Supplementary Materials

A Modified ^{1}H-NMR Quantification Method of Ephedrine Alkaloids in Ephedrae Herba Samples

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† These authors contributed equally to this work.

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Figure S1. The ^{1}H-NMR spectra of ephedrine alkaloids extract of EP01, EP02, and EP03.

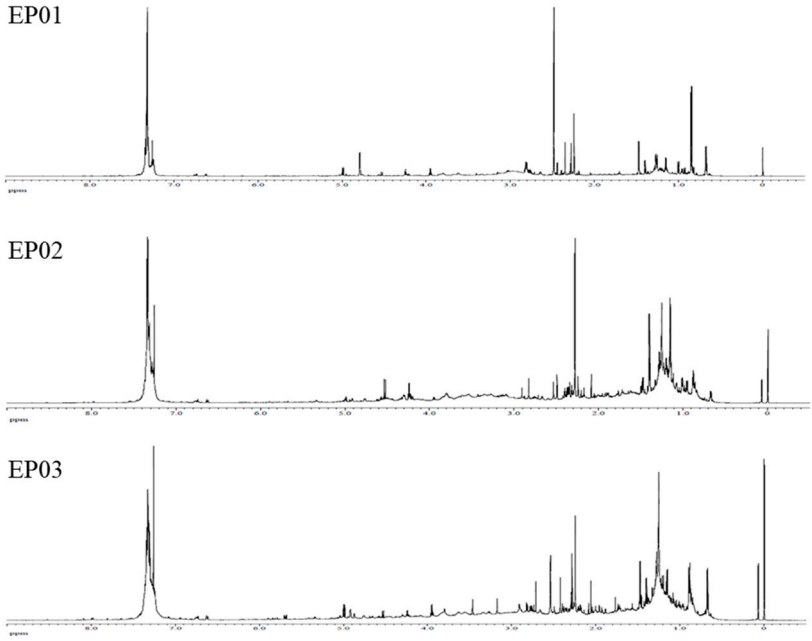


Figure S2. Ephedrine alkaloids and their cyclization products in EP01, EP02, and EP03.

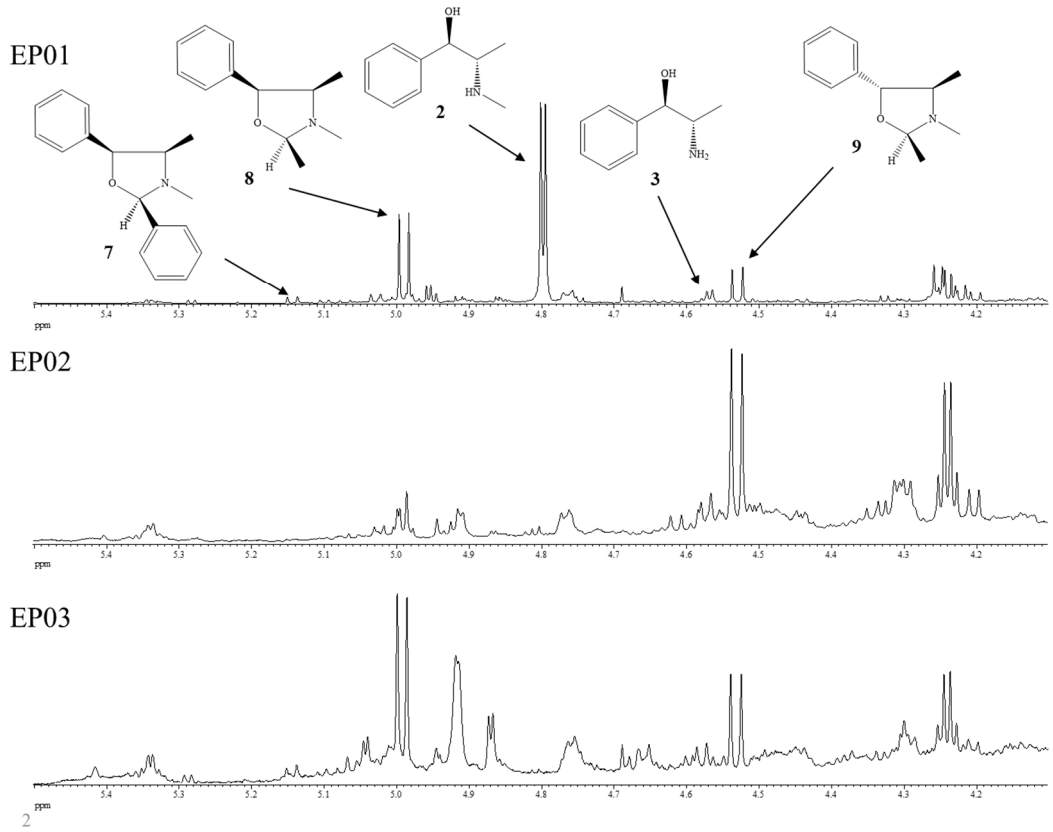
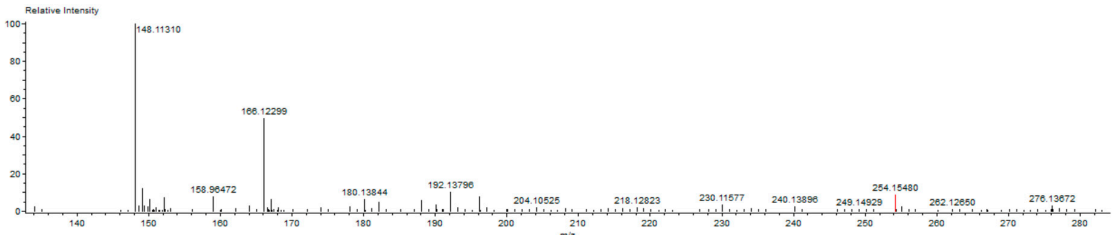


Figure S3. ESI-TOF-MS of compound **7**.



Mass	Intensity	Calc. Mass	Mass Difference [mDa]	Mass Difference [ppm]	Possible Formula	Unsaturation Number
254.15480	17467.03	254.15449	0.31	1.23	12C17 1H20 14N 16O	8.5

Figure S4. ^{1}H-NMR of compound **7**.

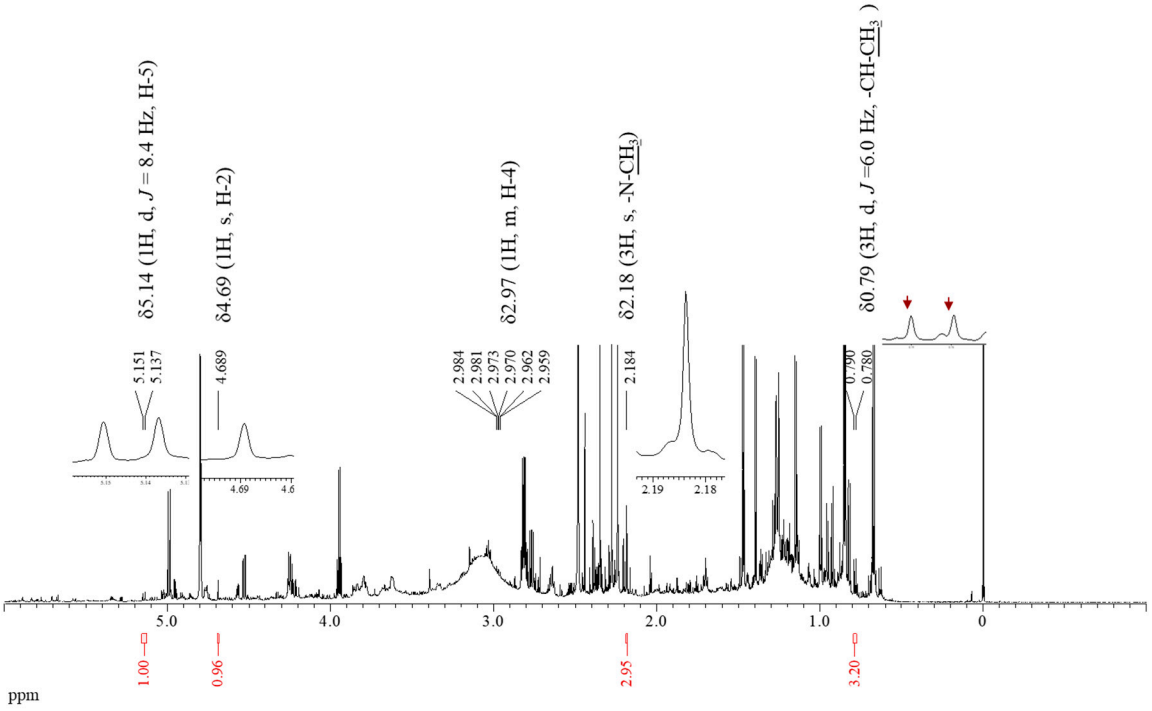


Figure S5. Characteritic carbon signals of compound **7**.

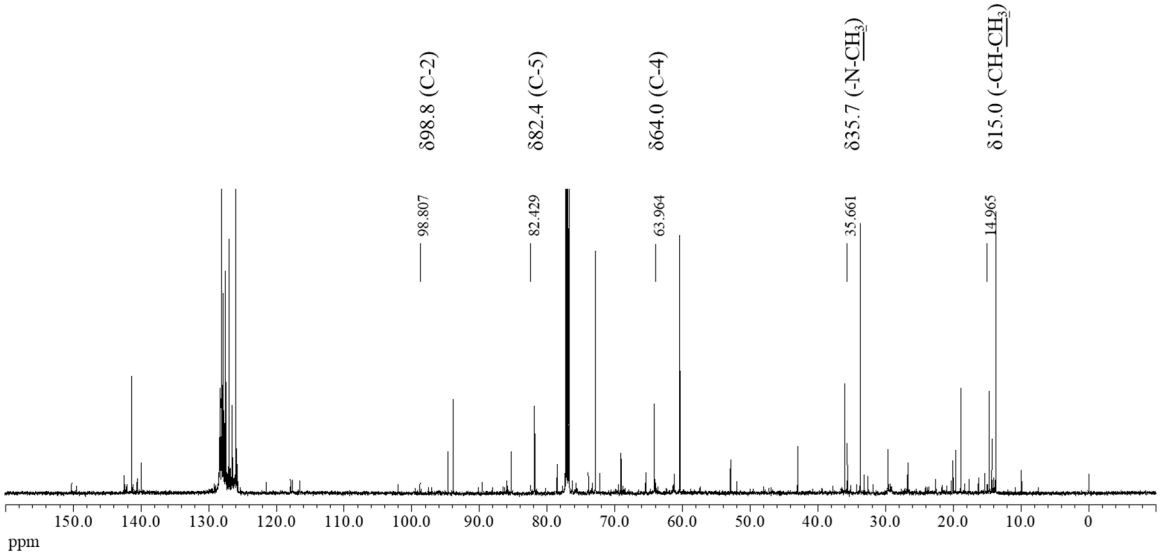


Figure S6. HMBC of compound **7**.

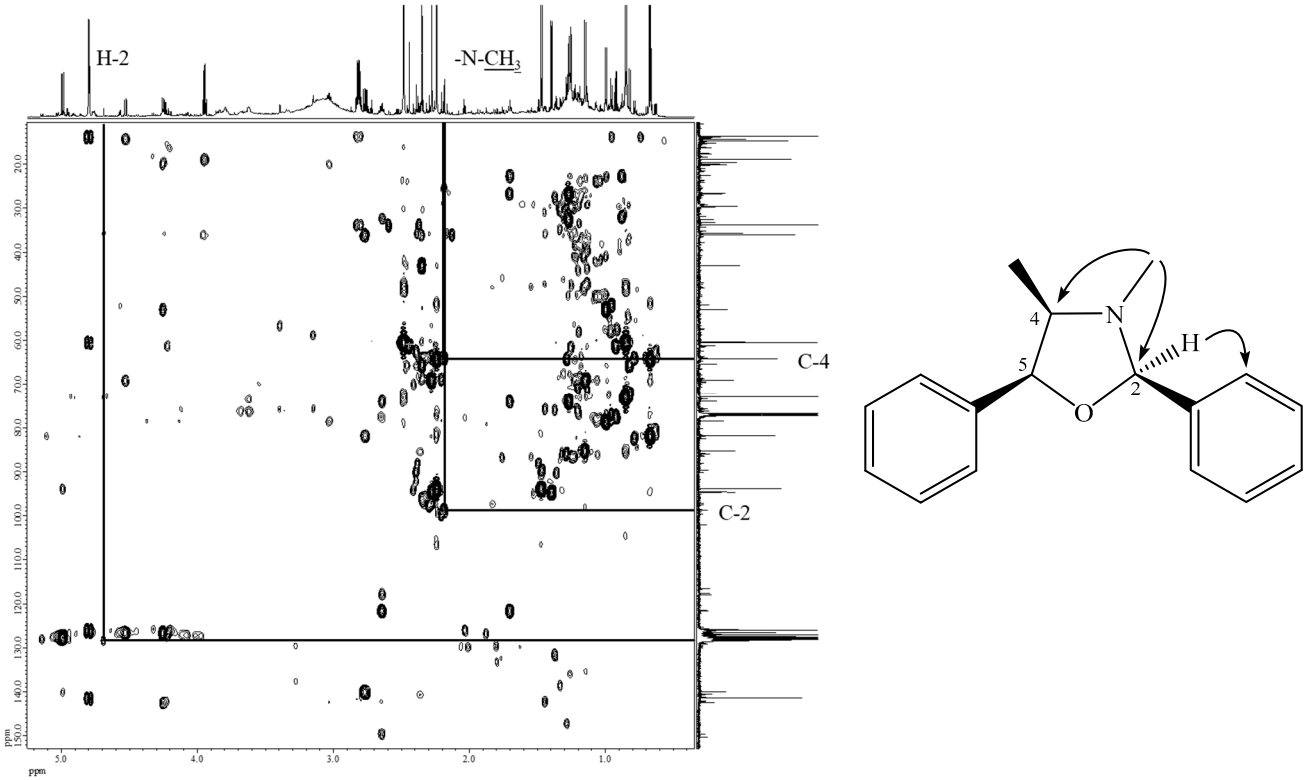
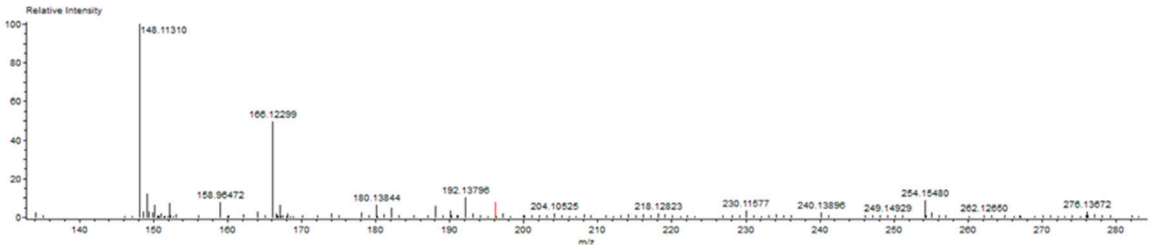


Figure S7. ESI-TOF-MS of compound **8**.



Mass	Intensity	Calc. Mass	Mass Difference [mDa]	Mass Difference [ppm]	Possible Formula	Unsaturation Number
192.13796	20013.41	192.13884	-0.88	-4.55	12C12 1H18 14N 16O	4.5

Figure S8. ^{1}H-NMR of compound **8**.

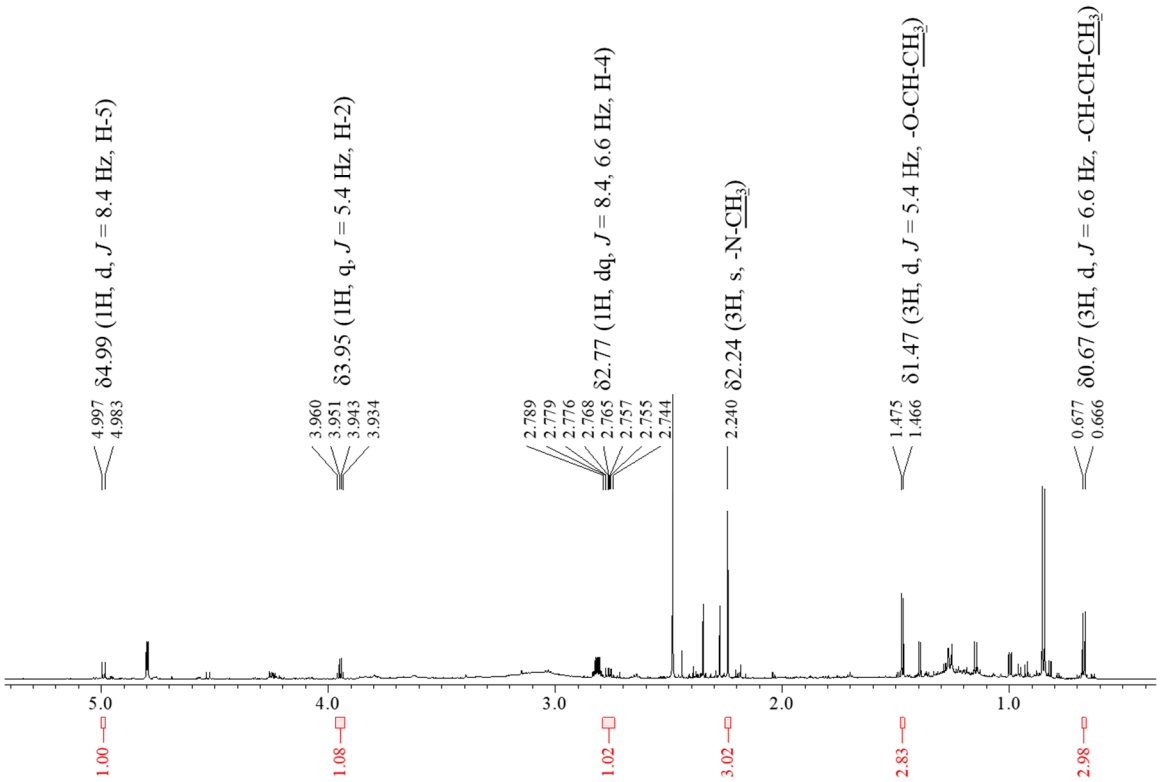


Figure S9. Characteritic carbon signals of compound **8**.

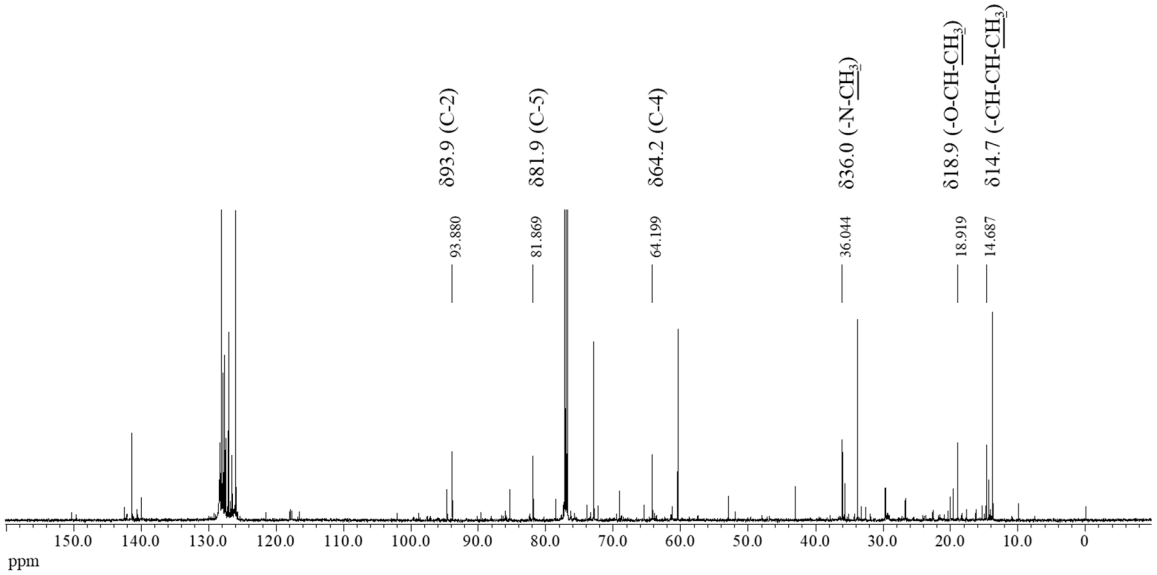
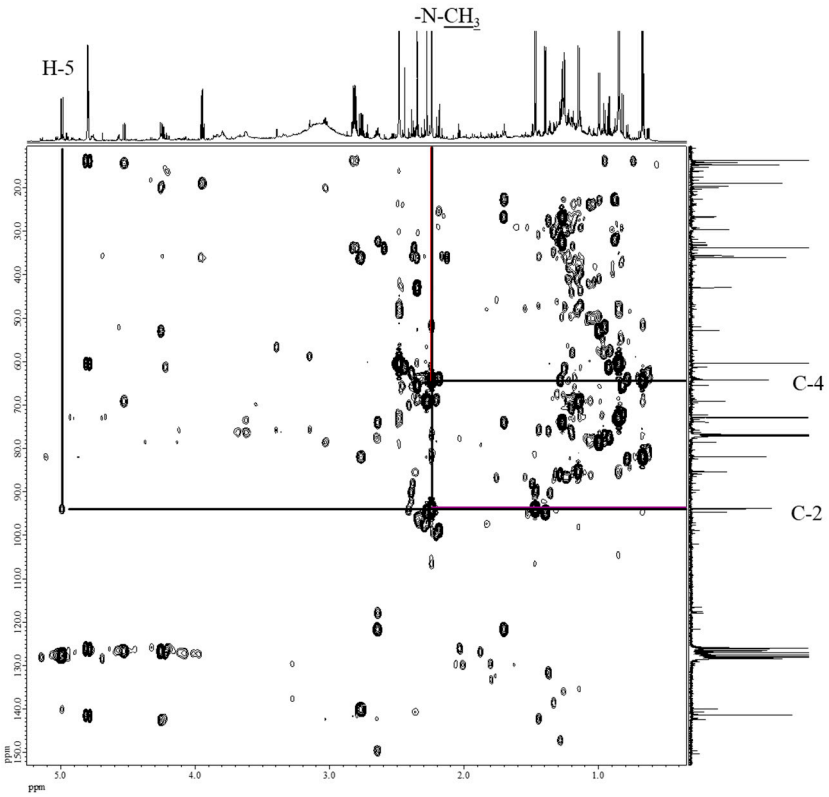
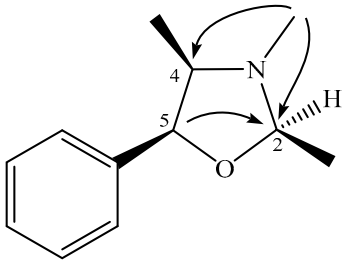


Figure S10. HMBC of compound **8**.





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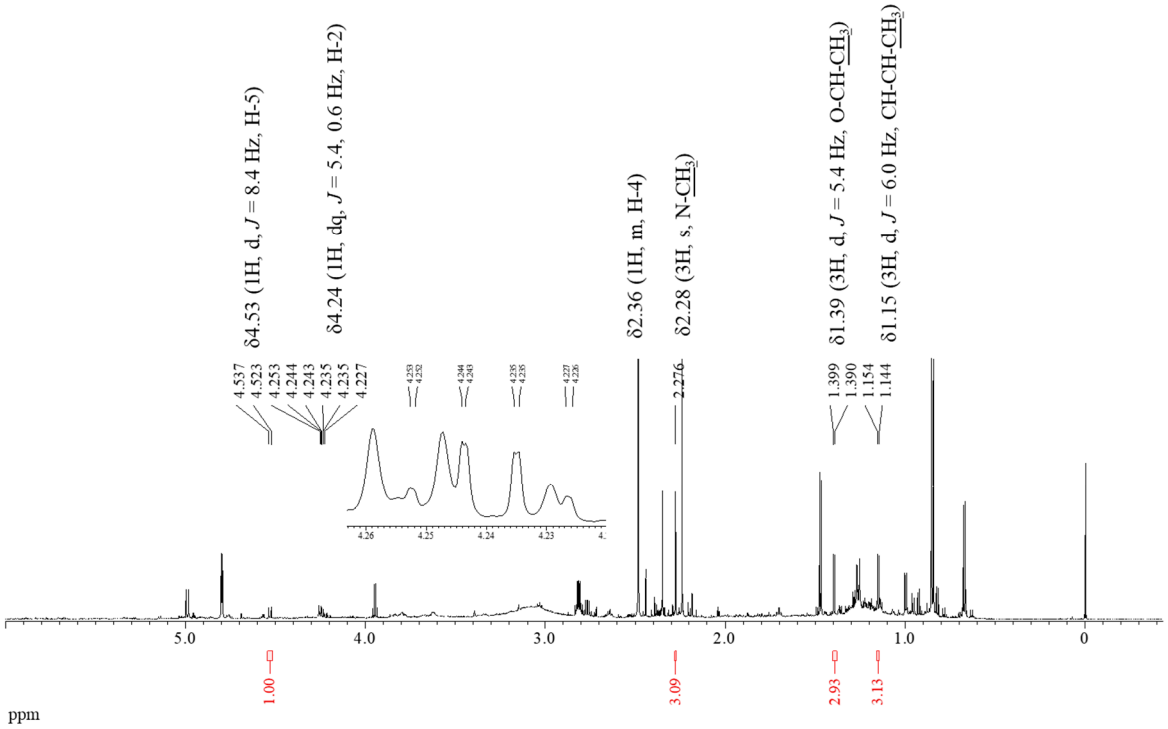


Figure S12. Characteritic carbon signals of compound **9**.

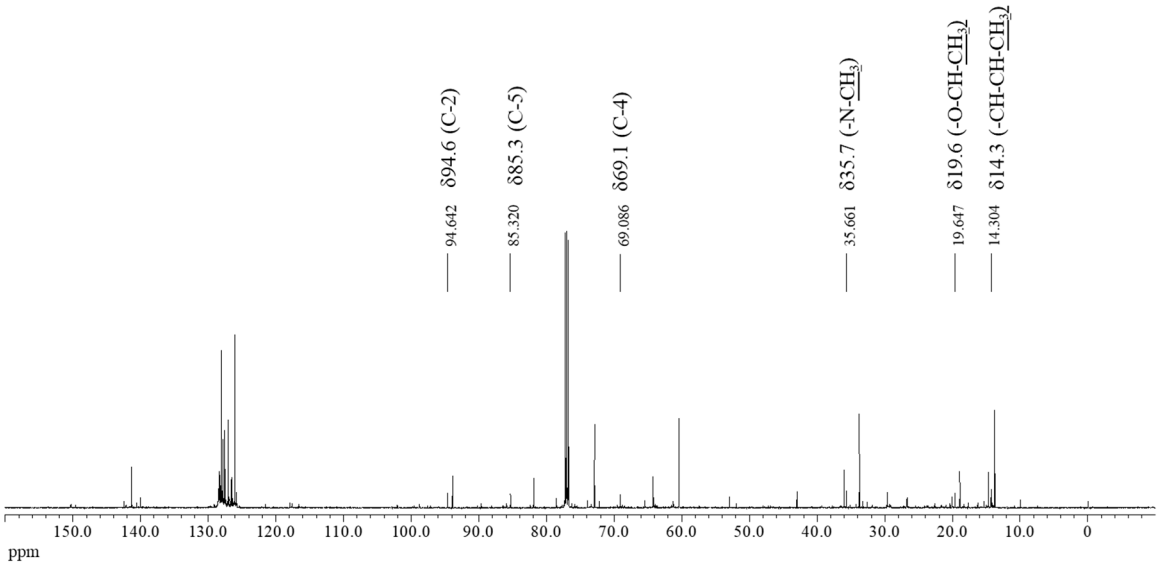


Figure S13. HMBC of compound **9**.

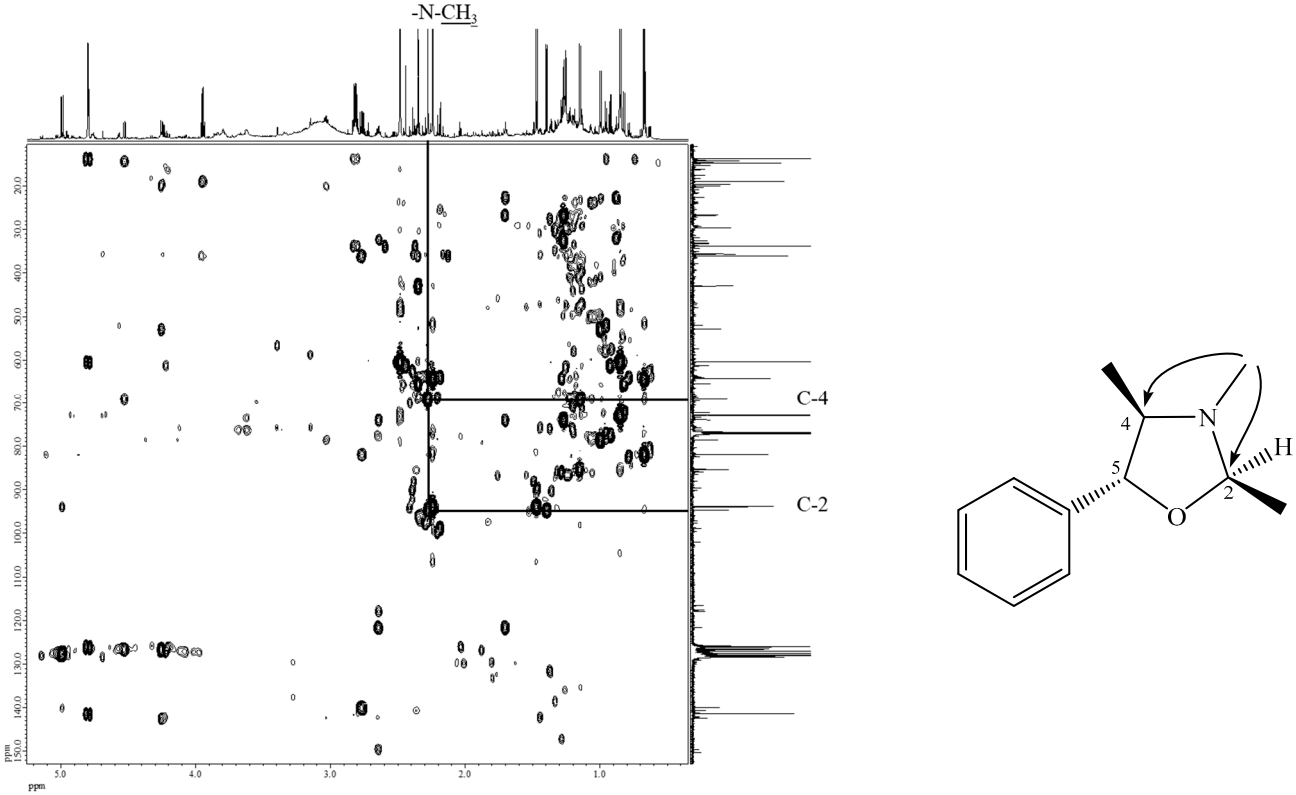
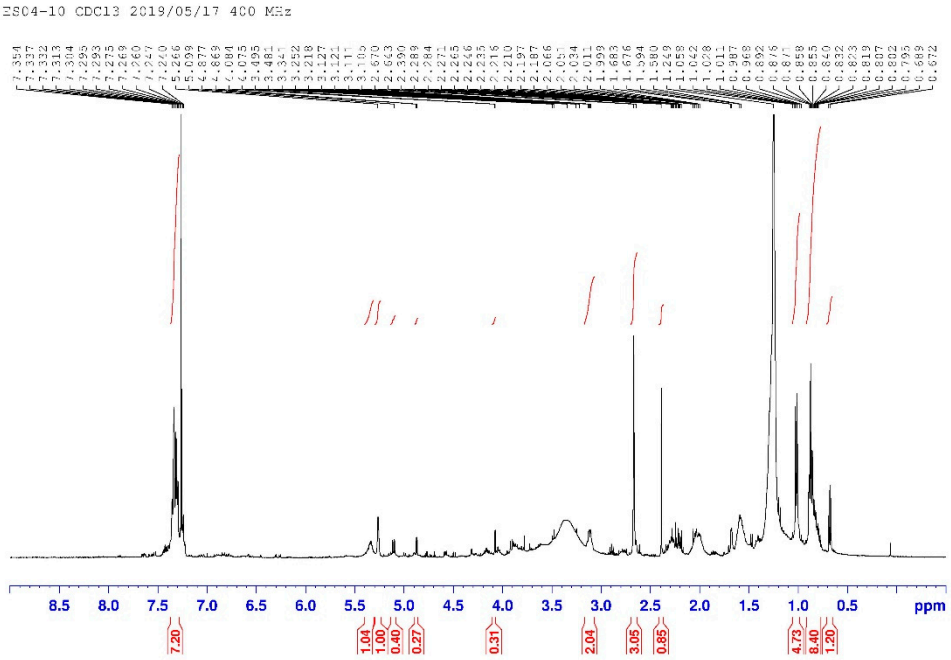


Figure S14. The ephedrine alkaloids chloroform extracts of *E. sinica* (EP01).



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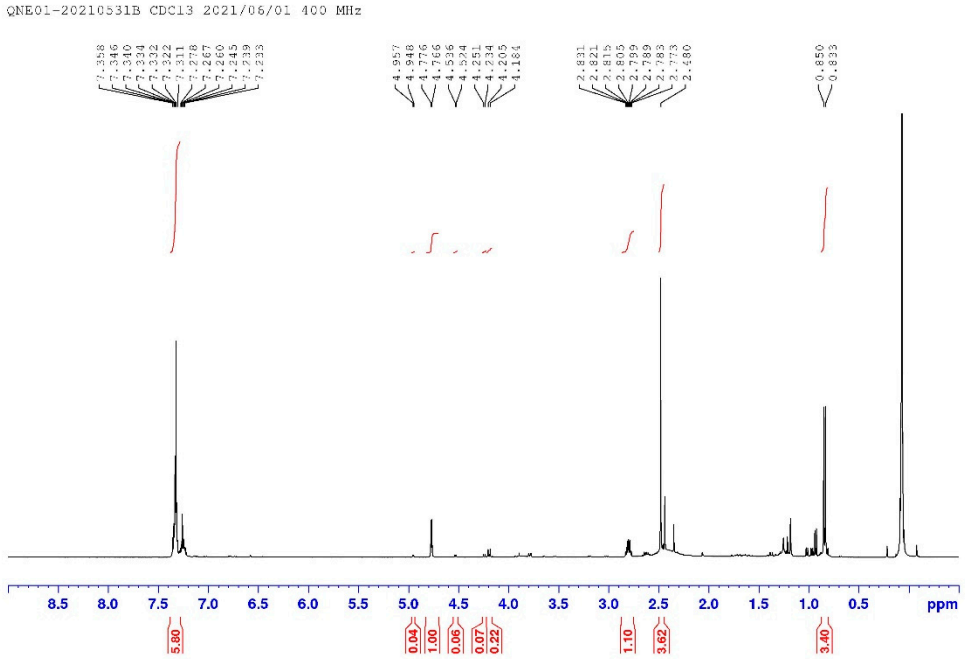

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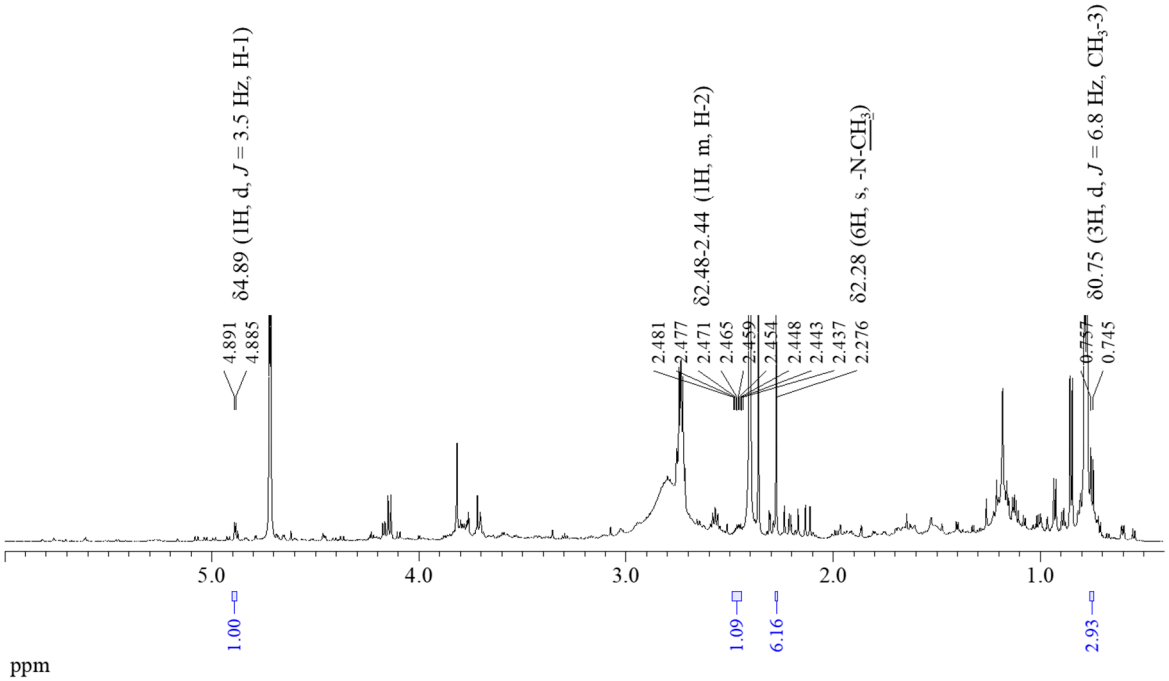
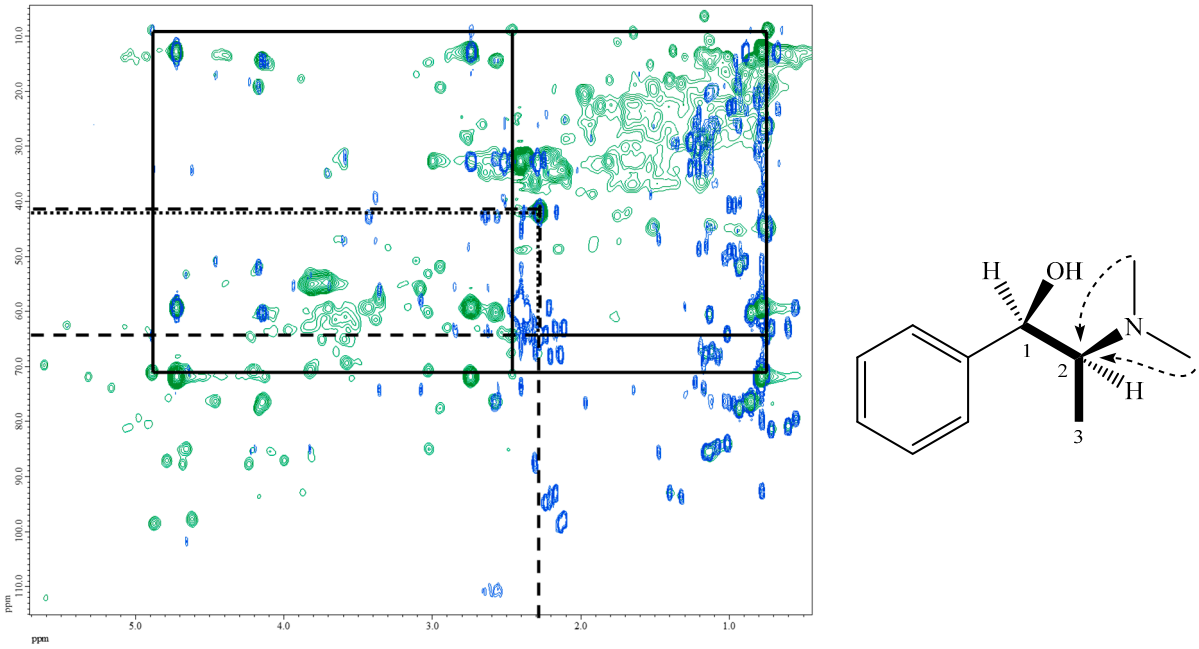


Figure S17. HSQC/TOCSY (▬), HSQC (▪▪▪▪▪) and HMBC (▬ ▬) spectra of ME (**1**).



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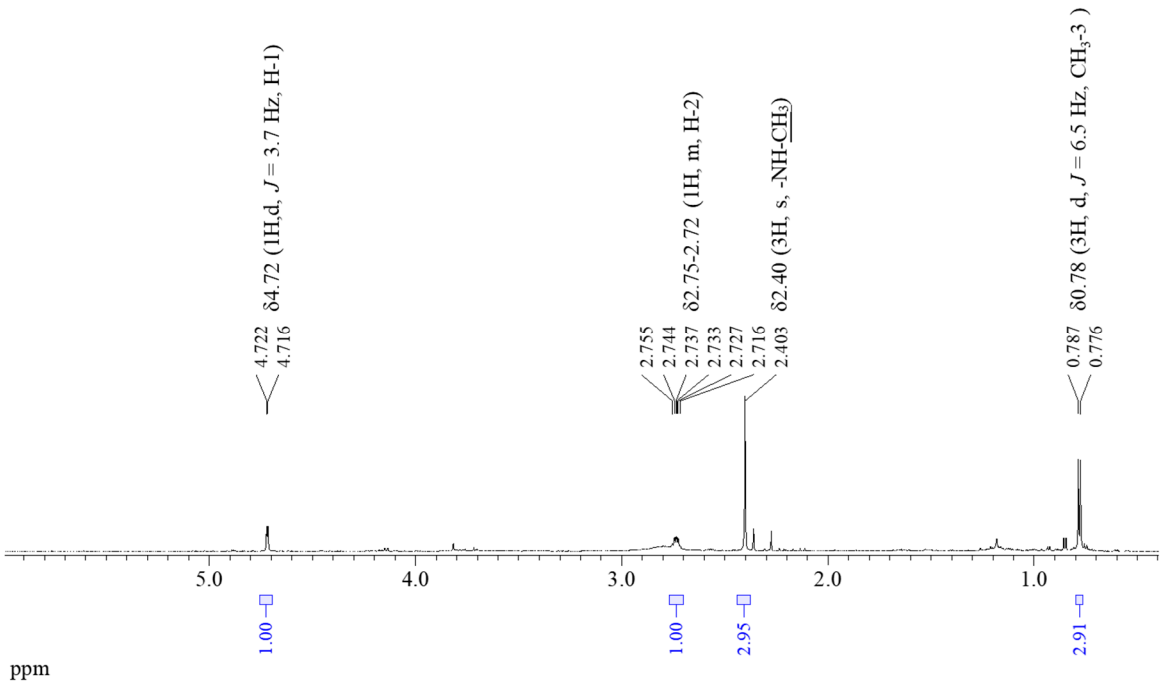

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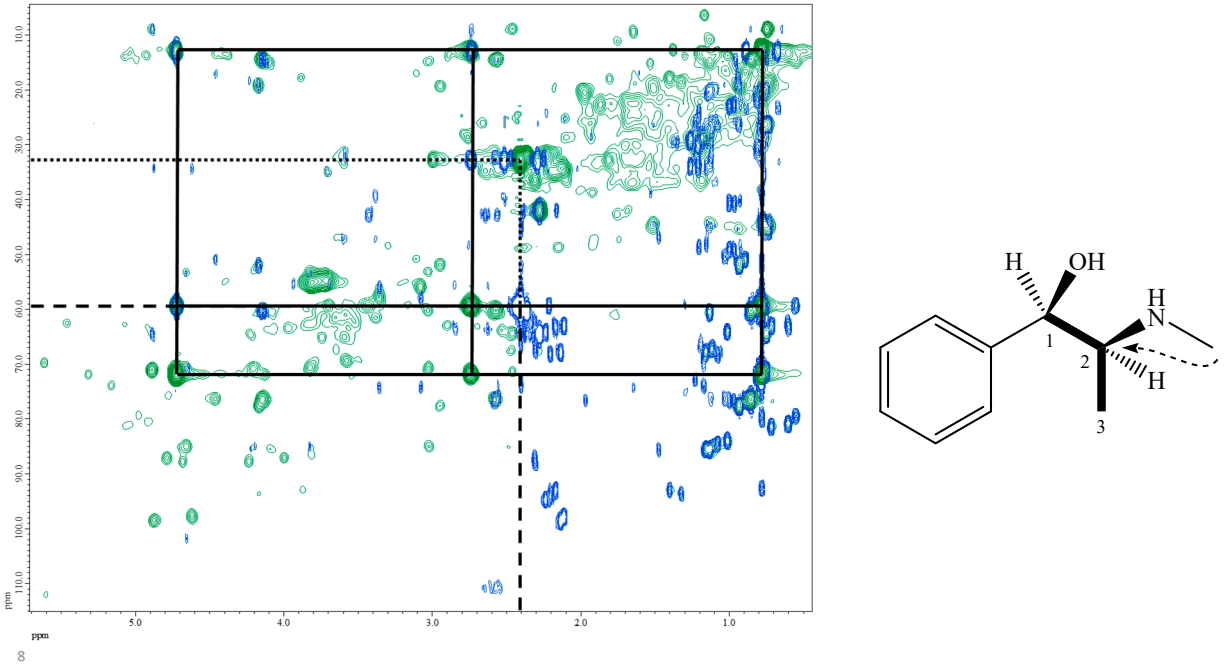

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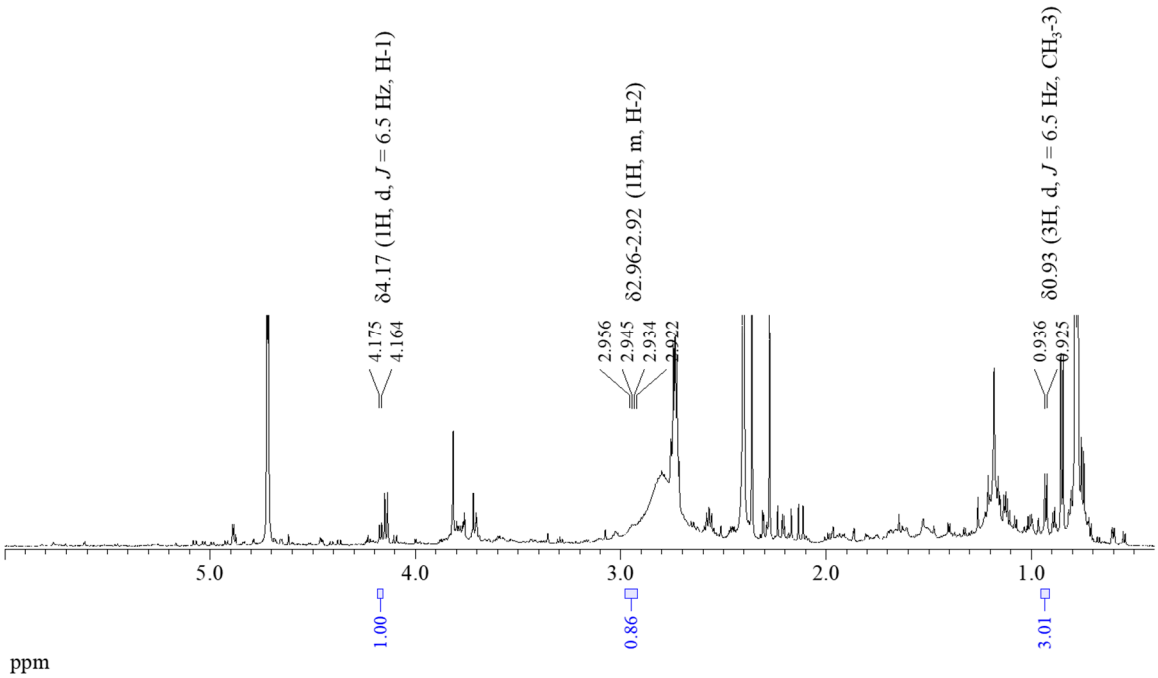

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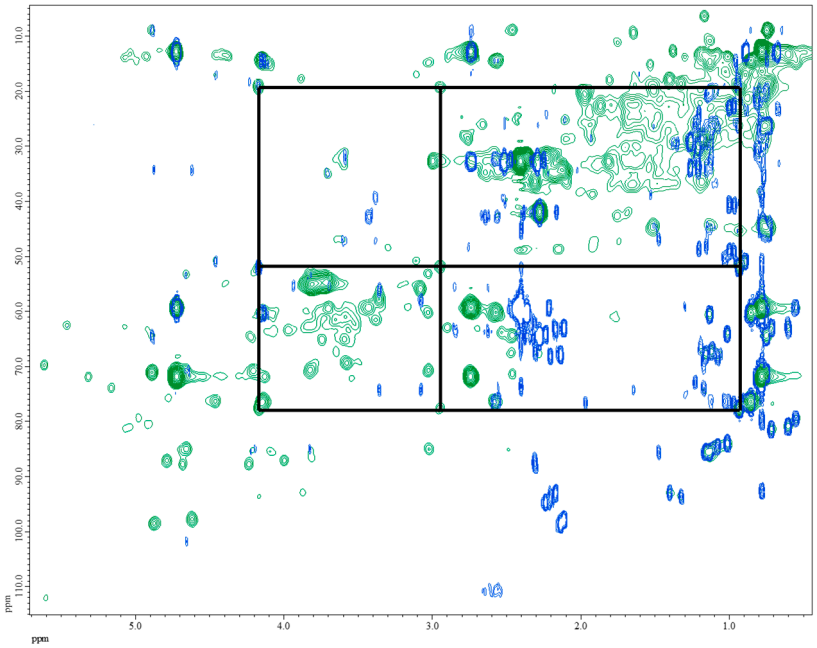


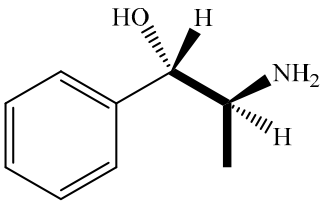


Figure S22. ^{1}H-NMR of PE (**6**).

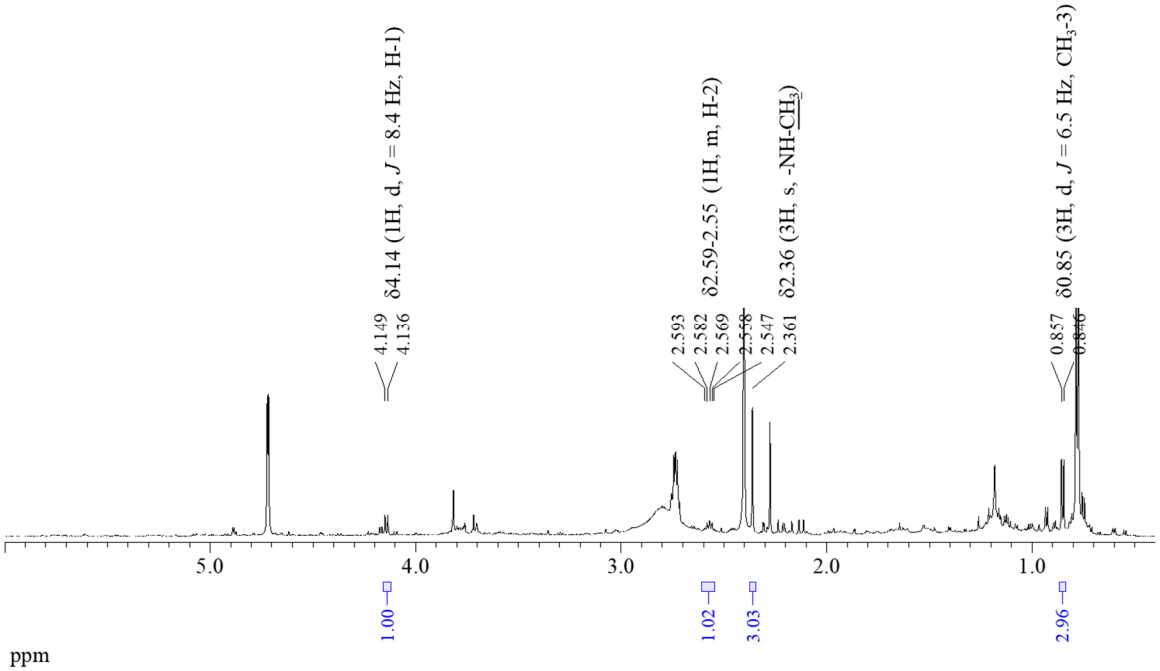


Figure S23. HSQC/TOCSY (▬), HSQC (▪▪▪▪▪) and HMBC(▬ ▬) spectra of PE (**6**).

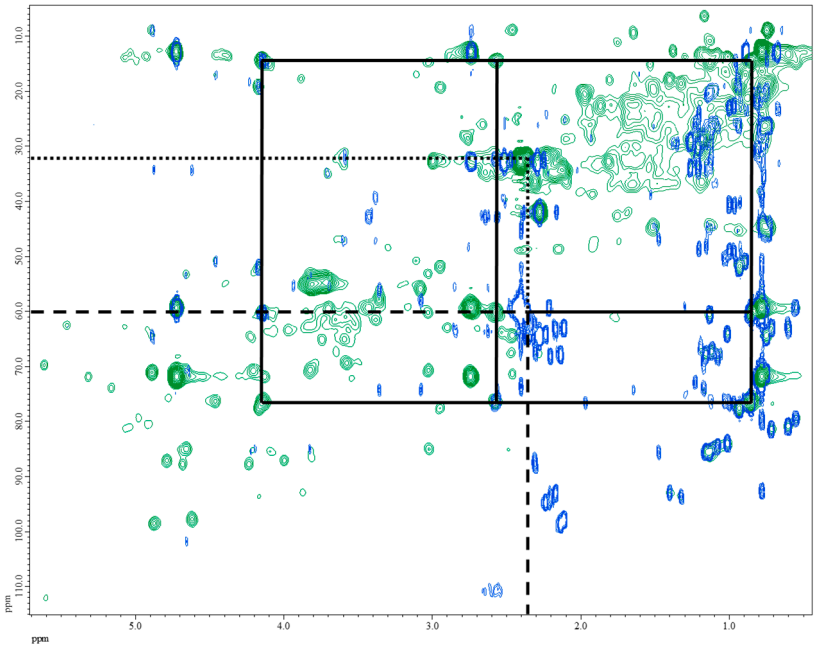
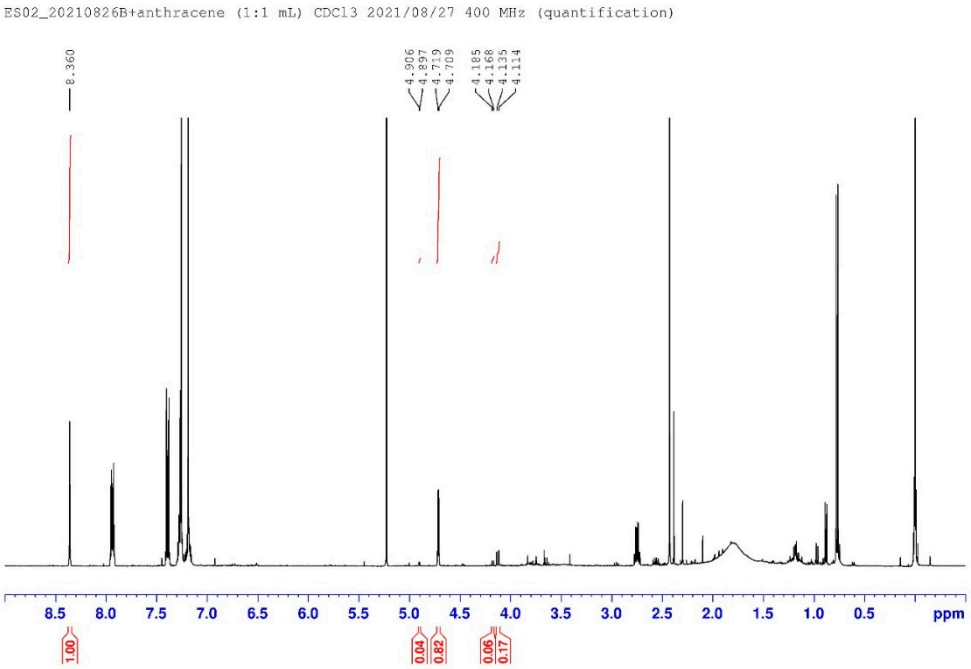


Figure S24. ^{1}H-NMR of EP01.



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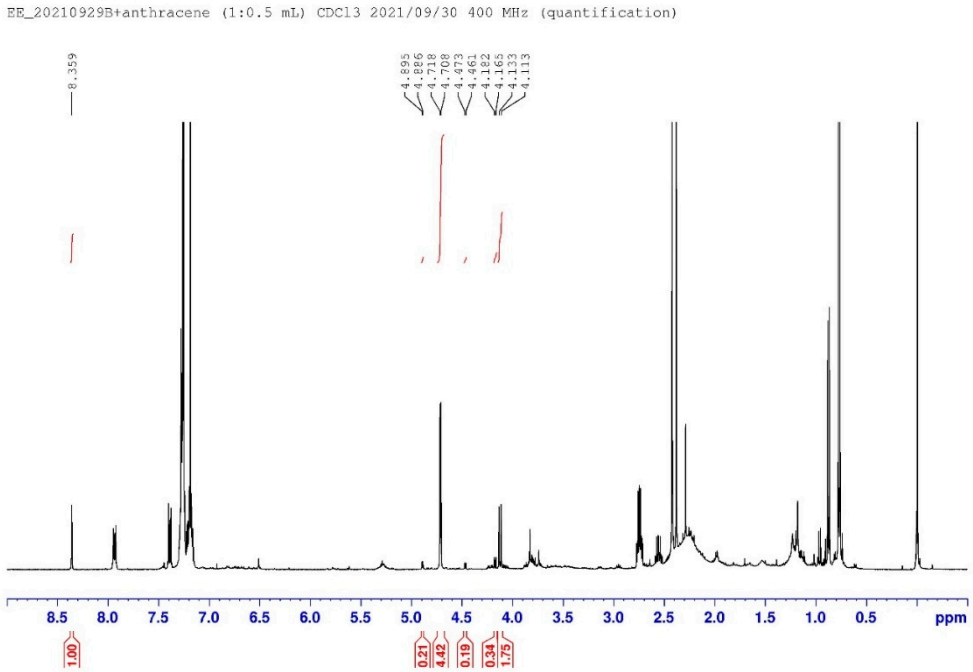


Figure S26. ^{1}H-NMR of EP03.

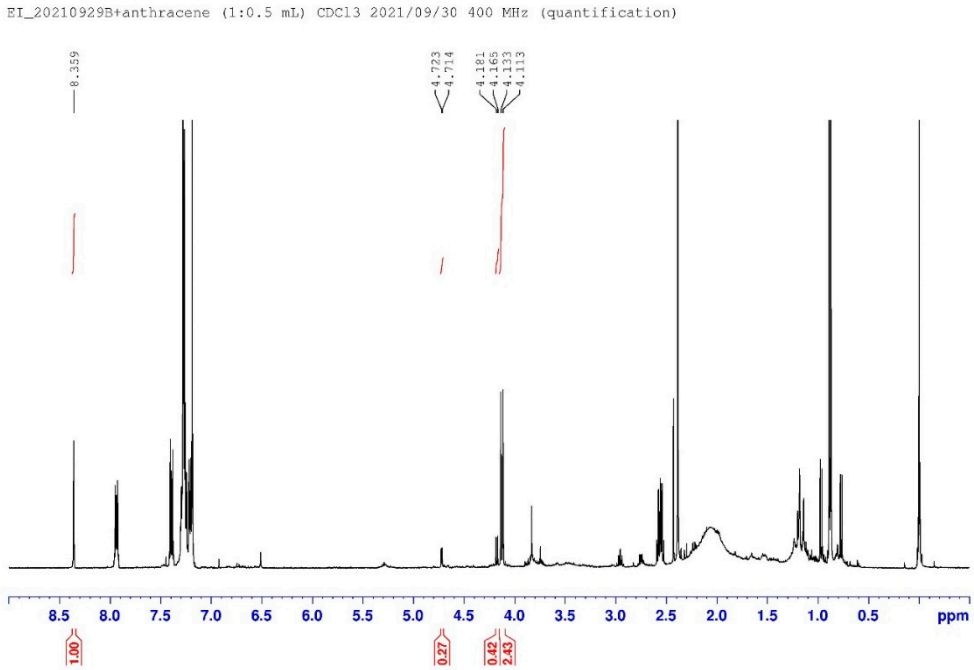


Figure S27. ^{1}H-NMR of EP04.

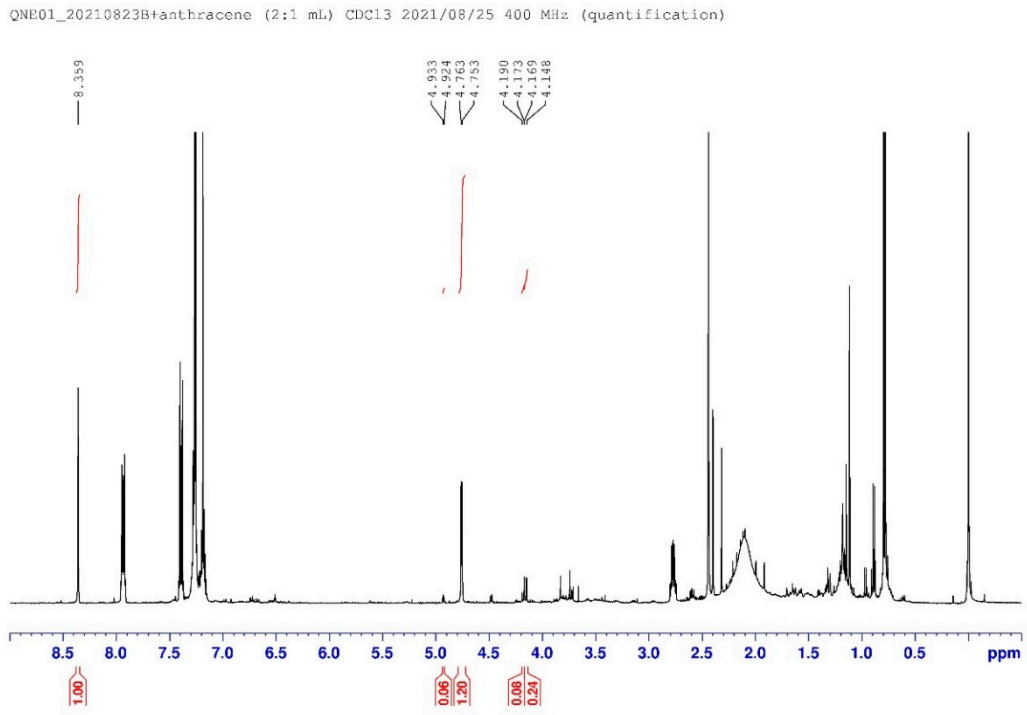


Figure S28. ^{1}H-NMR of EP05.

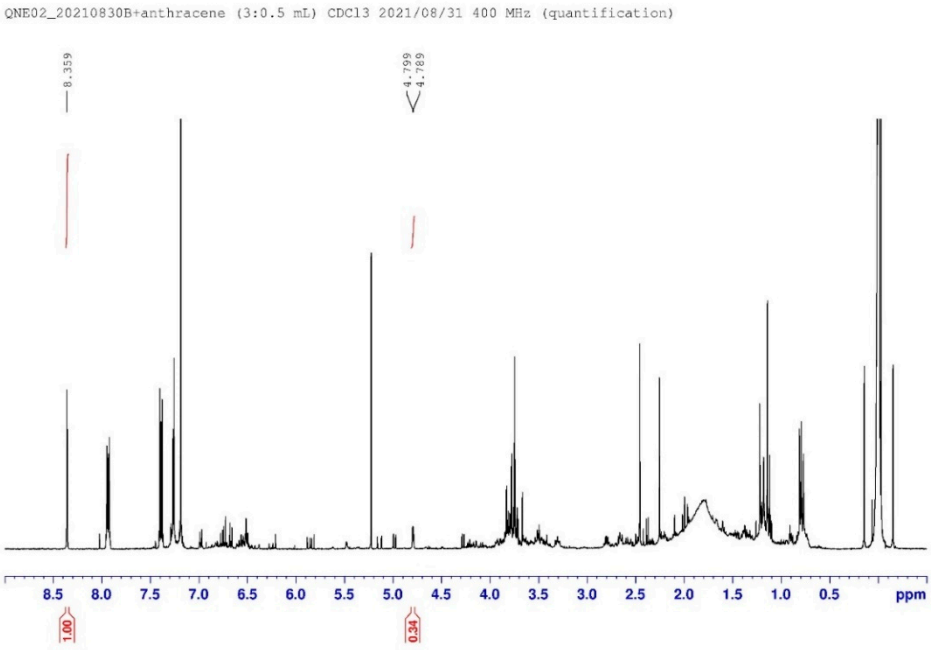


Figure S29. ^{1}H-NMR of EP06.

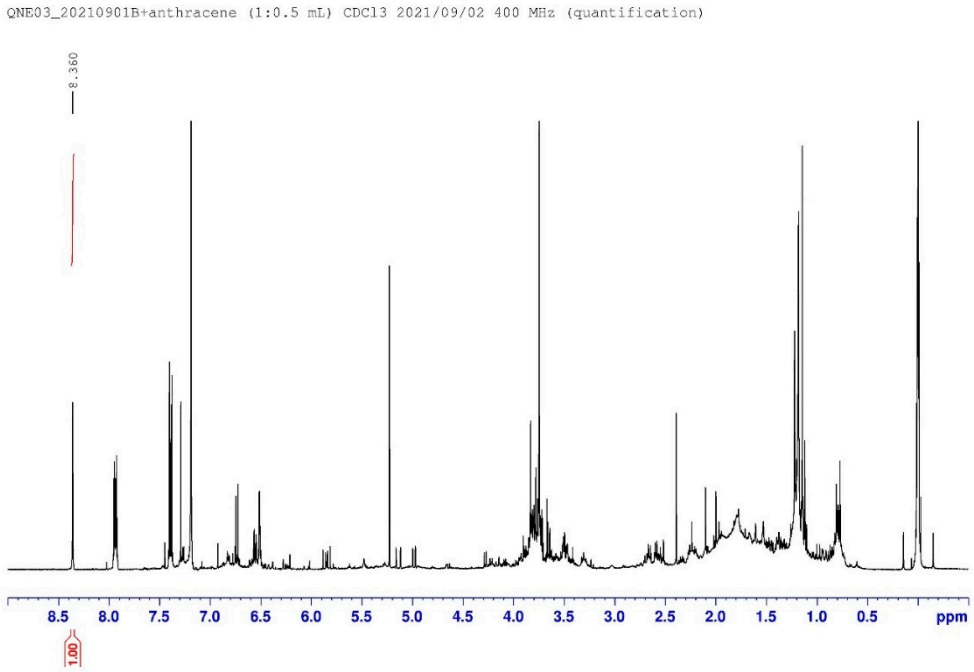


Figure S30. ^{1}H-NMR of EP07.

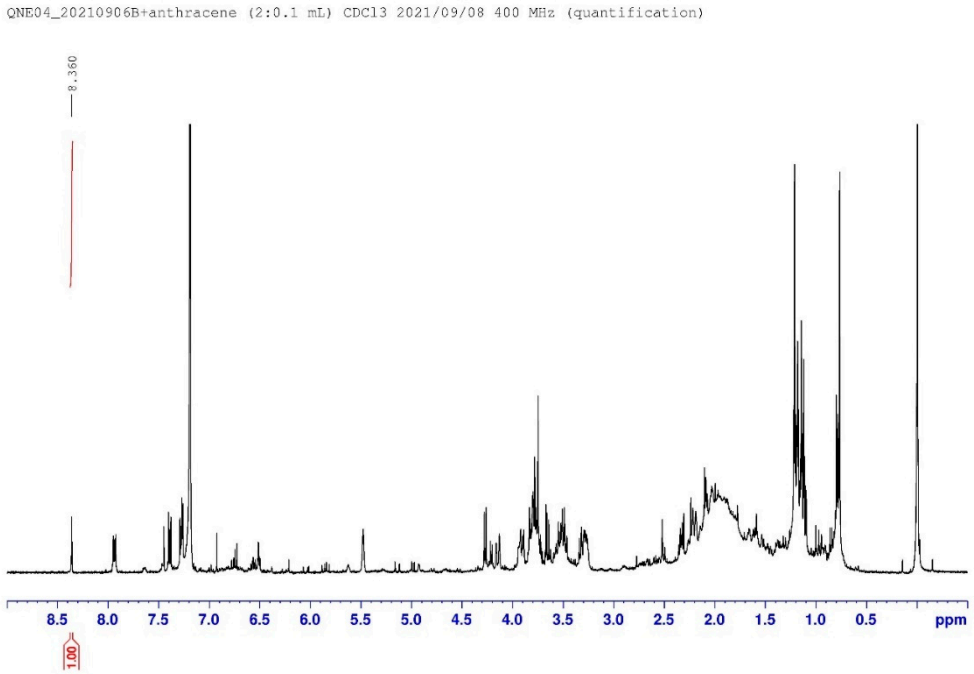


Figure S31. ^{1}H-NMR of EP08.

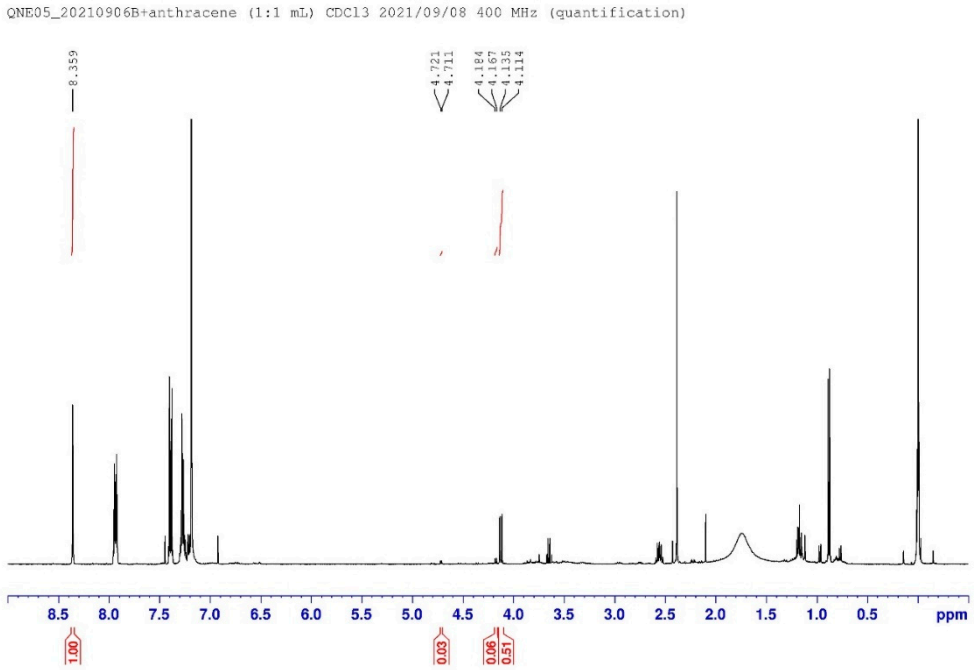


Figure S32. ^{1}H-NMR of EP09.

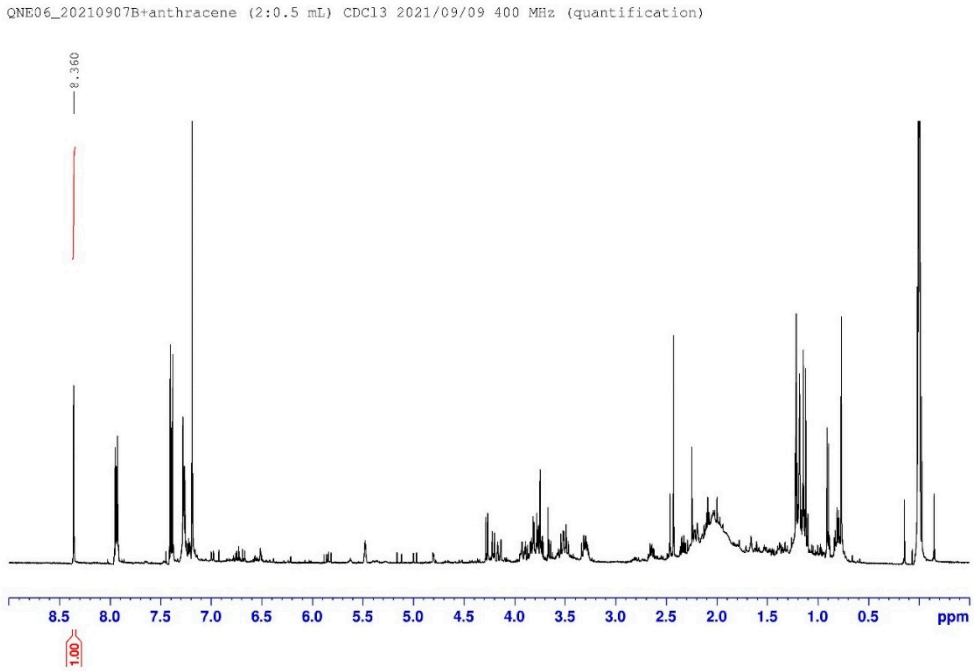


Figure S33. [1]H-NMR of EP10.

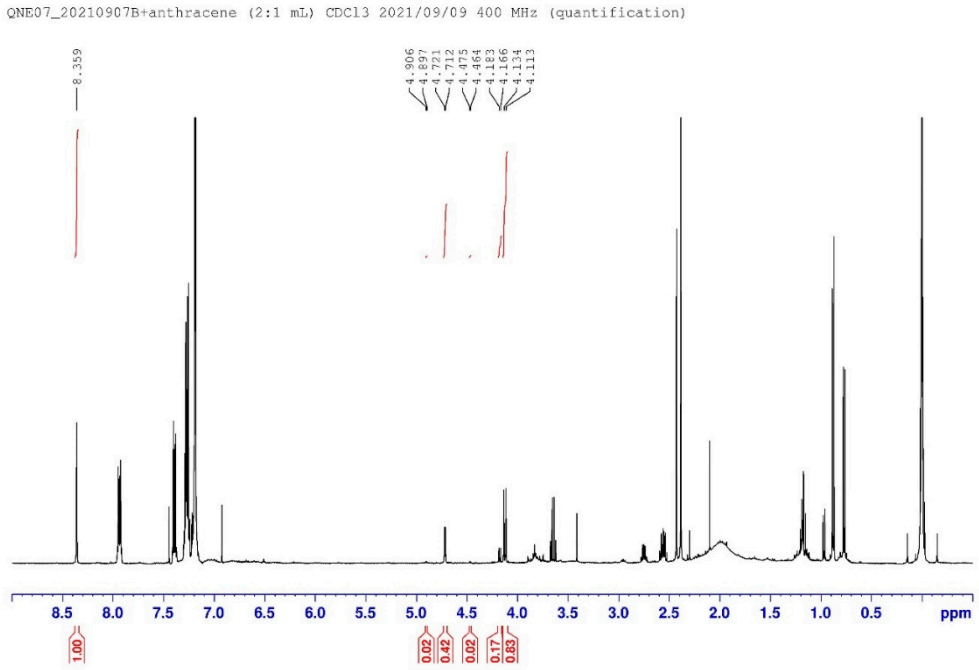


Figure S34. [1]H-NMR of EP11

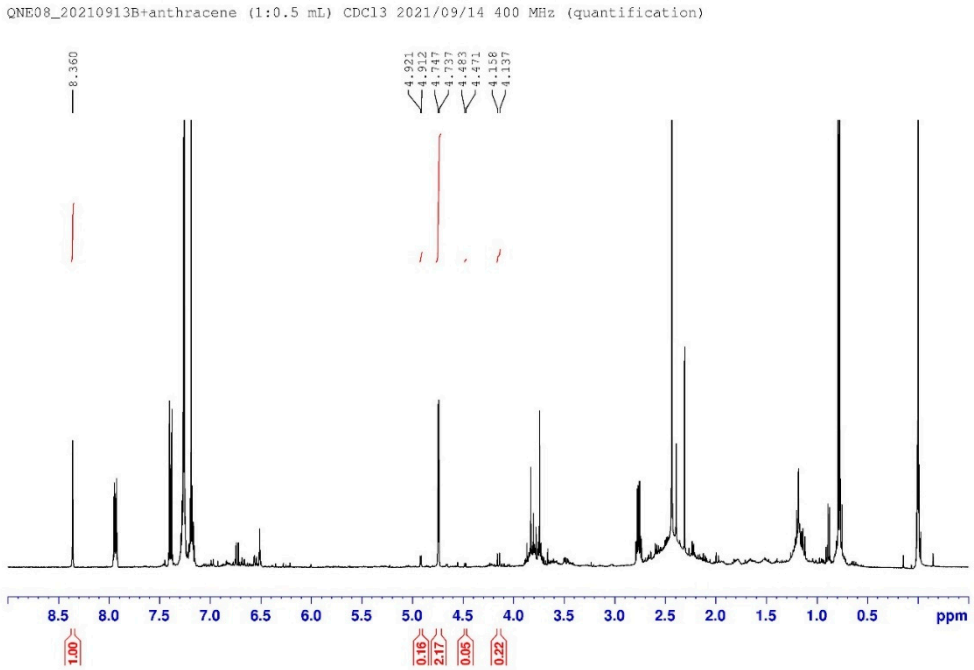


Figure S35. ^{1}H-NMR of EP12.

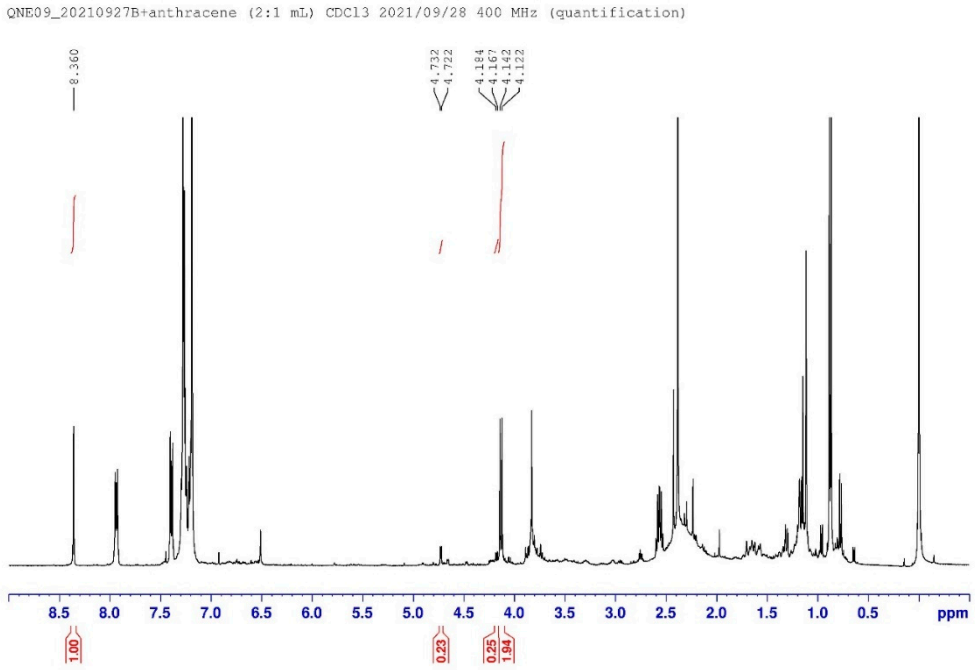


Figure S36. ^{1}H-NMR of EP13.

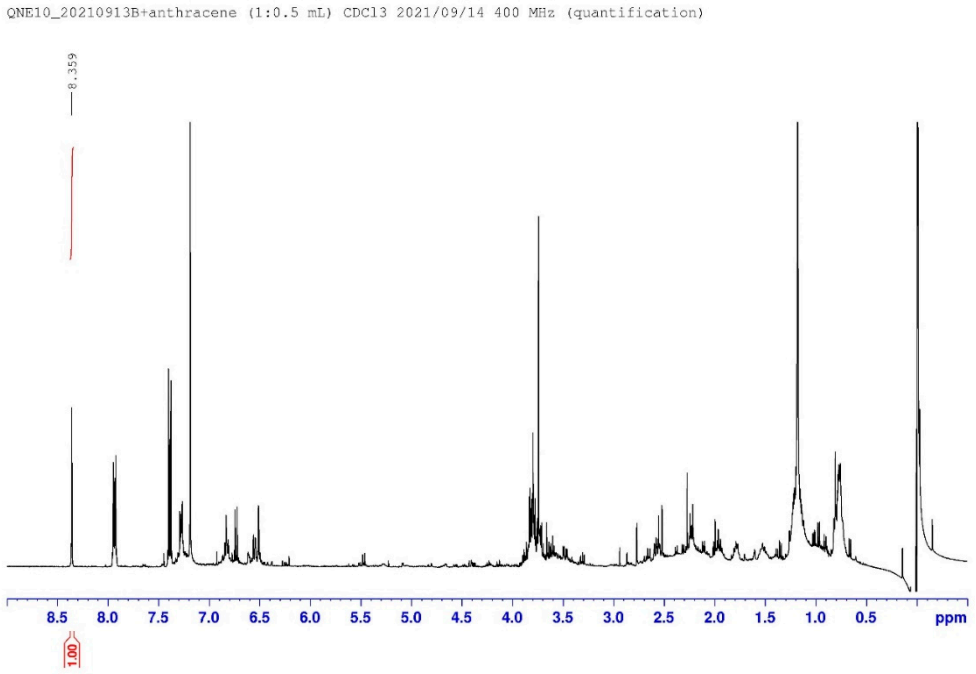


Figure S37. ^{1}H-NMR of EP14.

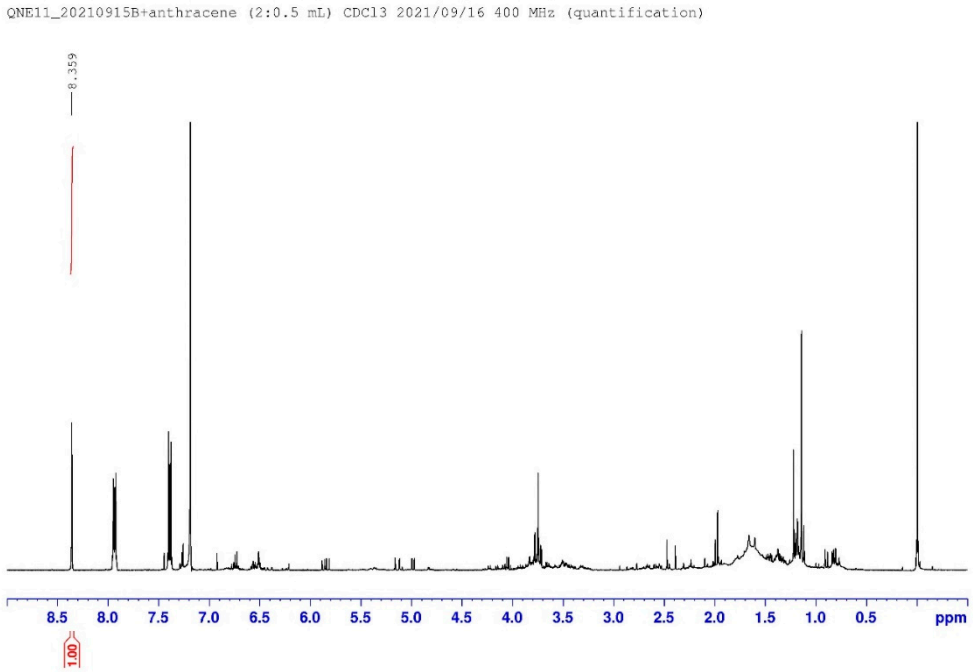


Figure S38. ^{1}H-NMR of EP15.

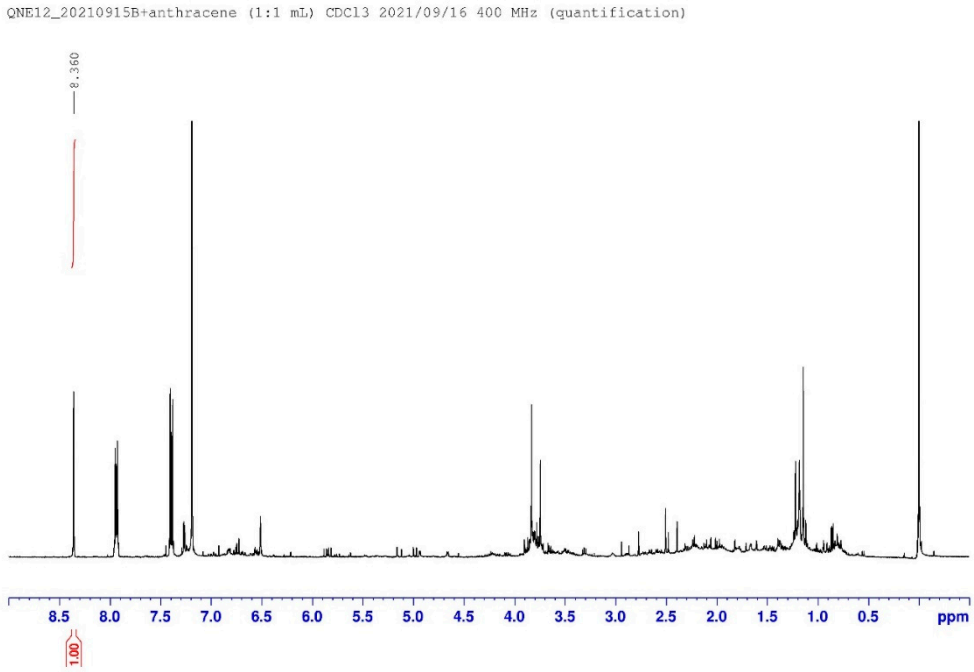


Figure S39. ^{1}H-NMR of EP16.

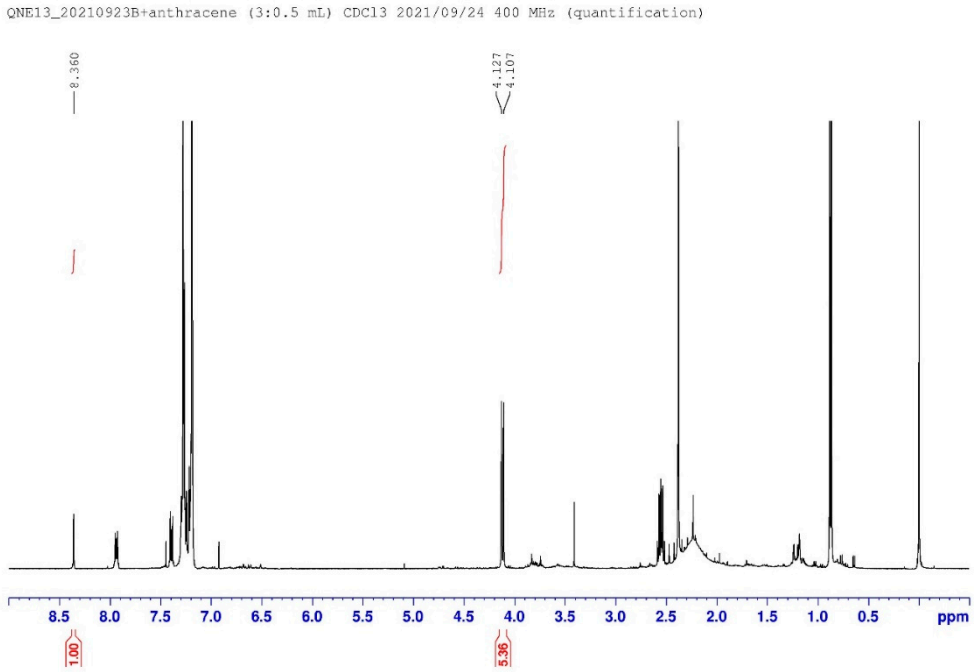


Figure S40. ^{1}H-NMR of EP17.

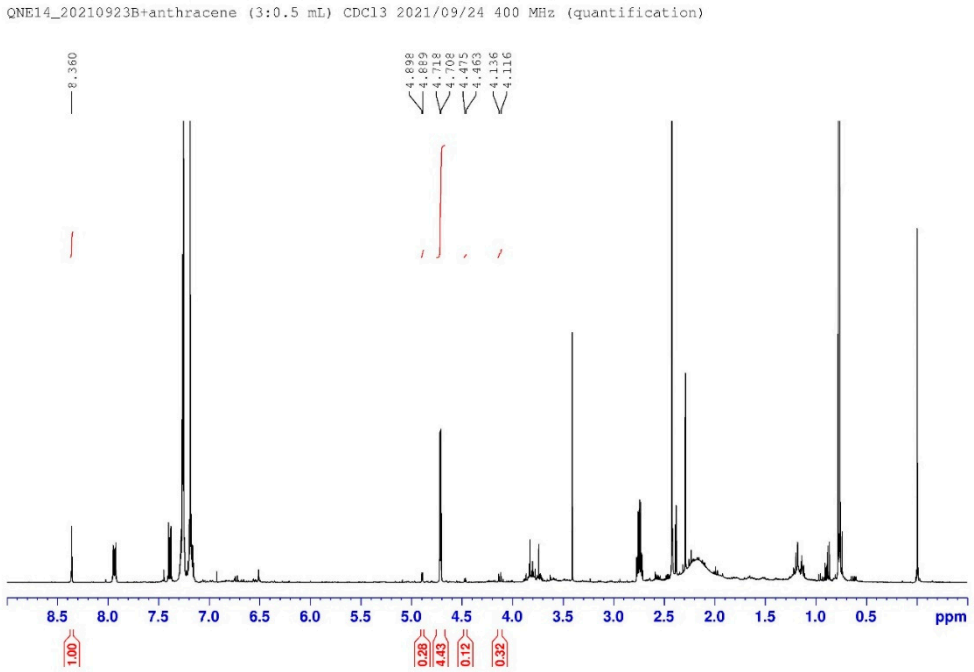
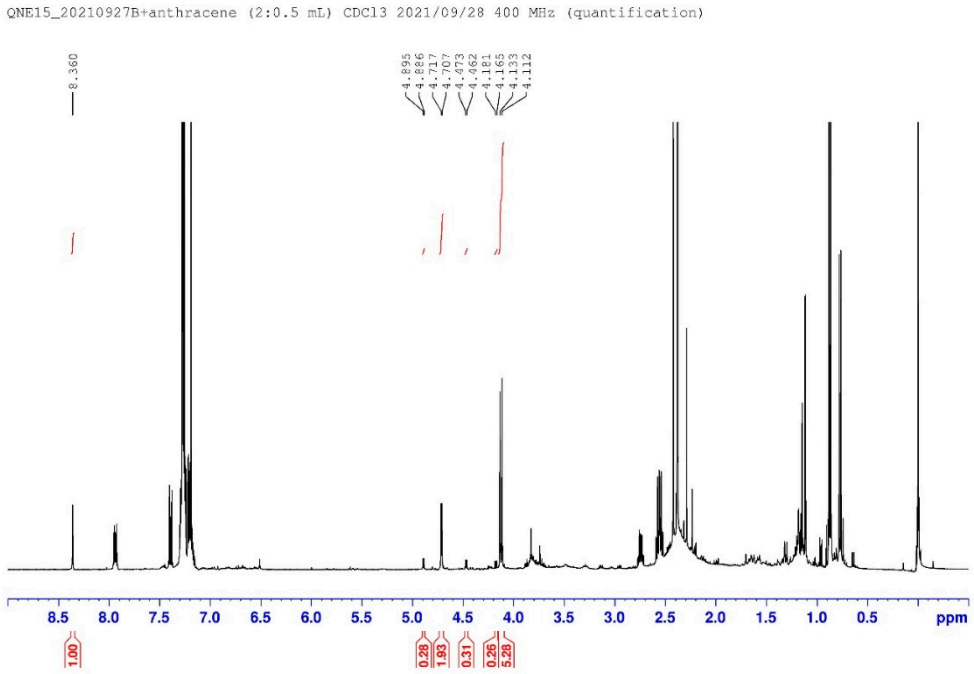


Figure S41. ^{1}H-NMR of EP18.



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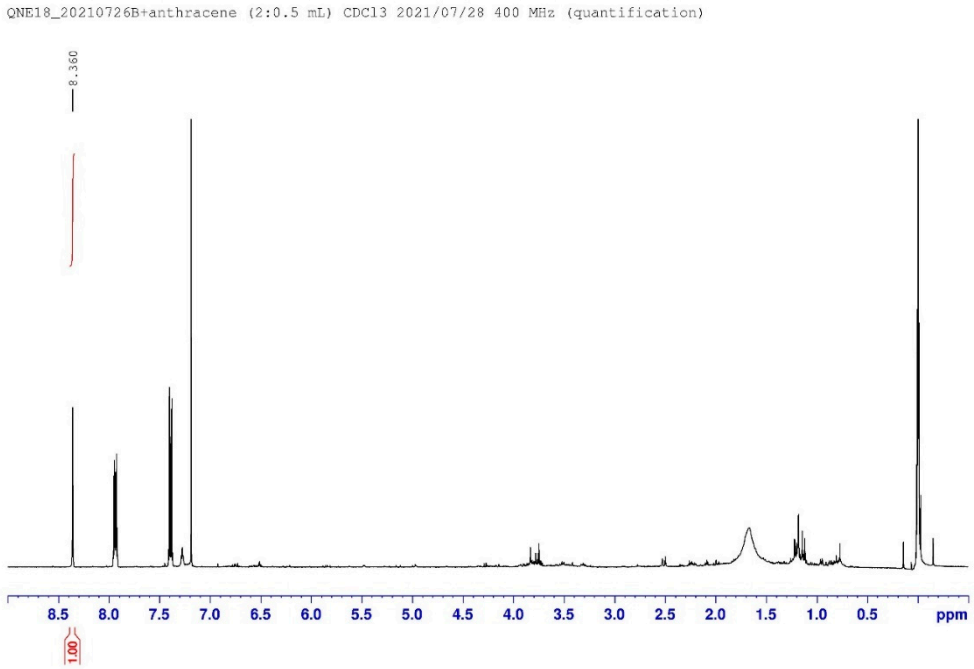

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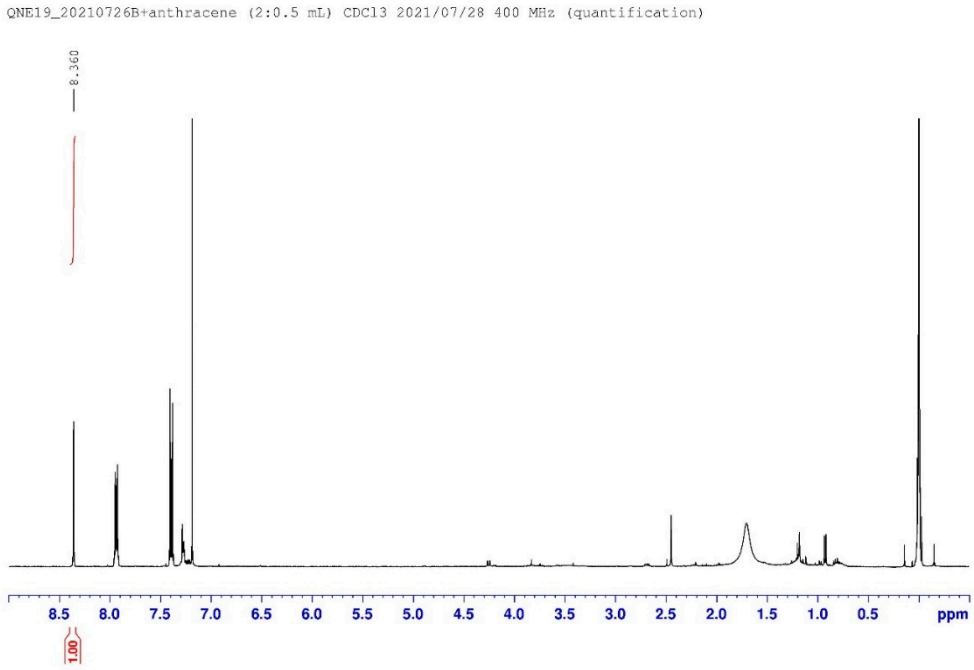

Table S1. Extraction and preparation of Ephedrae Herba for NMR analysis.

	Sample	**Source**	**Powder (g)**	**Extract (mg)**	**Anthracene Standard (mg/10mL)**
1	EP01	*E. sinica*	2.0395	27.47	5.92
2	EP02	*E. equisetina*	2.1106	12.07	5.16
3	EP03	*E. intermedia*	2.0593	12.48	5.16
4	EP04	*E. sinica*	2.0033	19.60	5.92
5	EP05	*E. sinica*	2.003	31.45	6.26
6	EP06	*E. intermedia*	2.0176	8.80	6.26
7	EP07	*E. przewalskii*	2.0051	5.91	5.49
8	EP08	*E. glauca*	2.0268	19.74	5.49
9	EP09	*E. przewalskii*	2.0003	9.93	5.49
10	EP10	*E. equisetina*	2.0118	22.39	5.49
11	EP11	*E. gerardiana*	2.0508	9.64	8.11
12	EP12	*E. intermedia*	2.239	12.07	5.62
13	EP13	*E. lepidosperma*	2.0272	12.75	8.11
14	EP14	*E. minuta*	2.068	6.27	8.11
15	EP15	*E. regeliana*	2.0518	3.65	8.11
16	EP16	*E. monosperma*	2.0465	13.65	5.62
17	EP17	*E. saxatilis*	2.0928	15.66	5.62
18	EP18	*E. sinica*	2.2834	15.54	5.62
19	EP19	*E. przewalskii*	1.7584	13.40	10.96
20	EP20	*E. intermedia*	0.8773	11.37	10.96