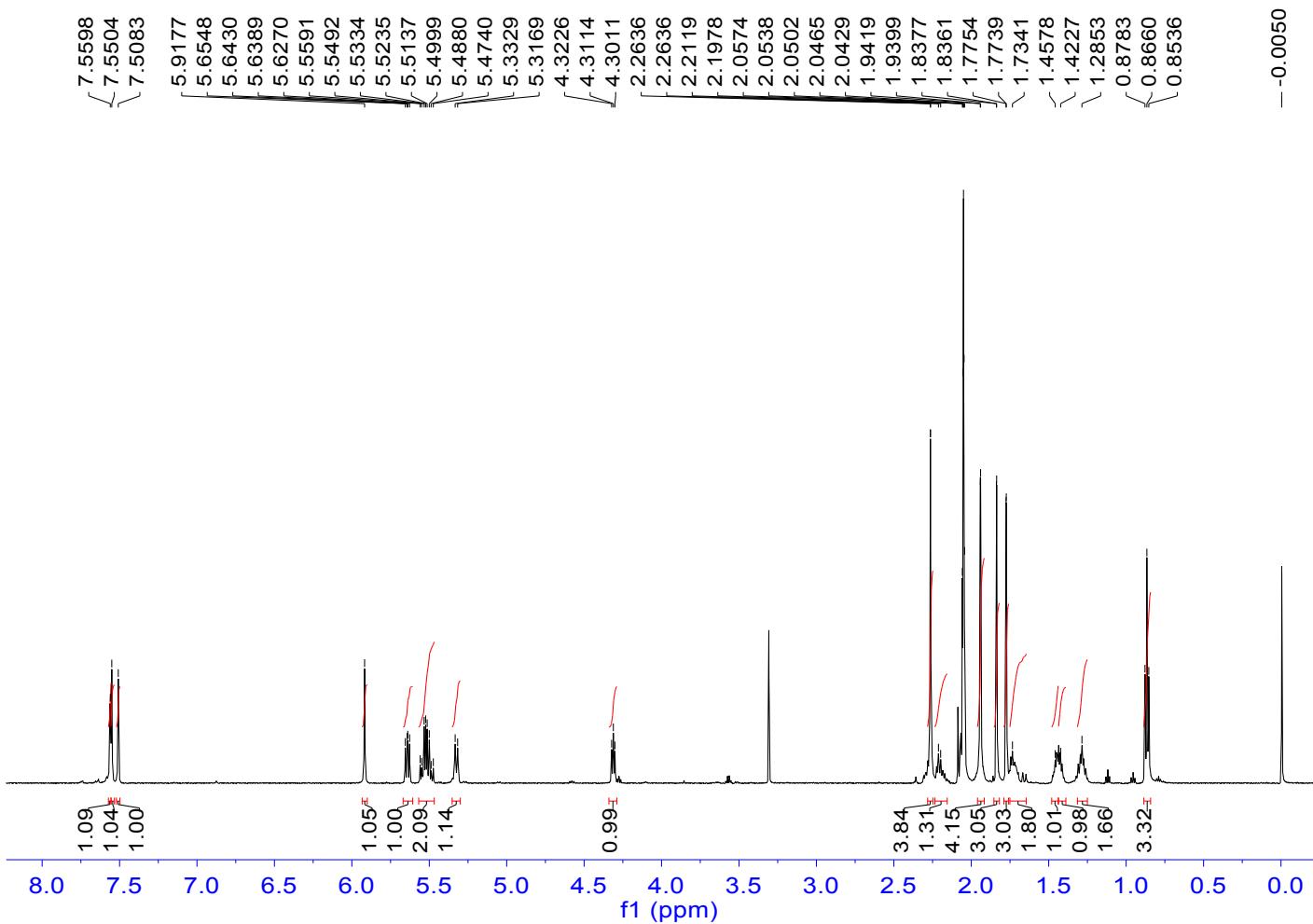


Figure S21. ^1H NMR spectrum of **4** (600 MHz).

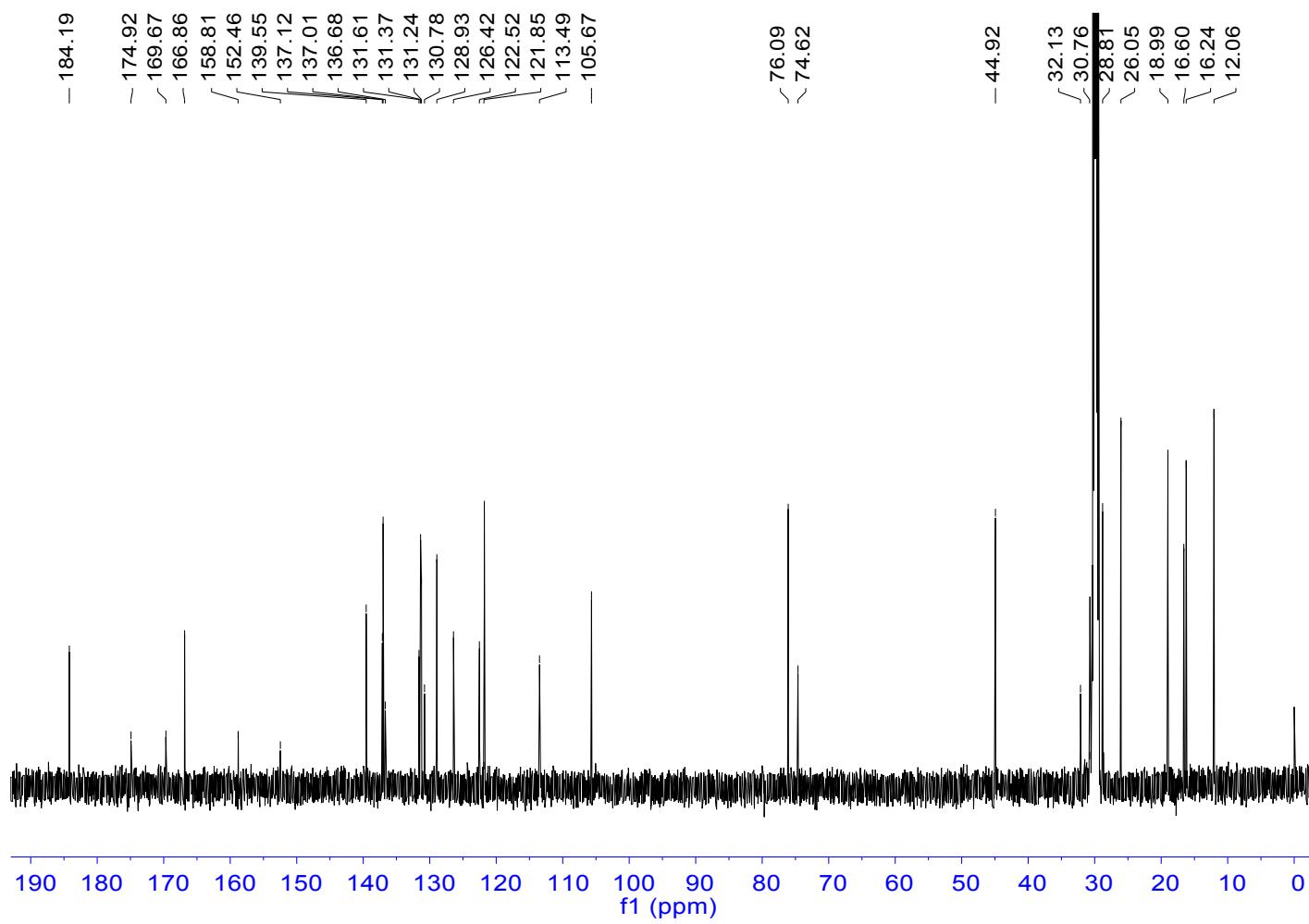


Figure S22. ^{13}C NMR spectrum of **4** (150MHz)

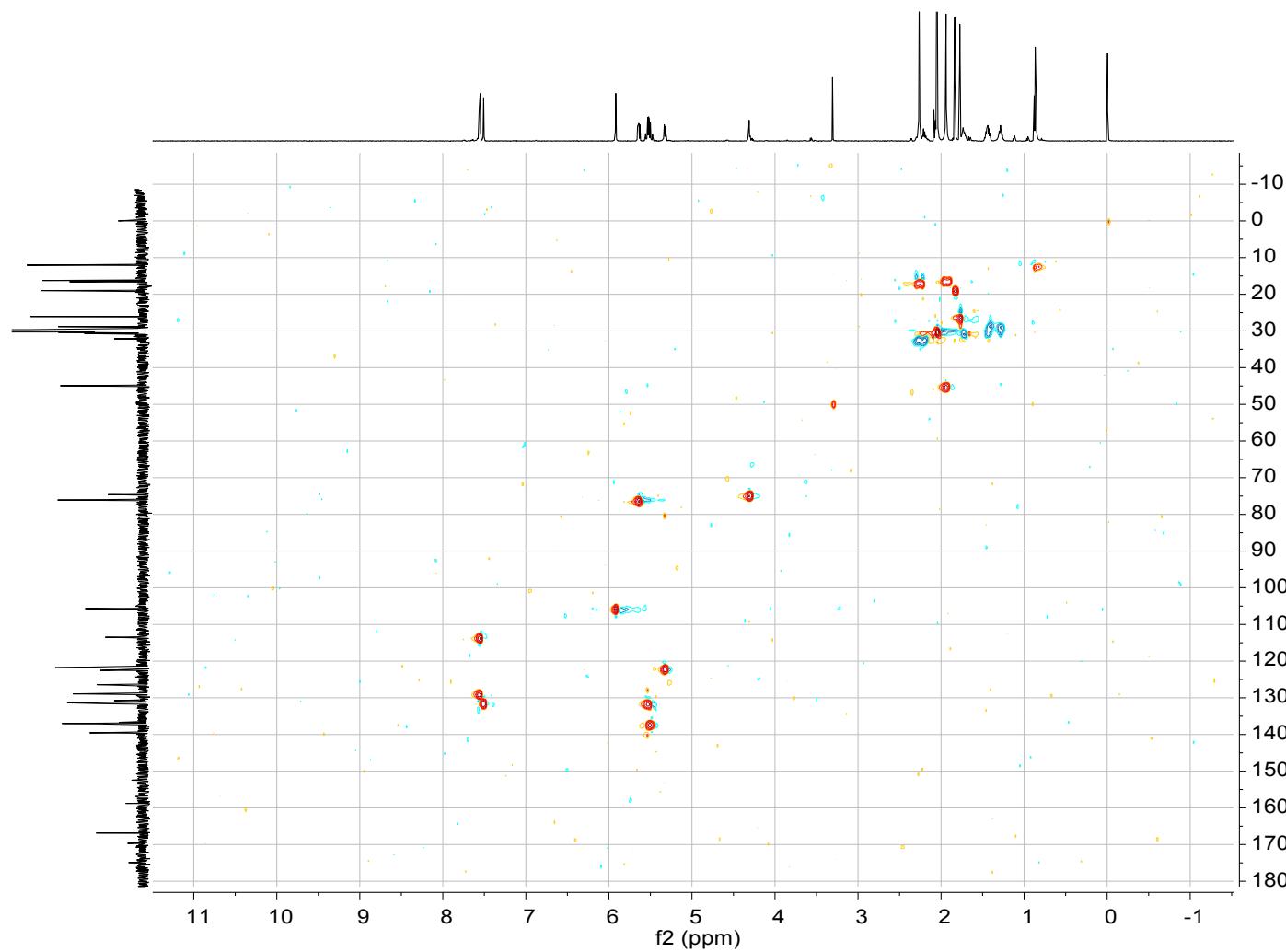


Figure S23. HSQC spectrum of **4**.

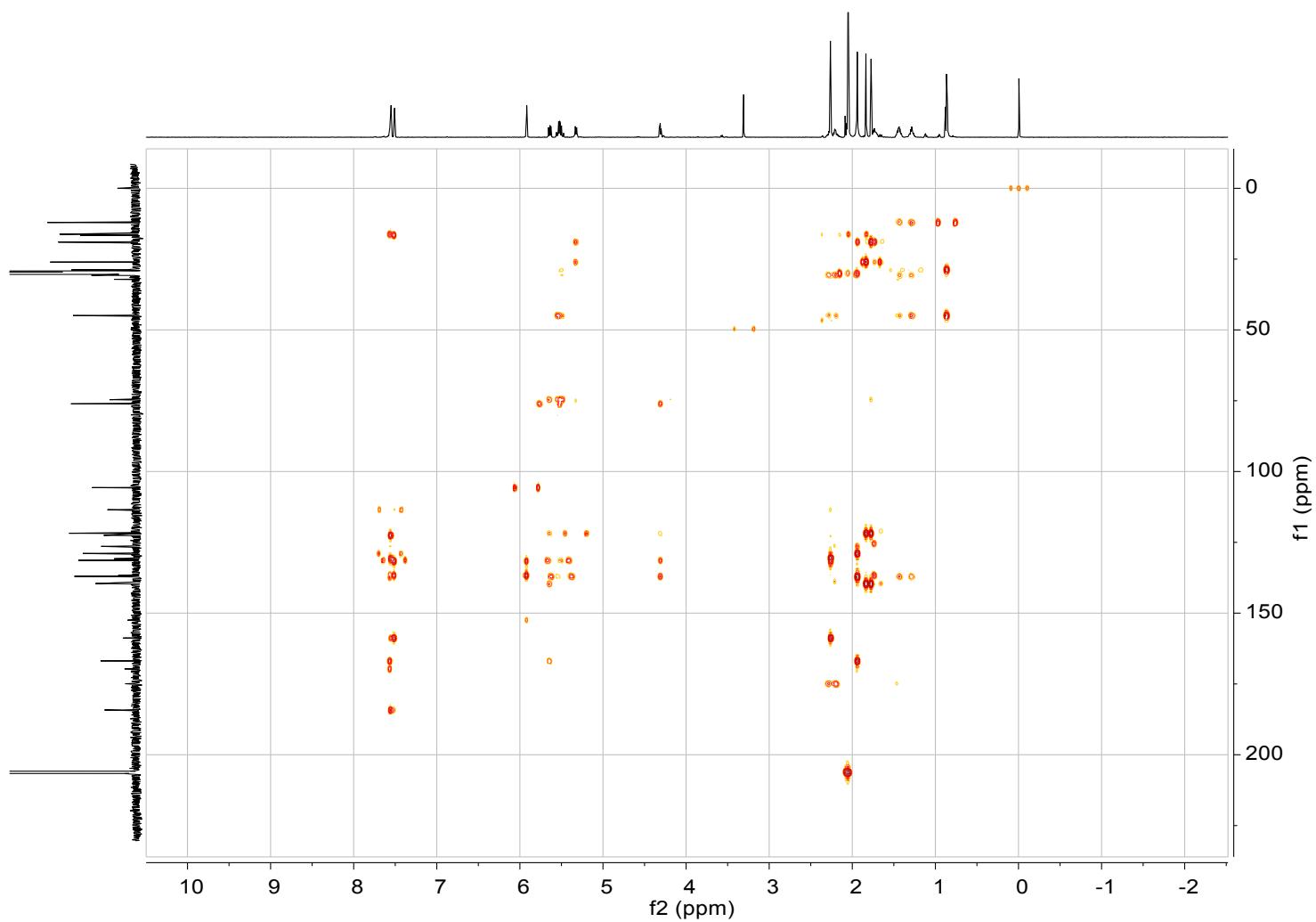


Figure S24. HMBC spectrum of 4.

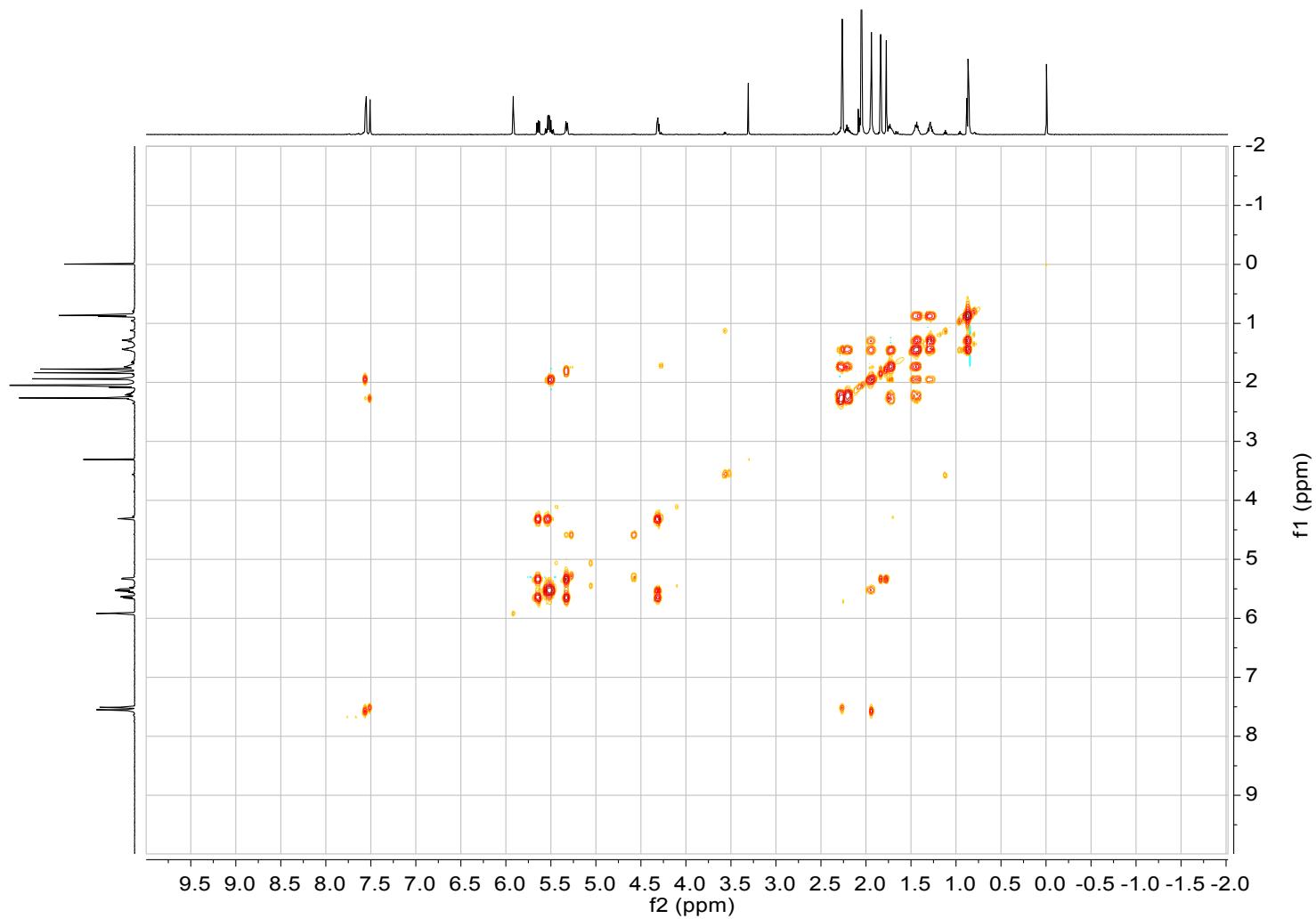


Figure S25. COSY spectrum for 4.

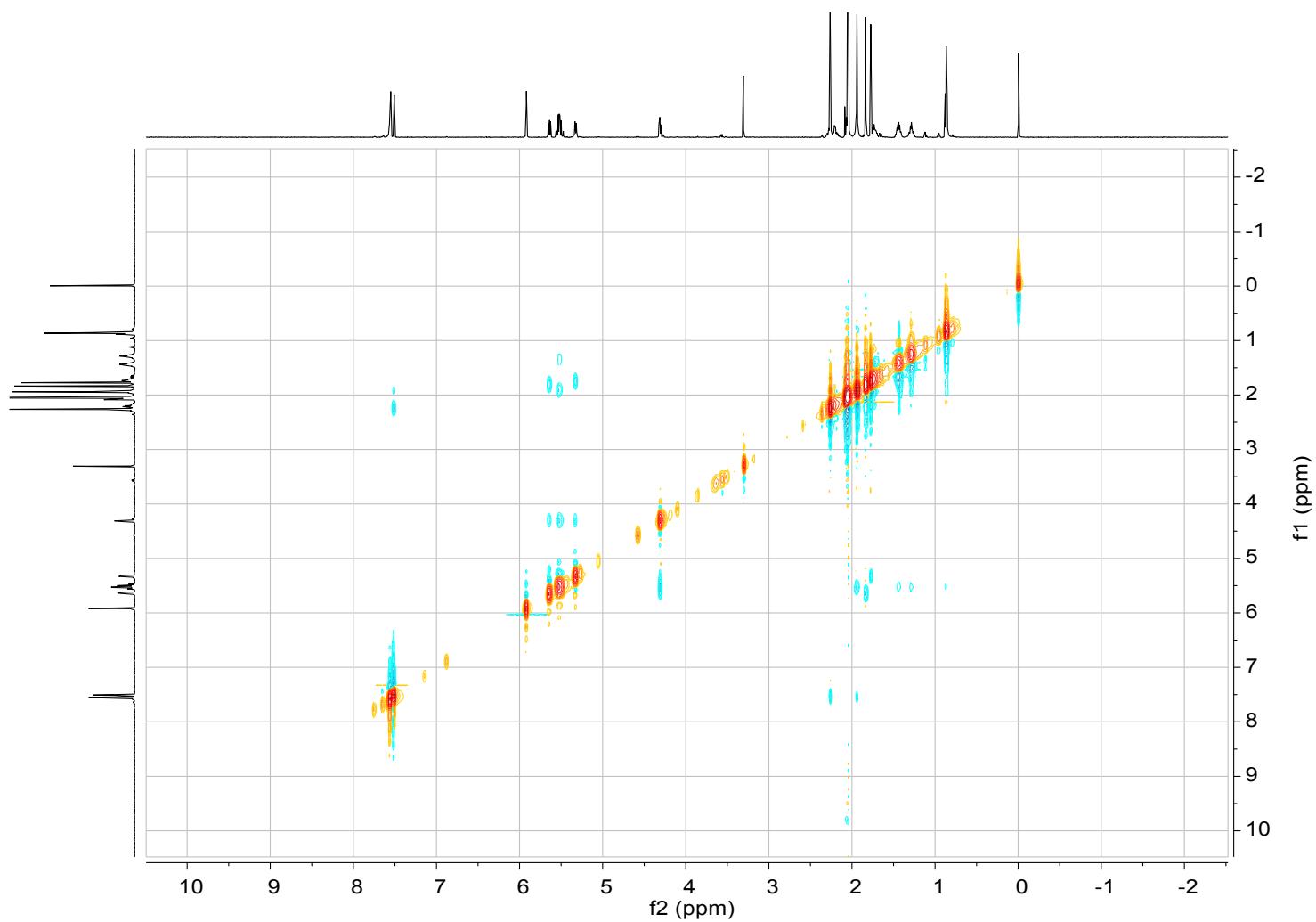


Figure S26. NOESY spectrum of 4.

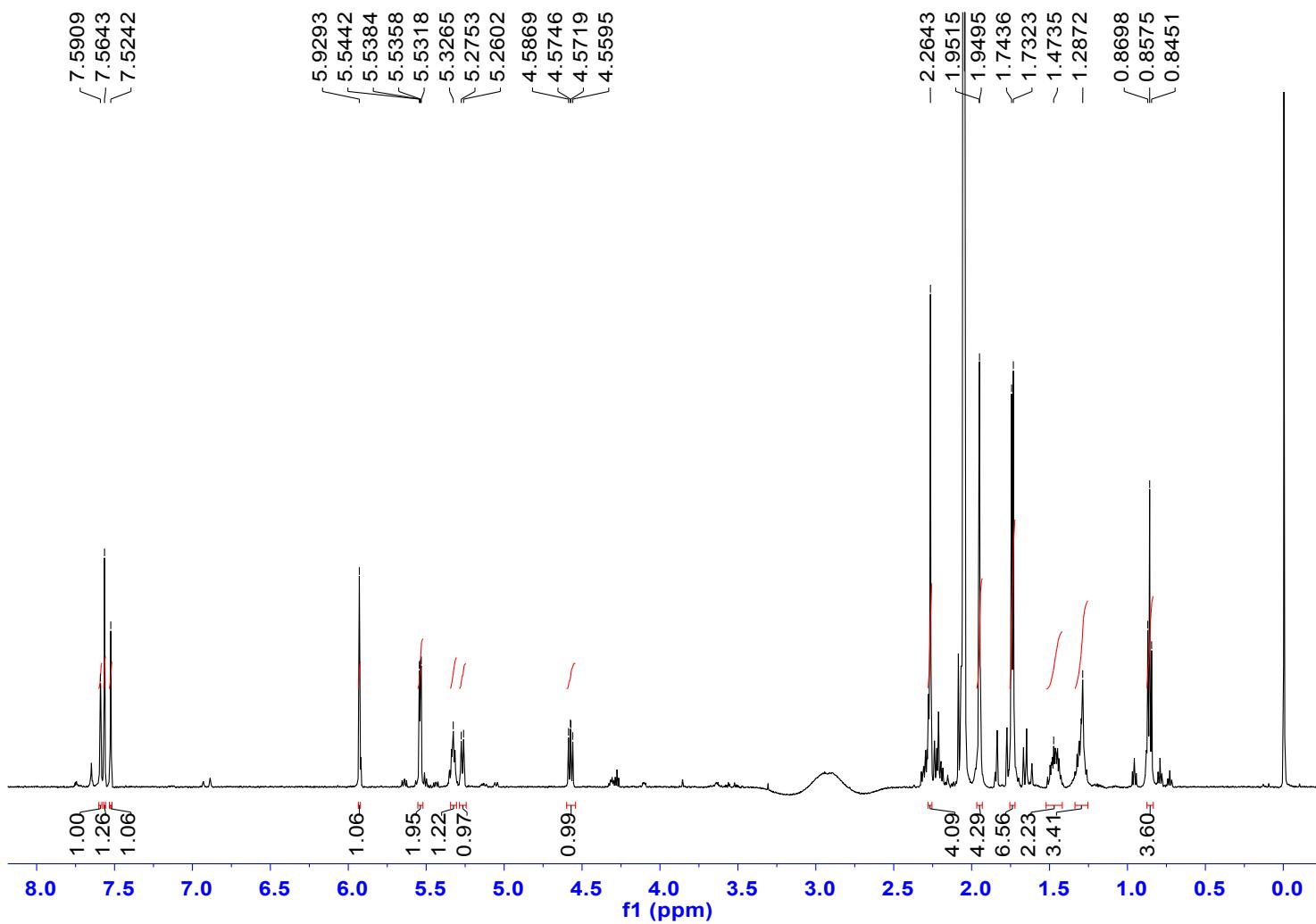


Figure S27. ¹H NMR spectrum of 5.

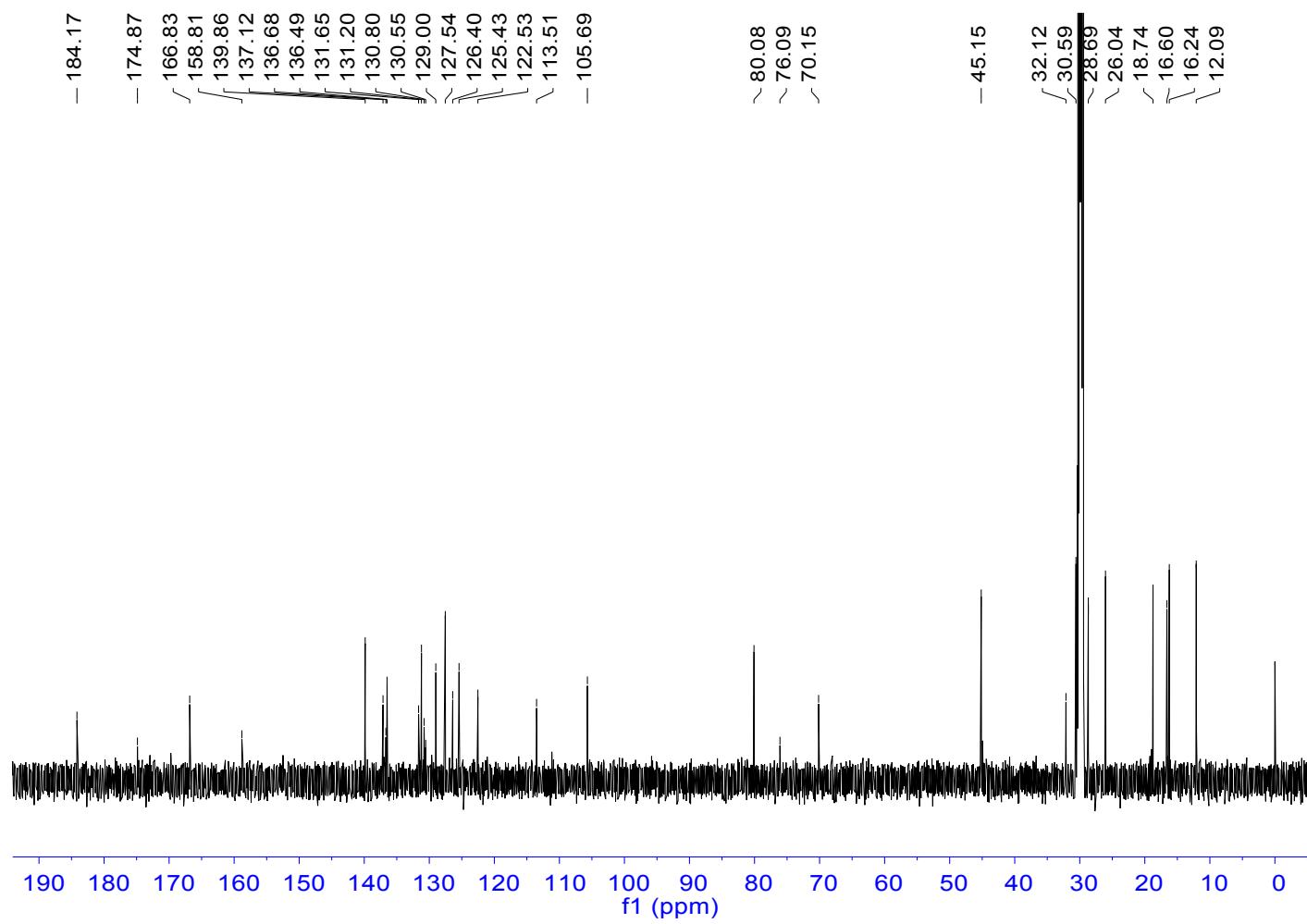


Figure S28. ^{13}C NMR spectrum of **5** (150 MHz).

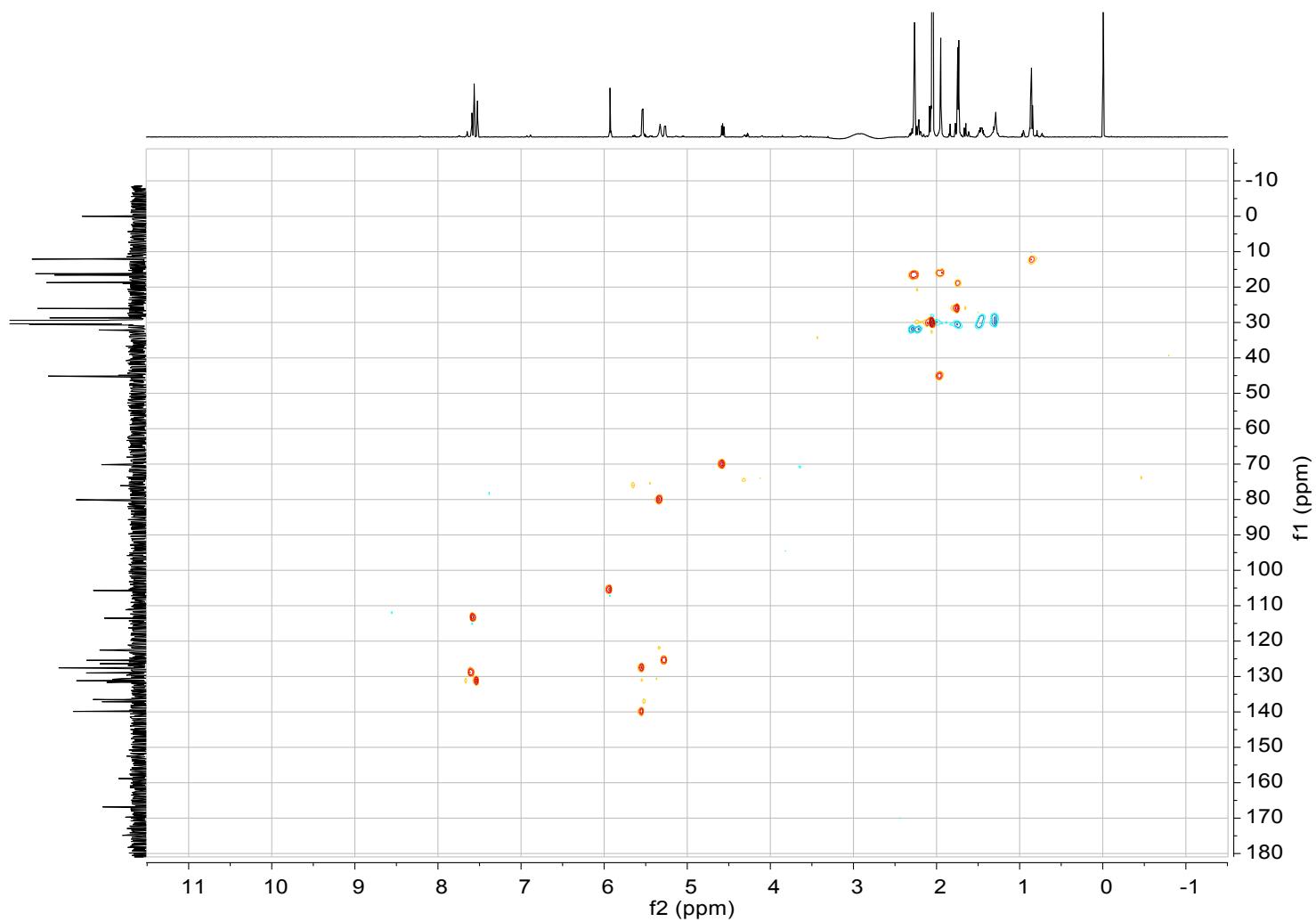


Figure S29. HSQC spectrum of 5.

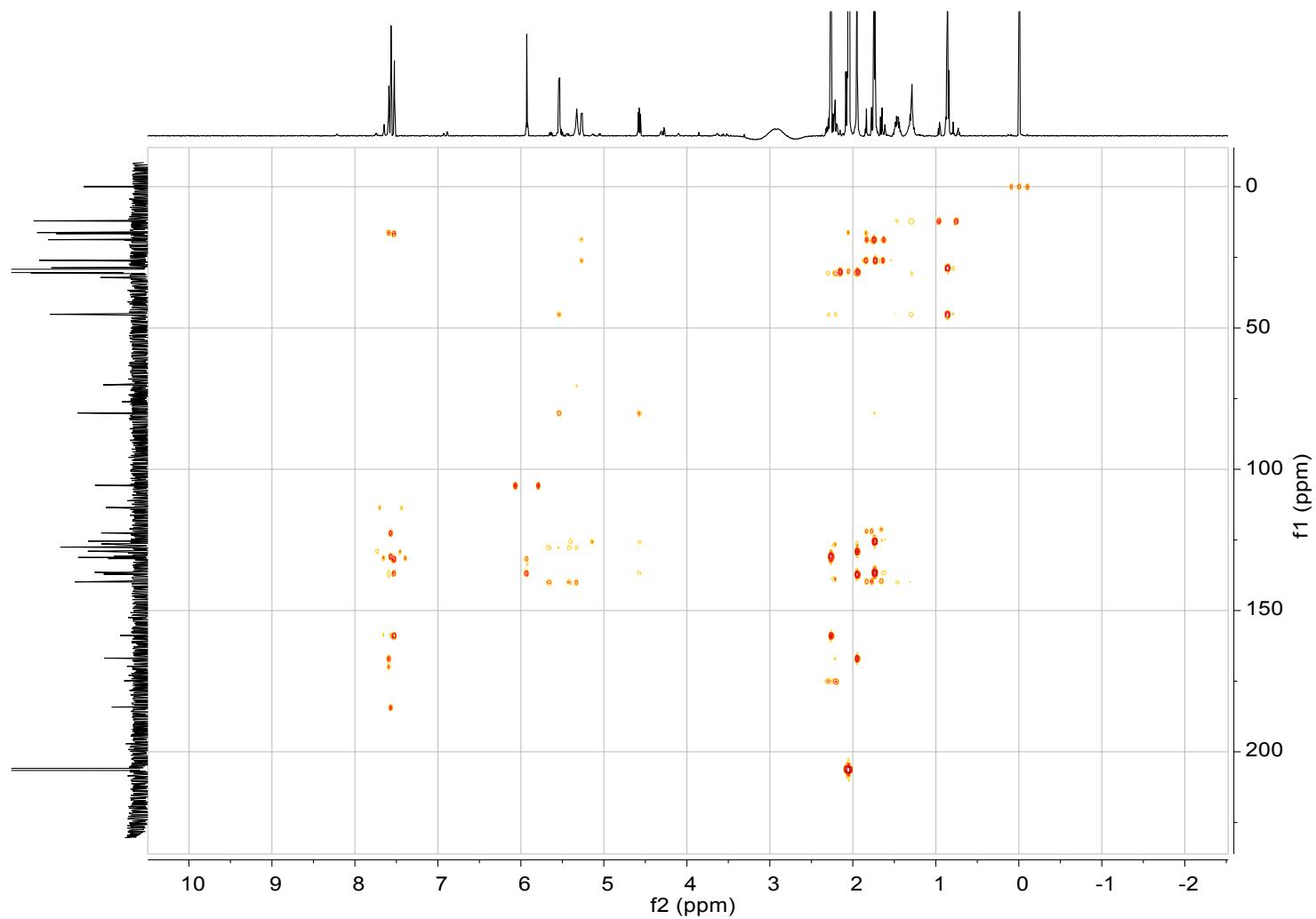


Figure S30. HMBC spectrum of 5.

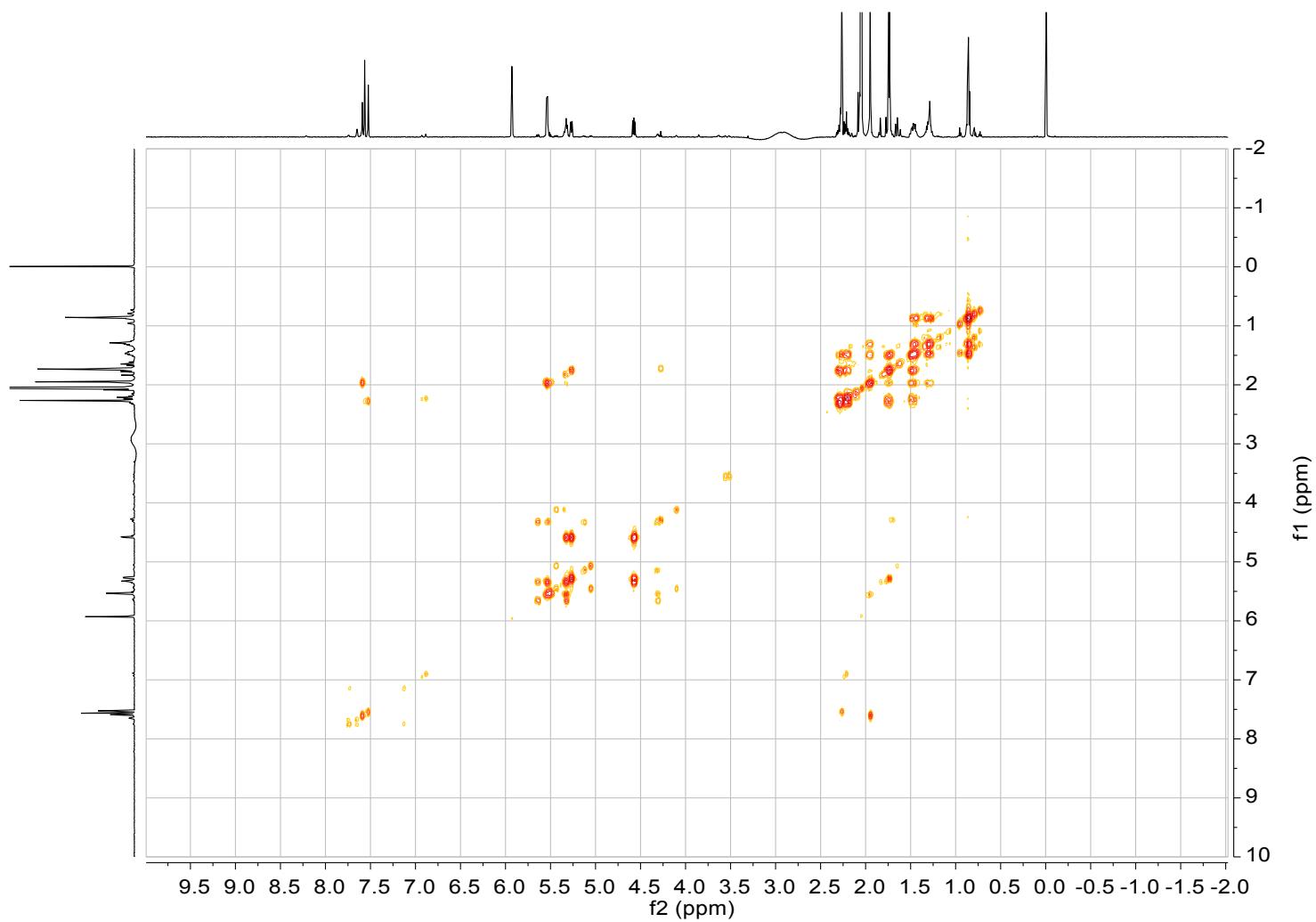


Figure S31. COSY spectrum of 5.

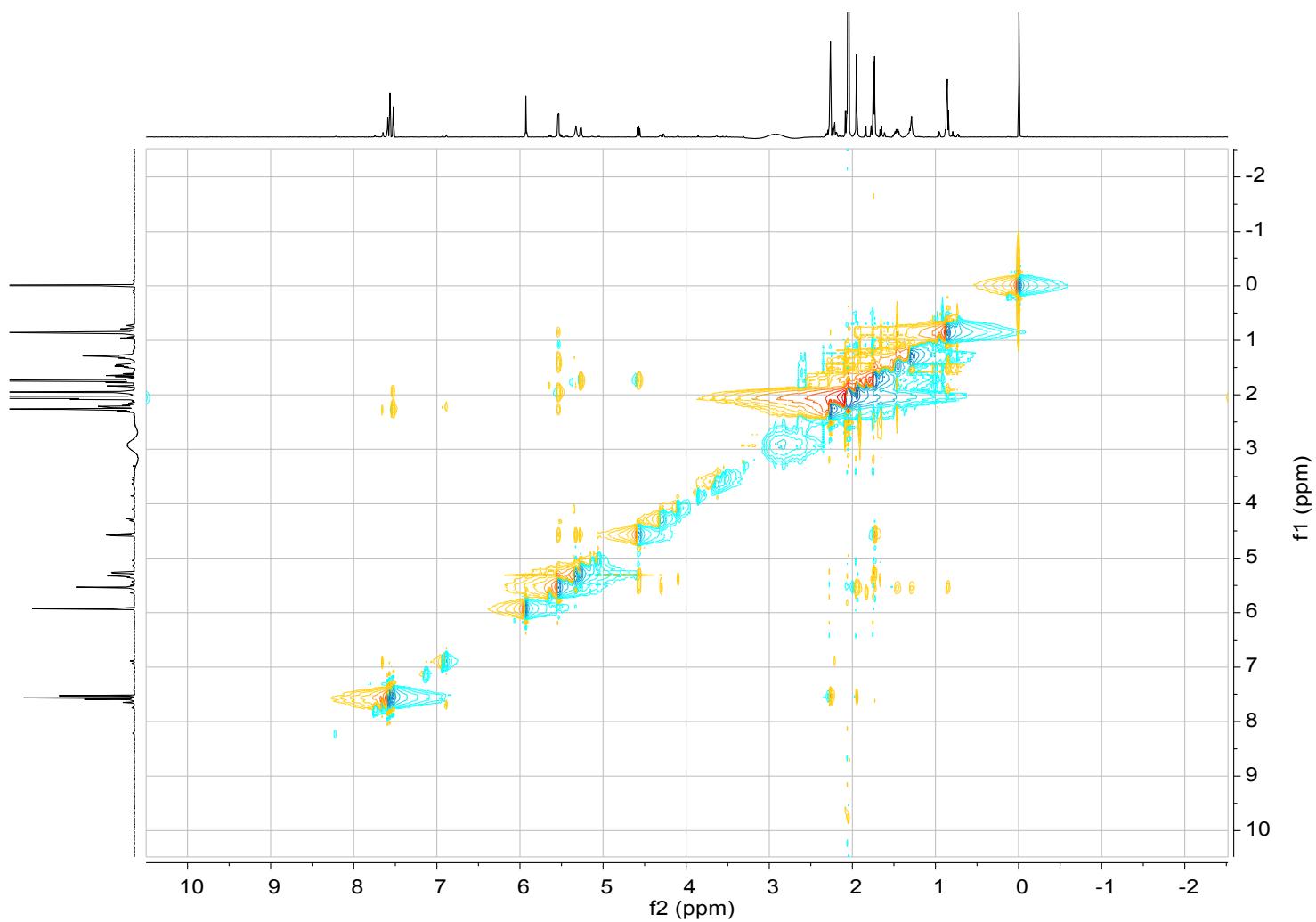


Figure S32. NOSEY spectrum of 5.

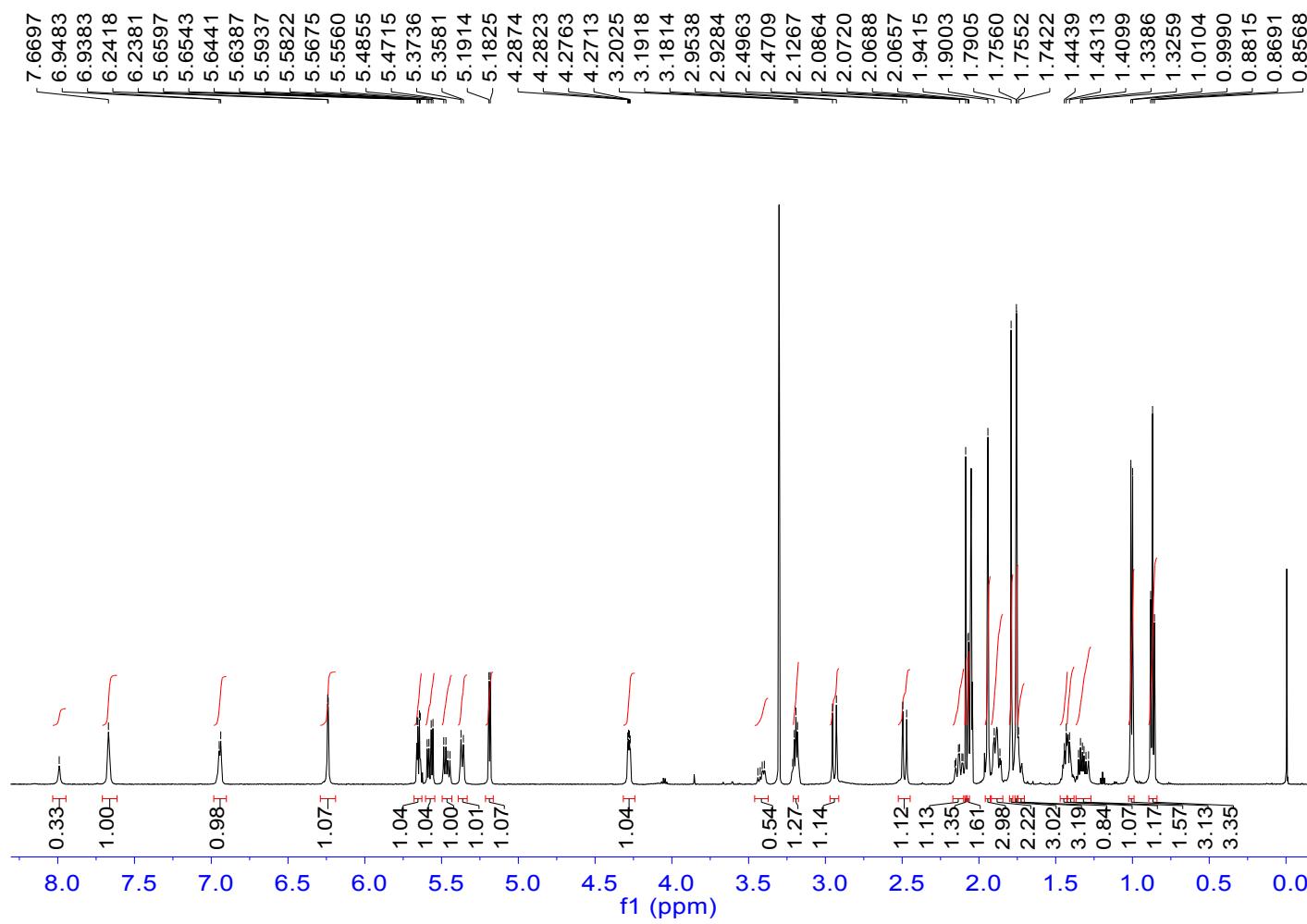


Figure S33. ^1H -NMR (600MHz, CD_3COCD_3) spectrum of 6

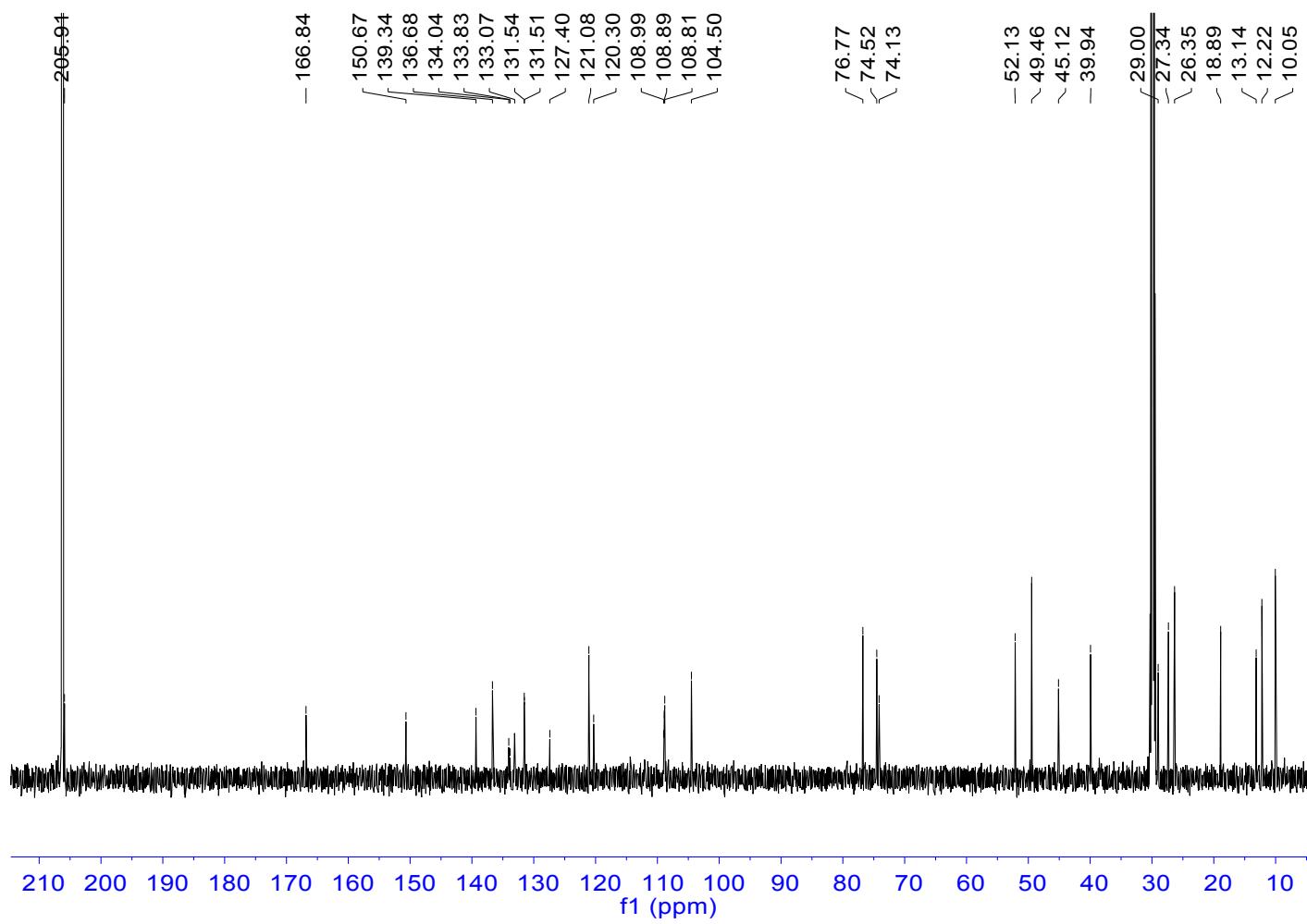


Figure S34. ^{13}C -NMR (150MHz, CD_3COCD_3) spectrum of **6**

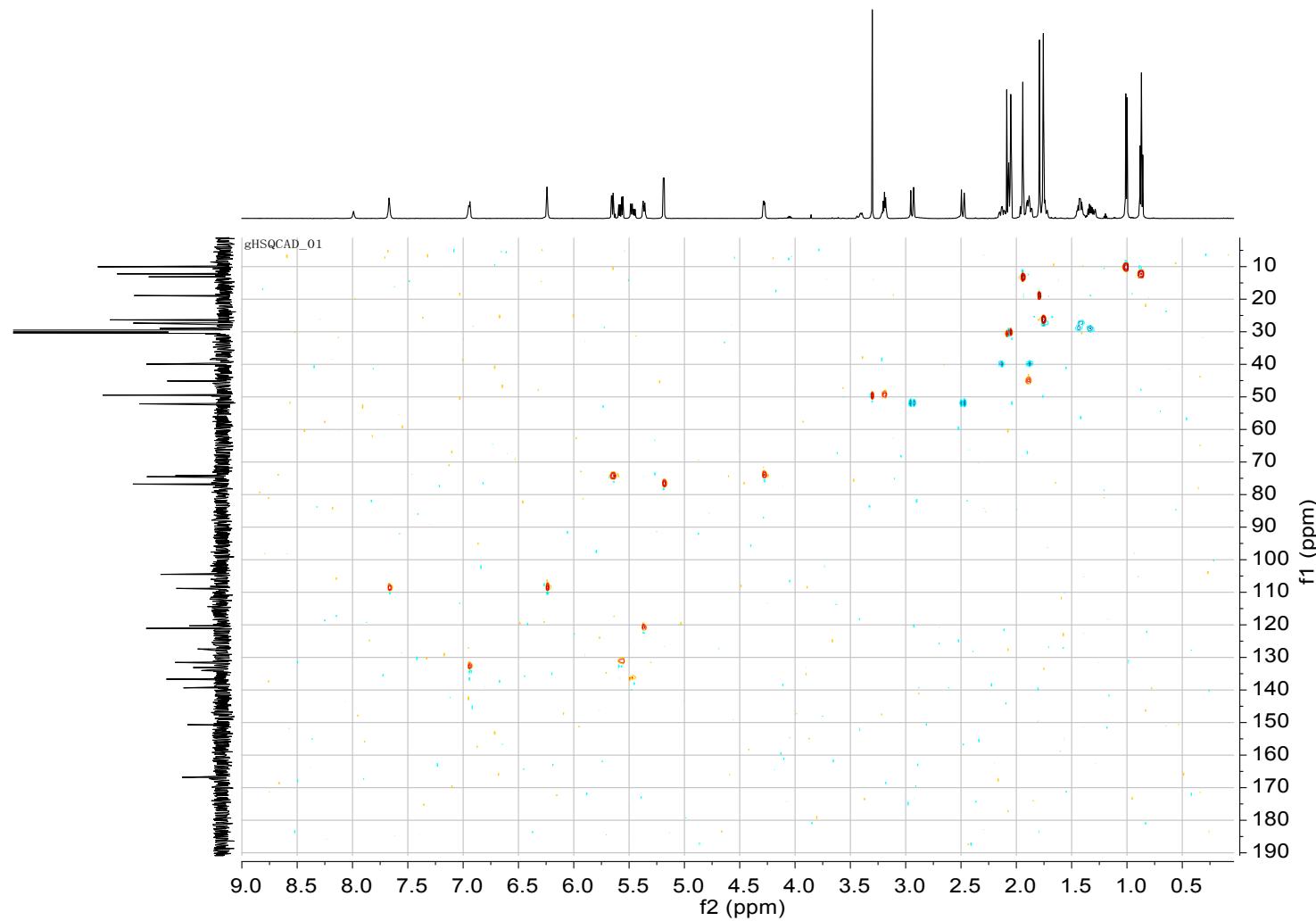


Figure S35. HSQC spectrum of 6

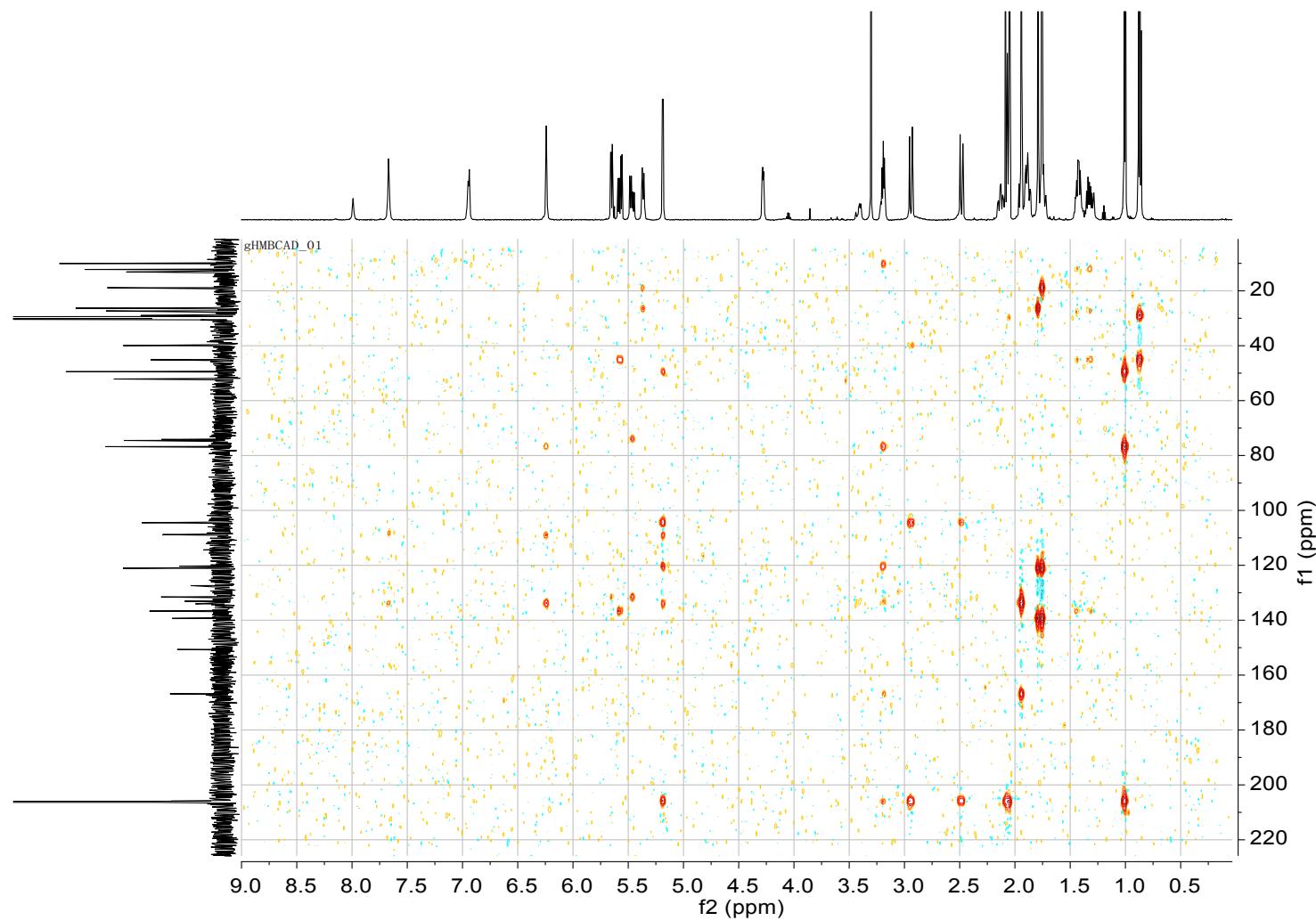


Figure S36. HMBC spectrum of **6**

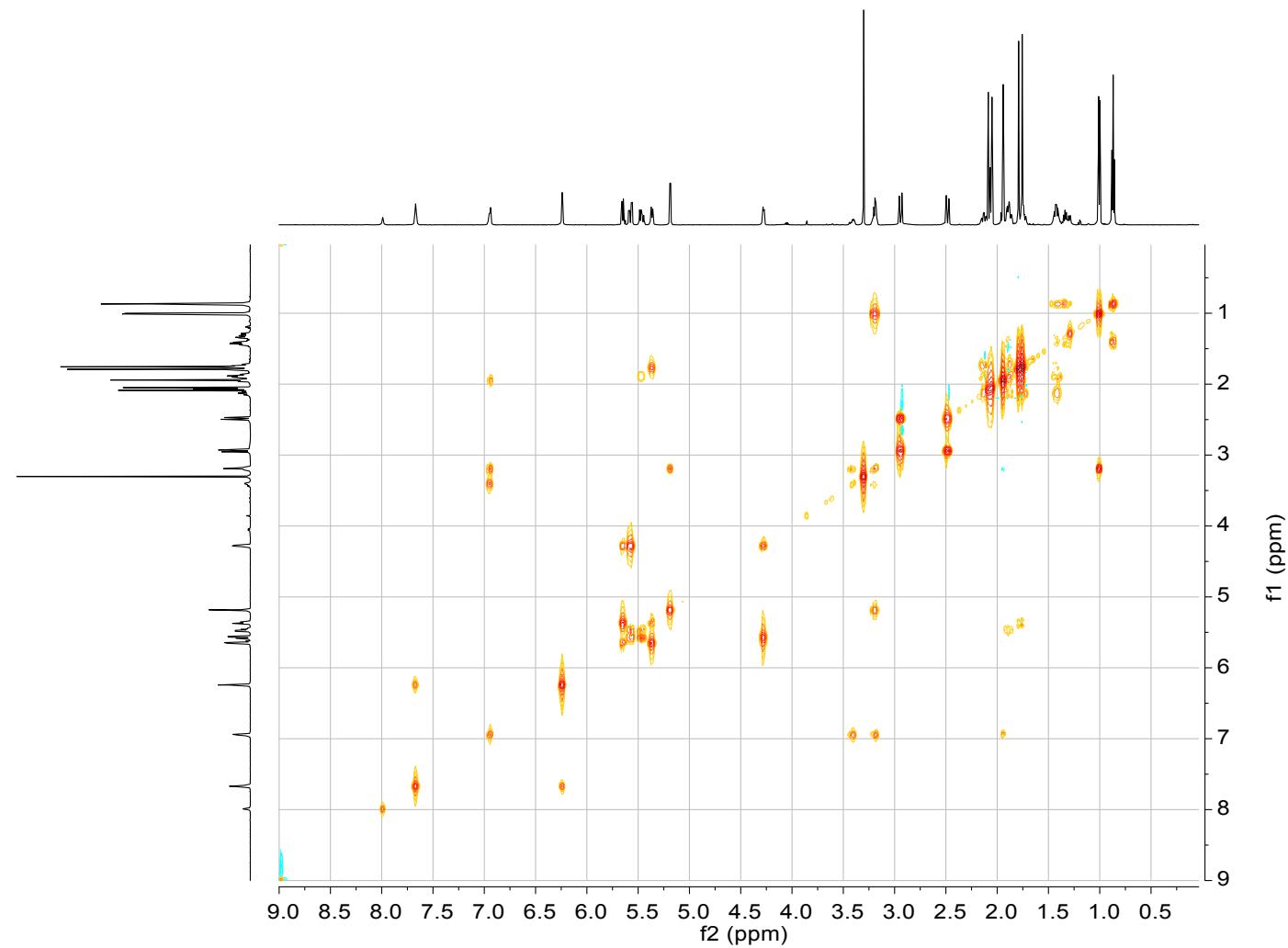


Figure S37. COSY spectrum of **6**

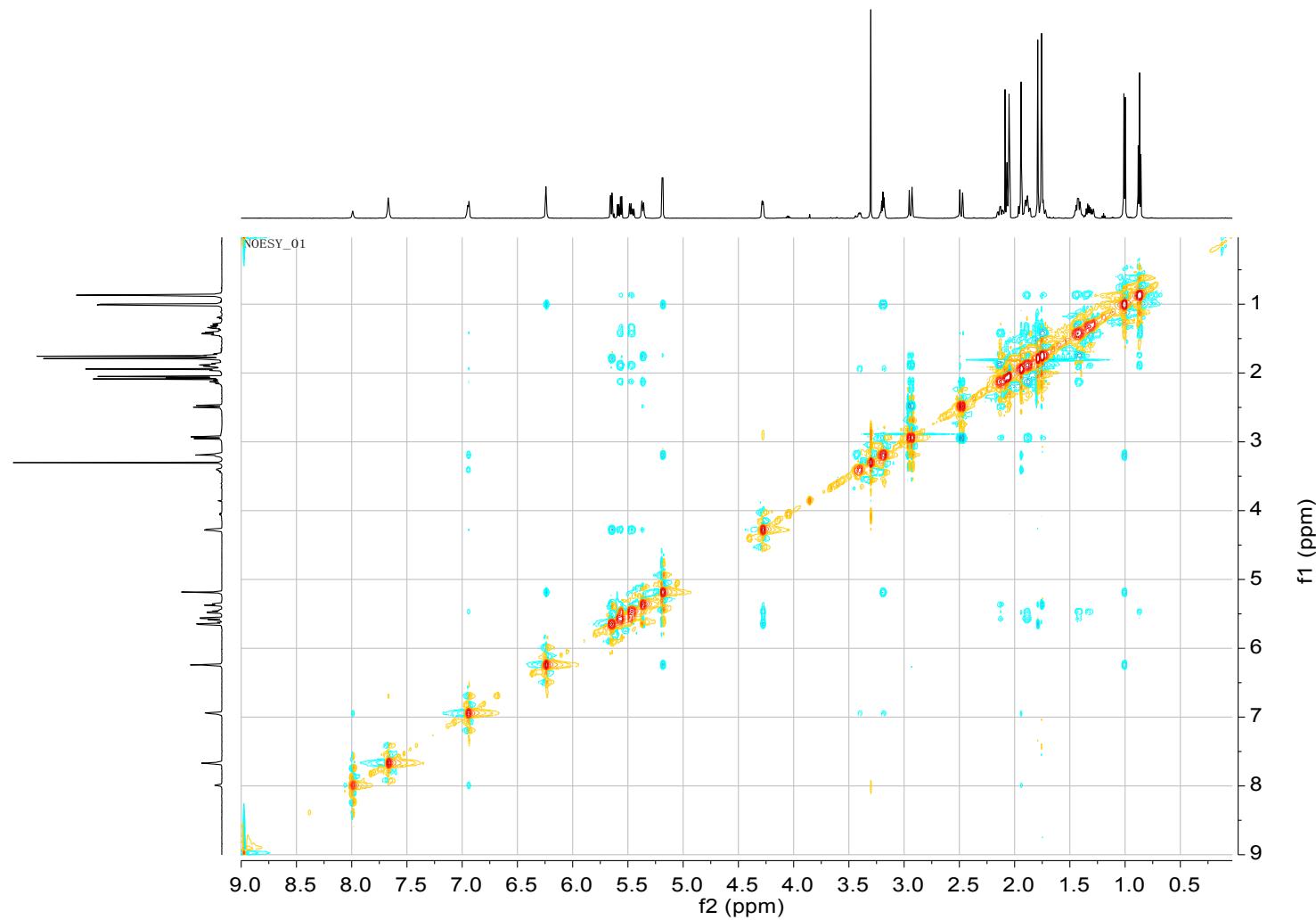


Figure S38. NOESY spectrum of 6

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3/13/2015 10:06:17 AM

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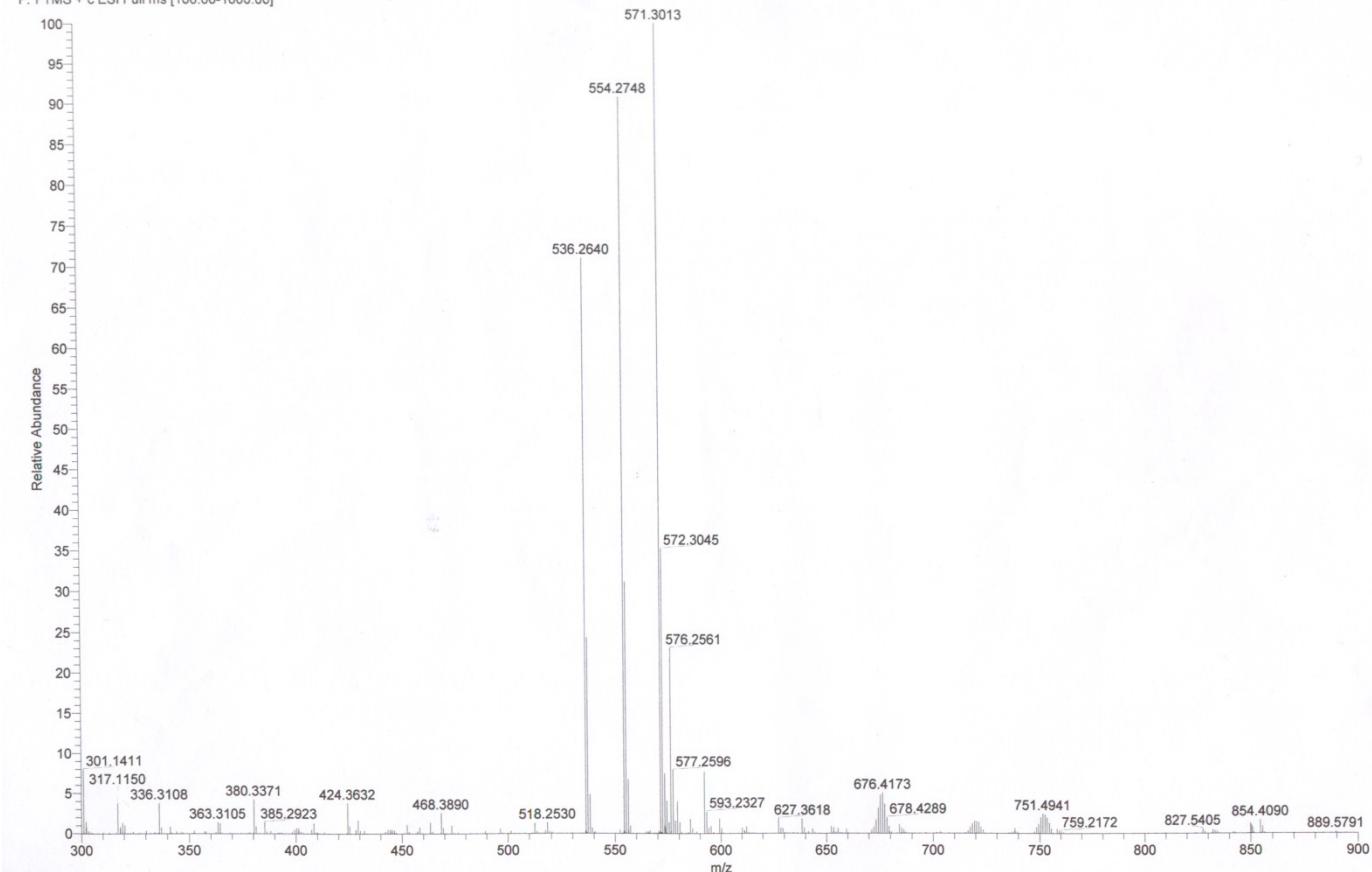


Figure S39. HRESIMS spectrum of **1**

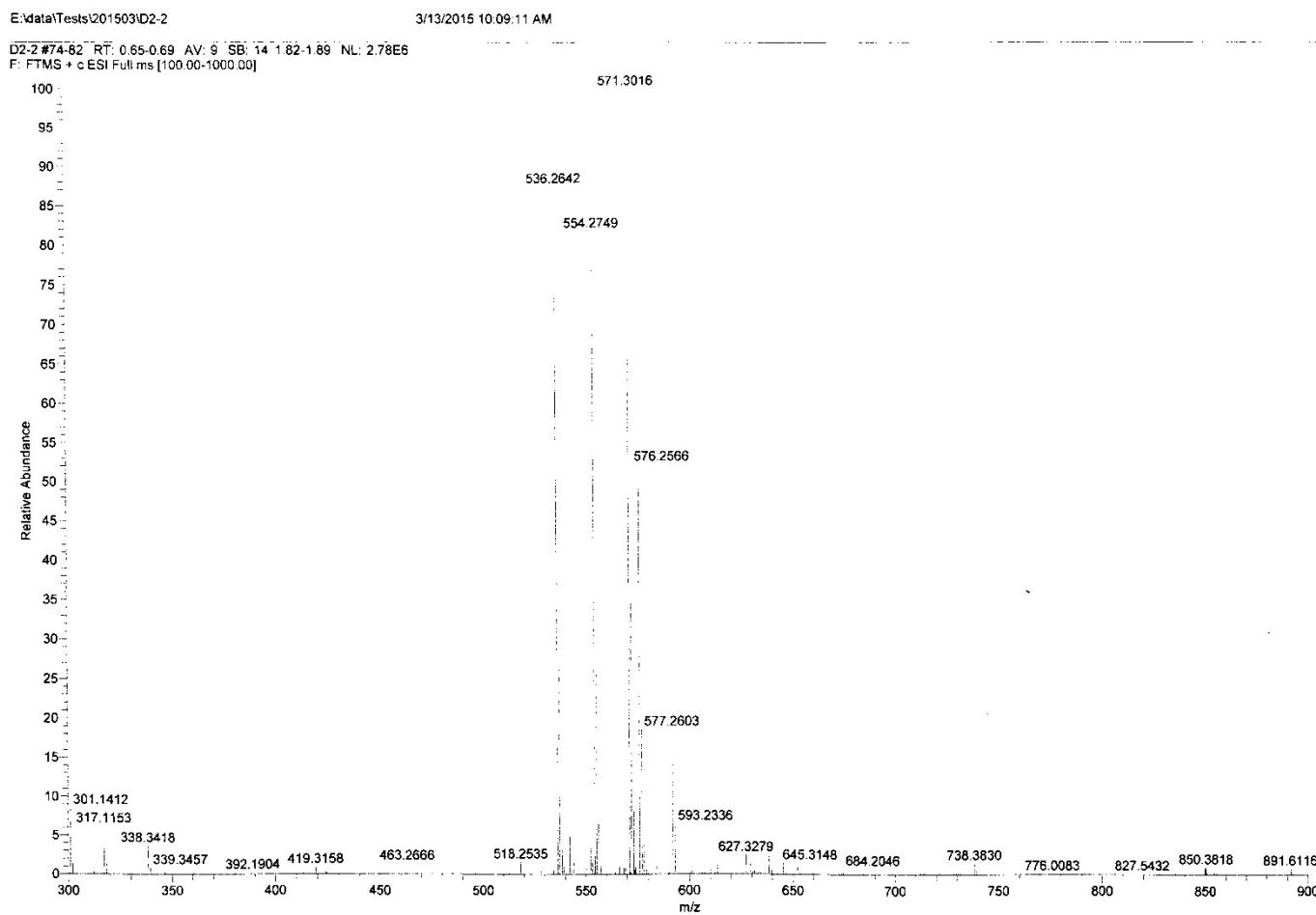


Figure S40. HRESIMS spectrum of **2**

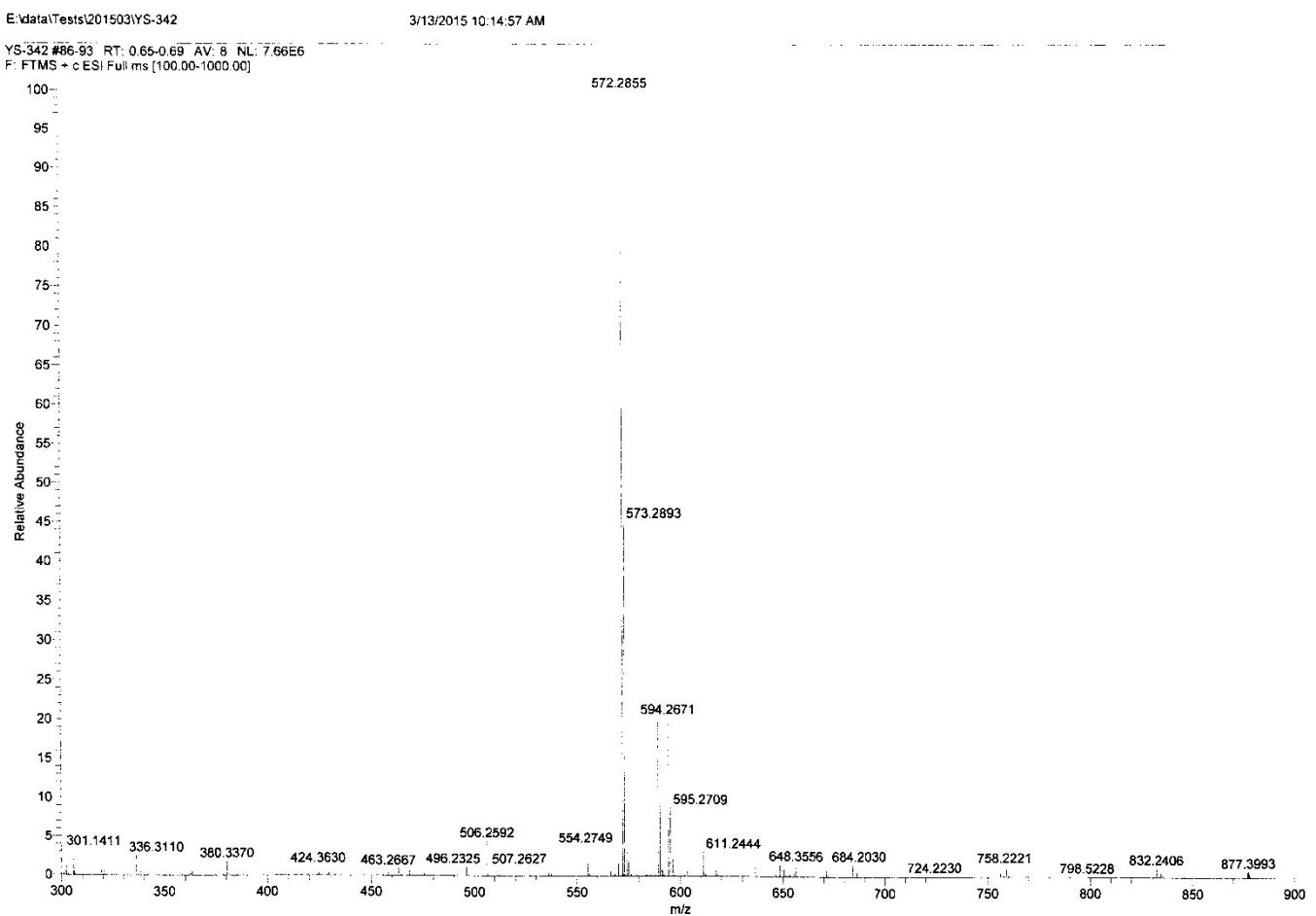


Figure S41. HRESIMS spectrum of **3**

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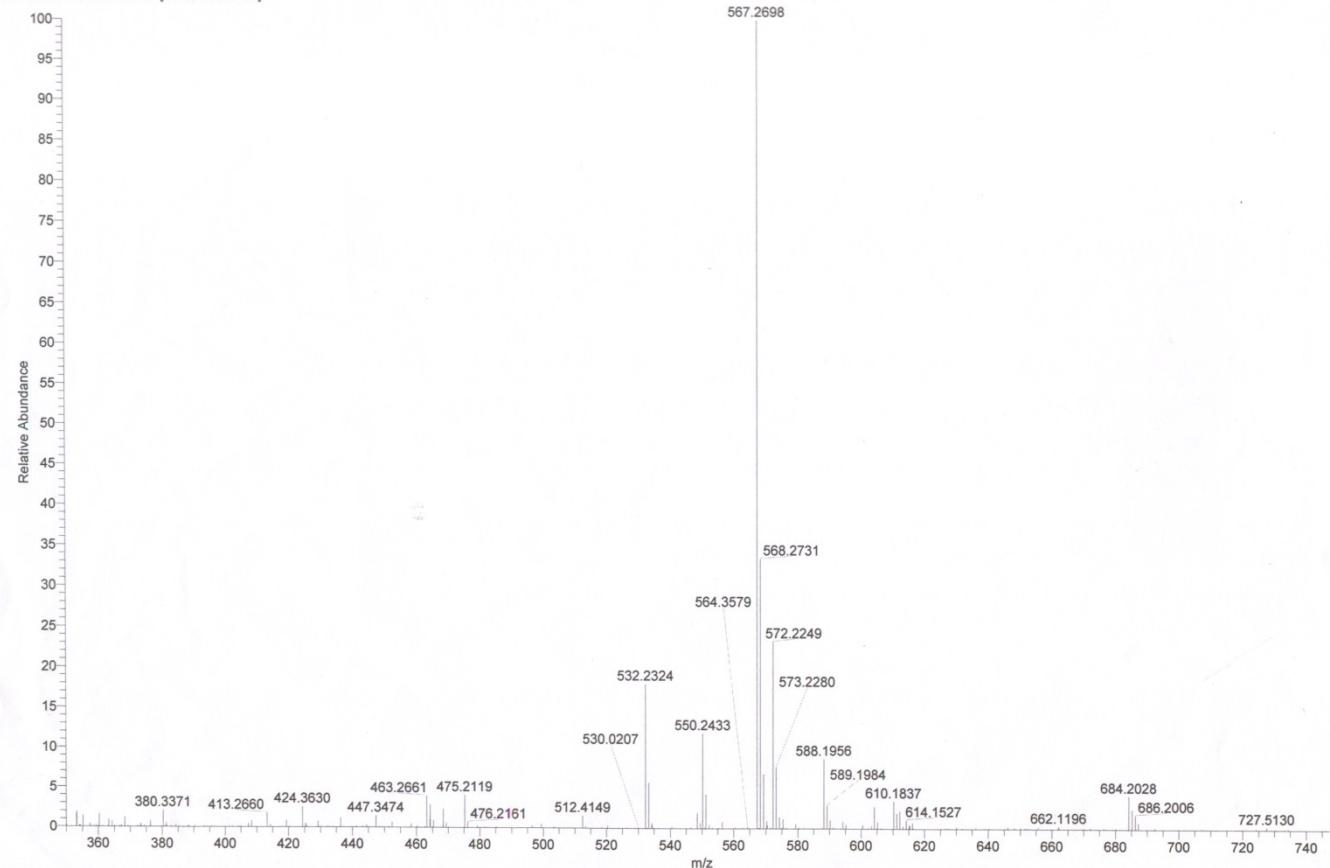


Figure S42. HRESIMS spectrum of **4**

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4/9/2014 3:49:03 PM

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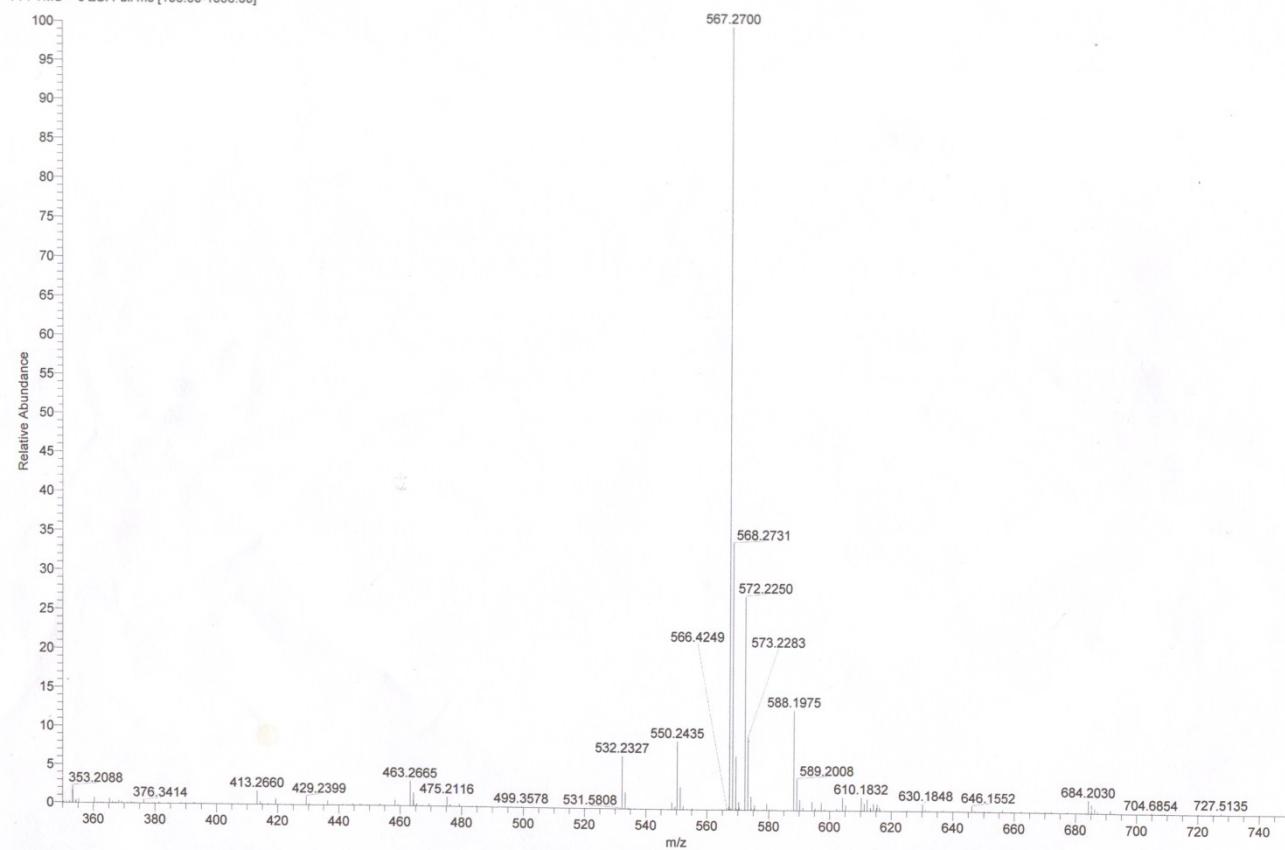


Figure S43. HRESIMS spectrum of 5