

## Supporting information 2

### EC18 AS A TOOL TO UNDERSTAND THE ROLE OF HCN4 CHANNELS IN MEDIATING HYPERPOLARIZATION-ACTIVATED CURRENT IN TISSUES

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#### Content:

<sup>1</sup>H-NMR and <sup>13</sup>C-NMR spectra of selected compounds (Figures S4-S18)

Chromatographic profiles of LC-DAD analysis of compounds **3a-3g** (Figures S19-S25)

Figure S4:  $^1\text{H}$ -MMR of *cis*-4 ( $\text{CDCl}_3$ )

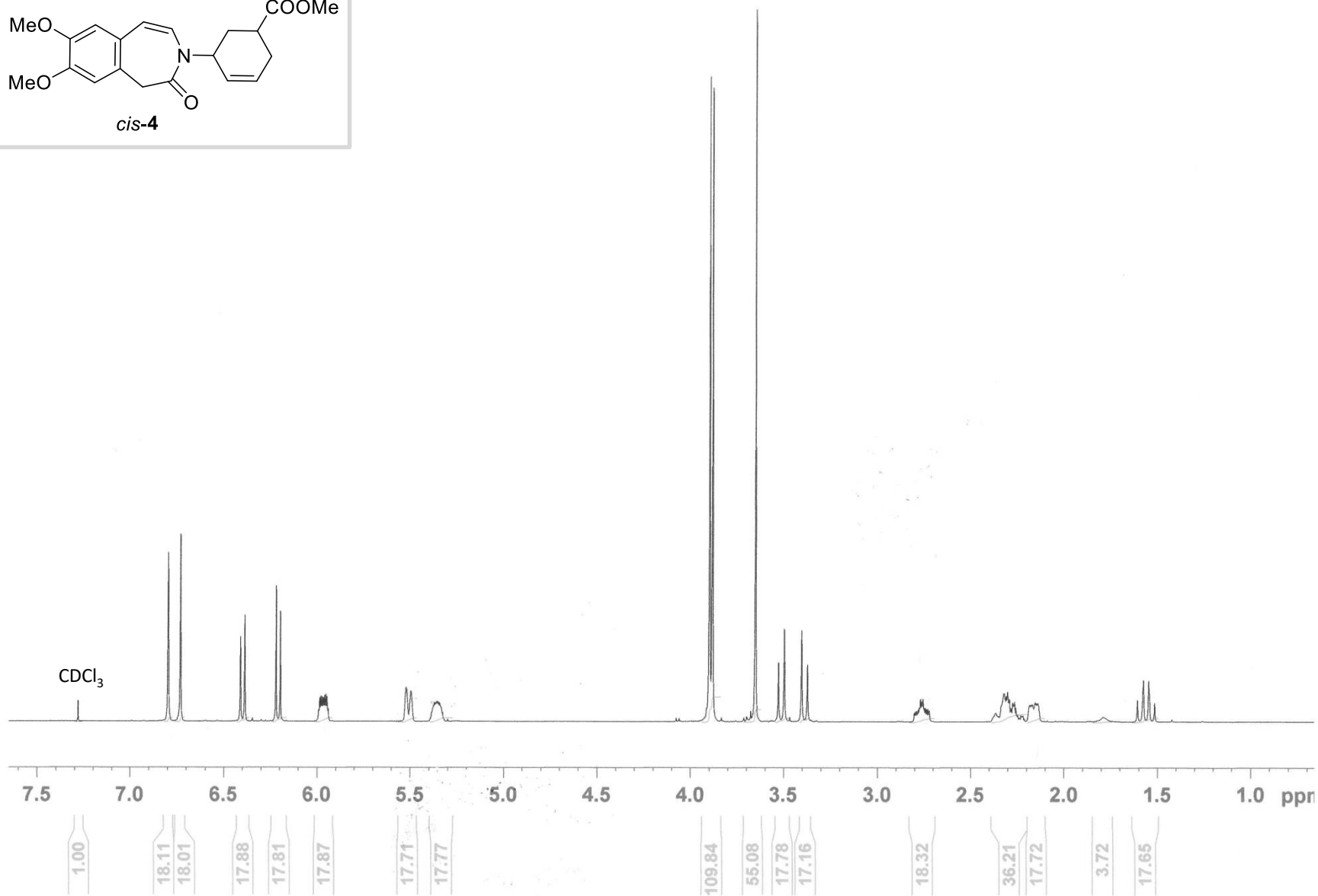
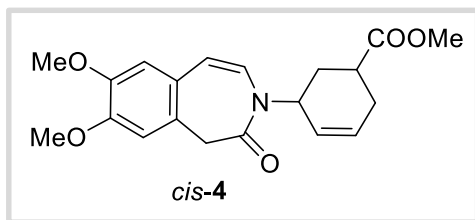


Figure S5: <sup>1</sup>H-MMR of *cis*-5 (CDCl<sub>3</sub>)

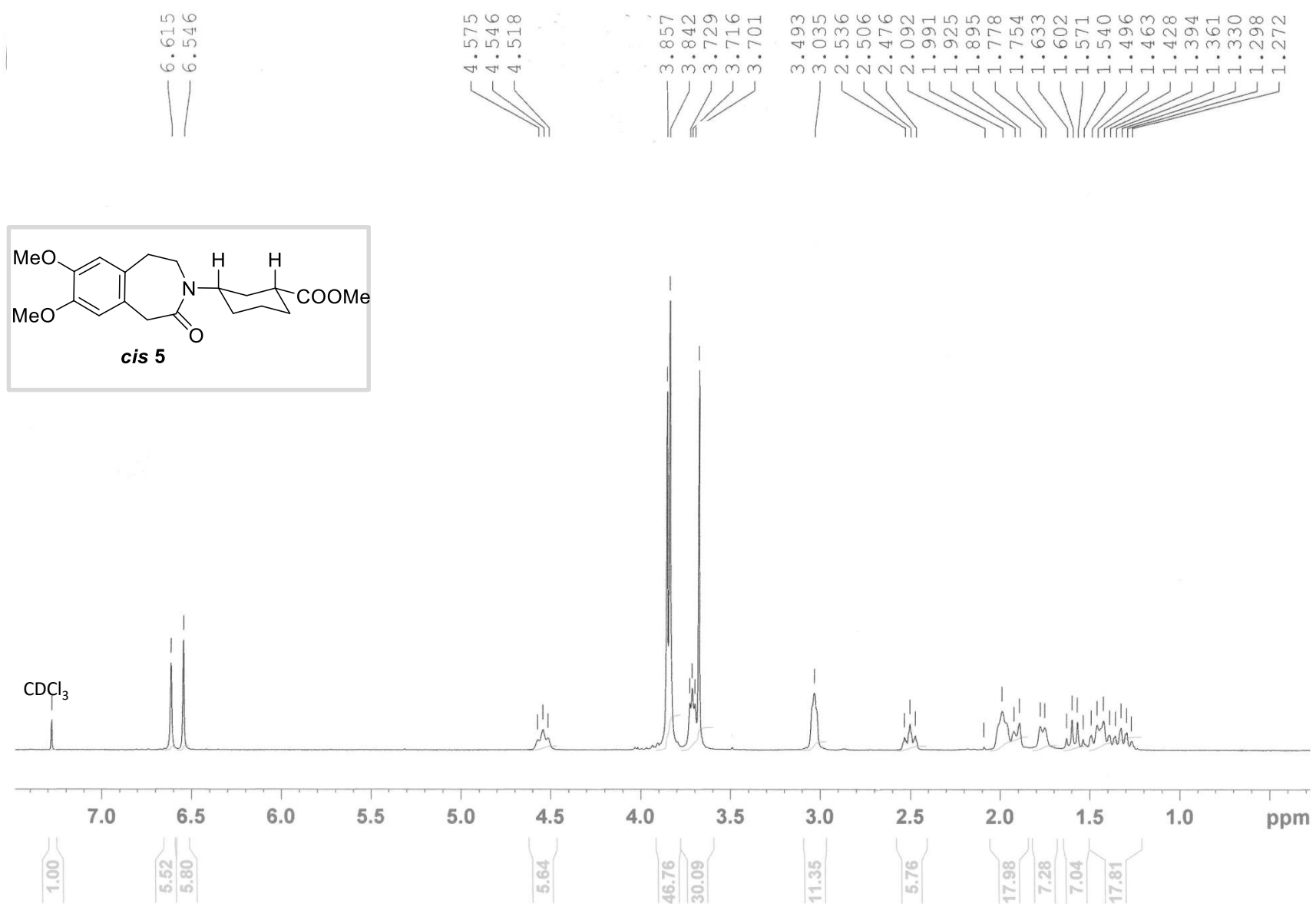


Figure S6:  $^{13}\text{C}$ -MMR of *cis*-5 ( $\text{CDCl}_3$ )

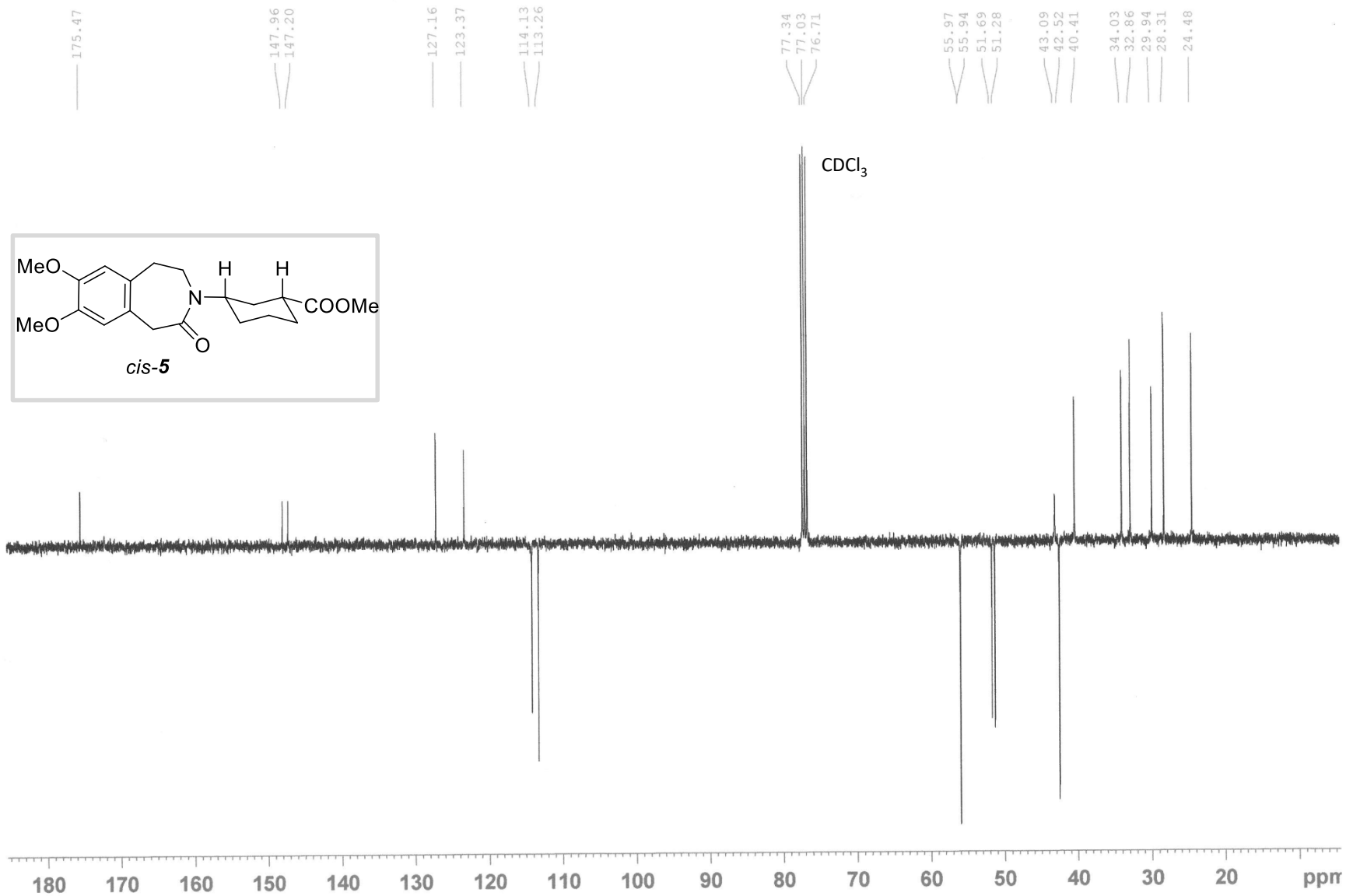


Figure S7:  $^1\text{H}$ -MMR of *cis-trans*-5 ( $\text{CDCl}_3$ )

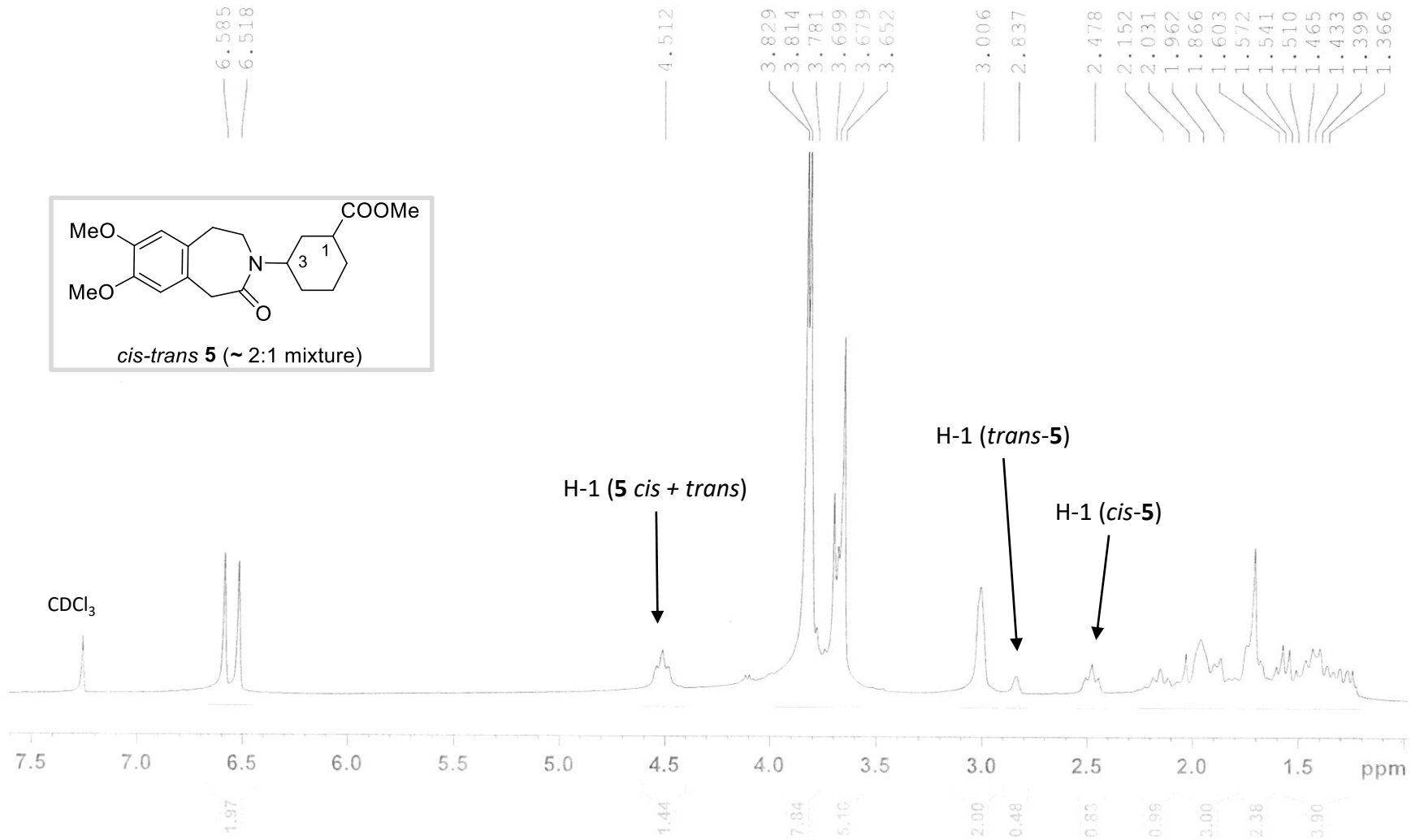


Figure S8:  $^1\text{H}$ -MMR of **6**( $\text{CDCl}_3$ )

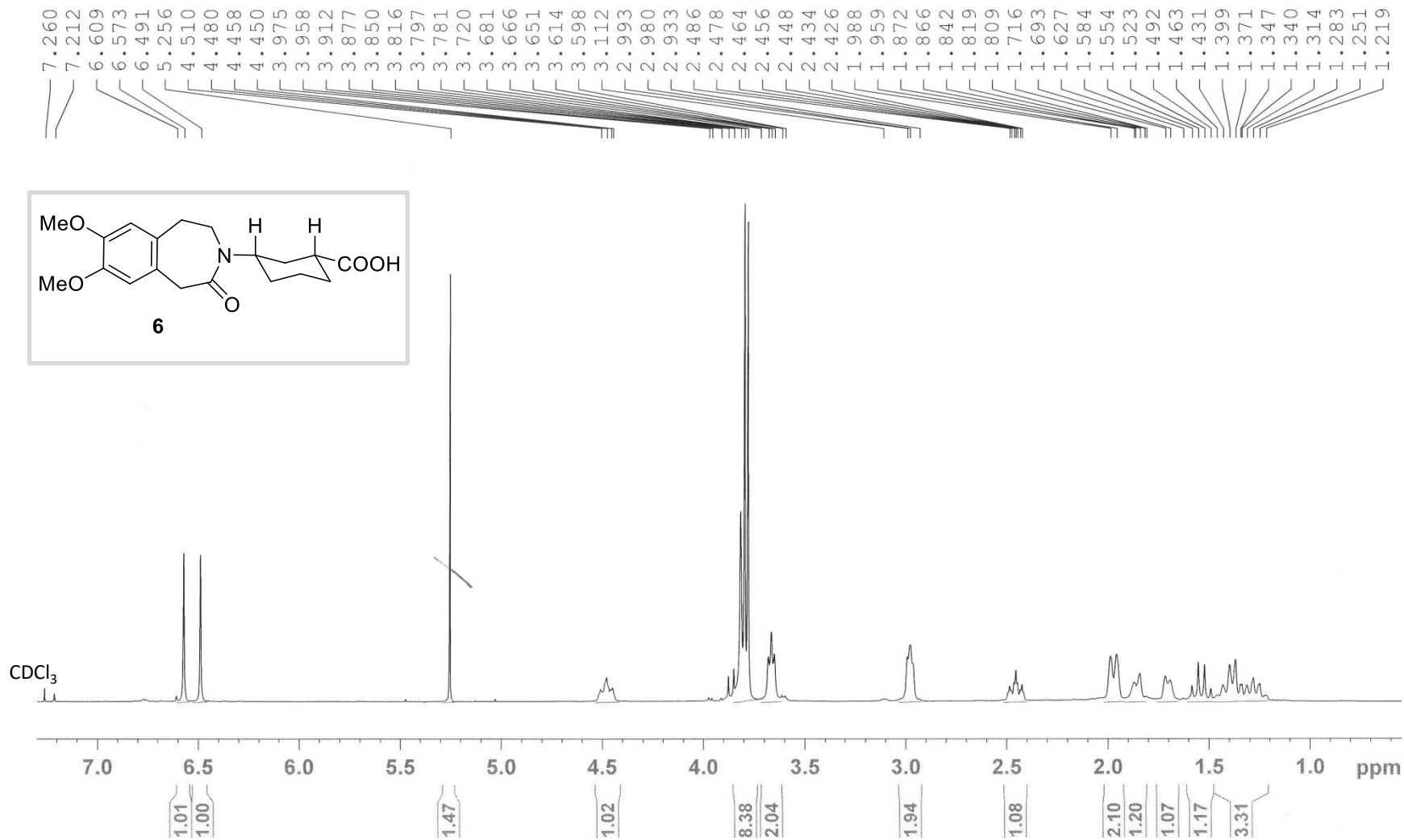


Figure S9:  $^1\text{H}$ -MMR of 7( $\text{CDCl}_3$ )

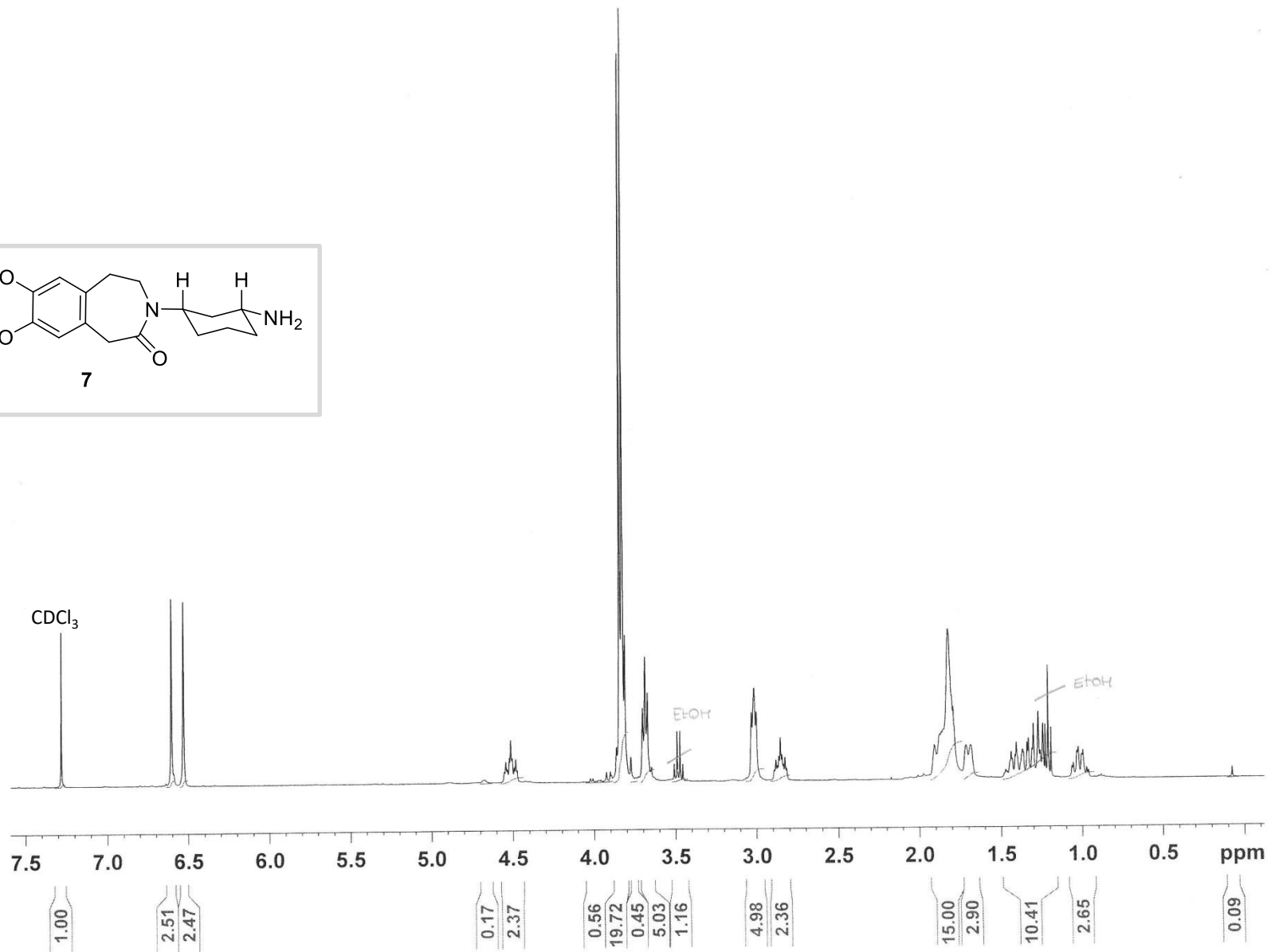
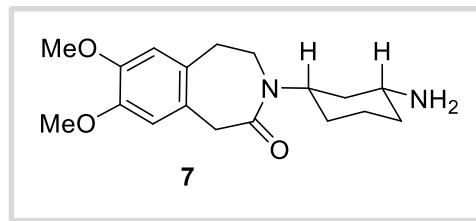


Figure S10:  $^{13}\text{C}$ -MMR of **7**( $\text{CDCl}_3$ )

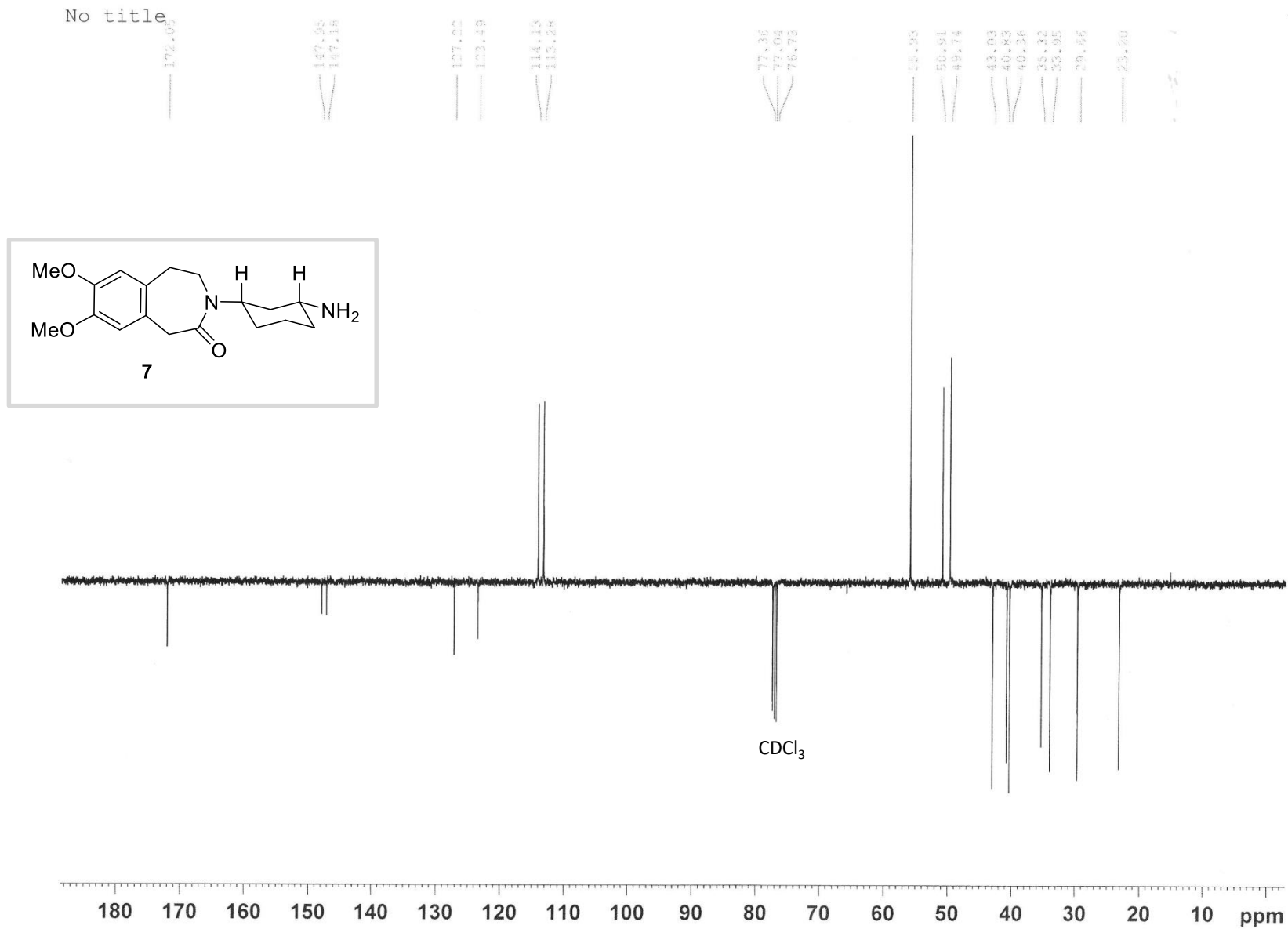




Figure S11:  $^1\text{H}$ -MMR of **7**( $\text{CDCl}_3$ )

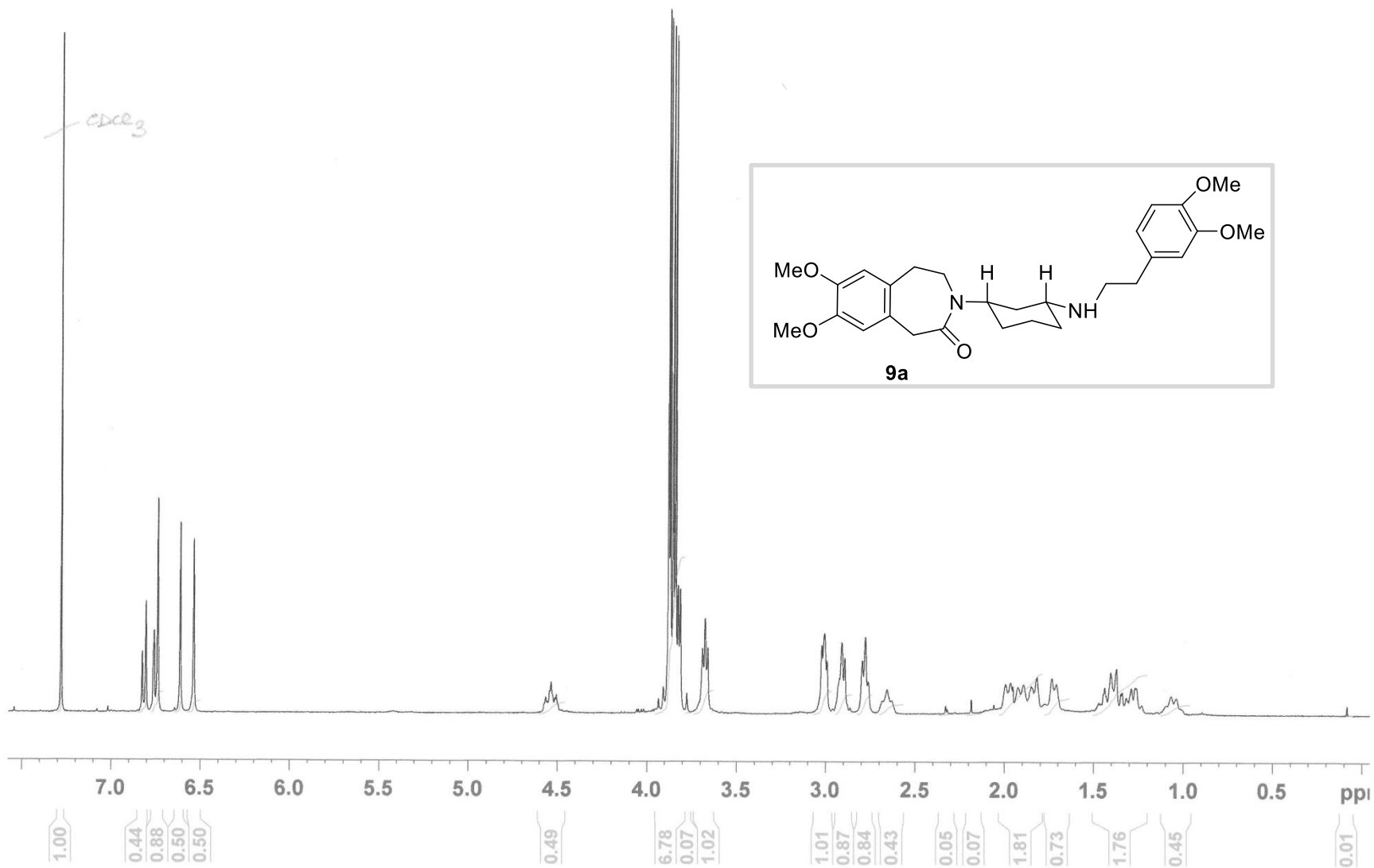


Figure S12:  $^{13}\text{C}$ -MMR of **7**( $\text{CDCl}_3$ )

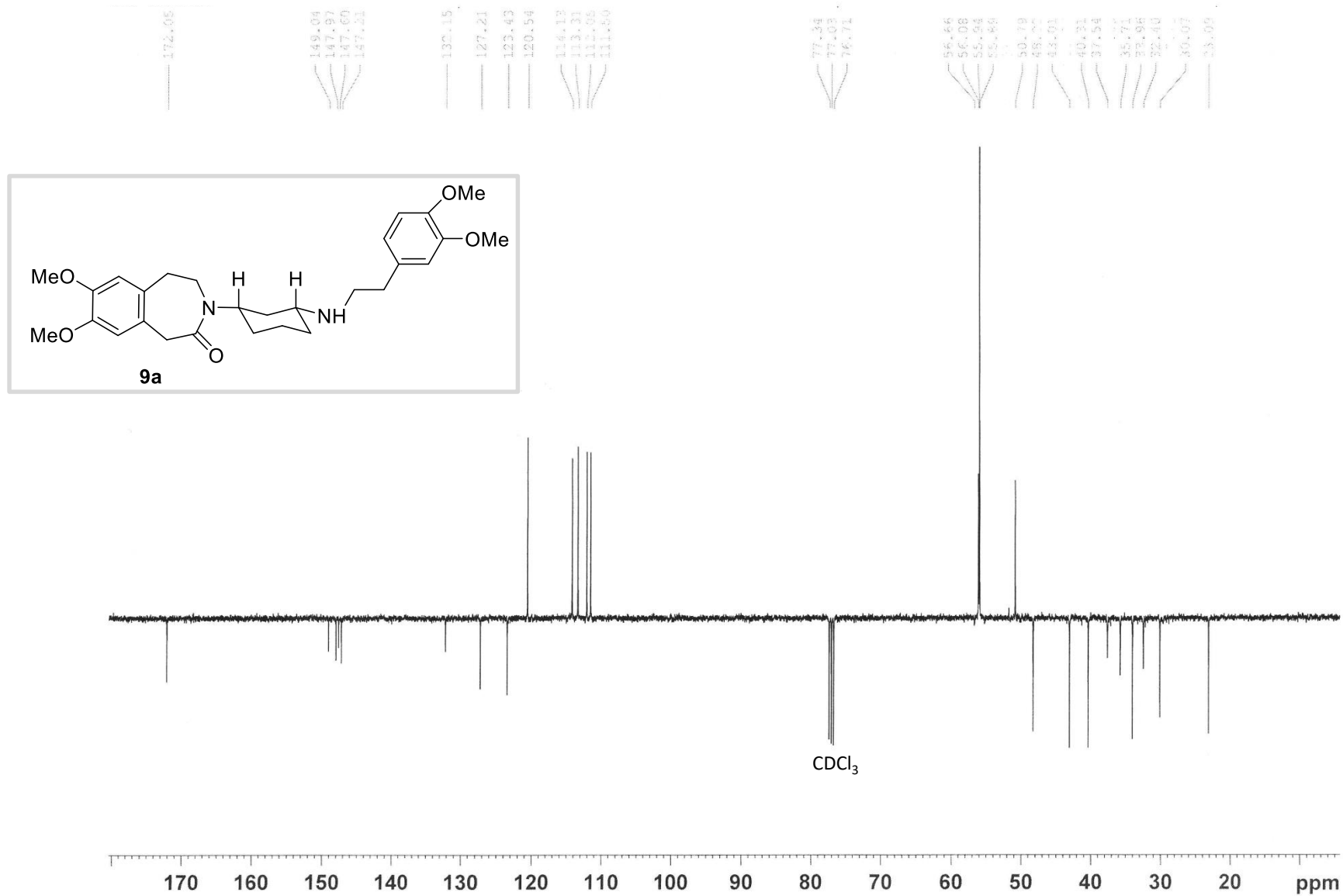


Figure S13:  $^1\text{H}$ -MMR of **3a**( $\text{CDCl}_3$ )

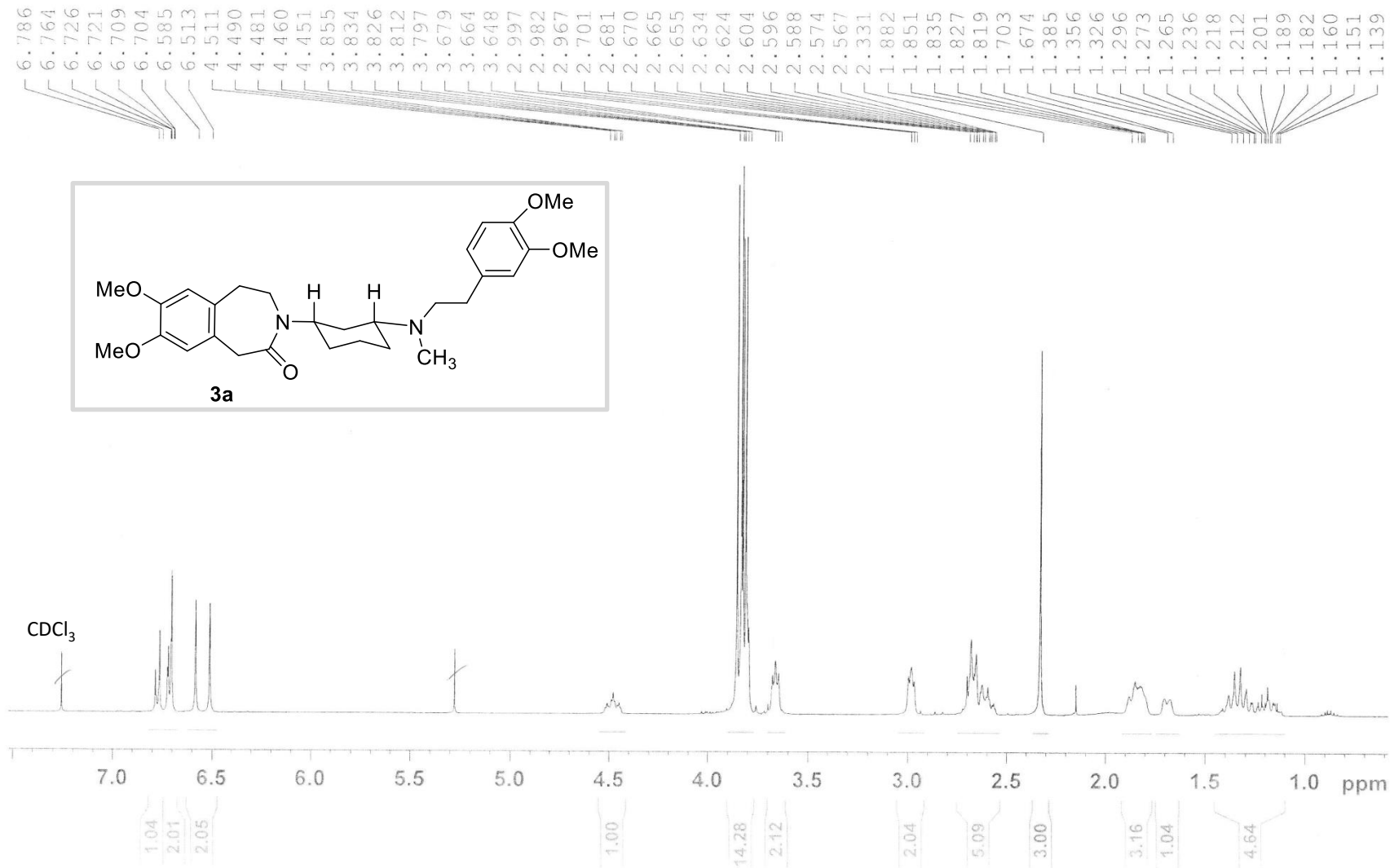
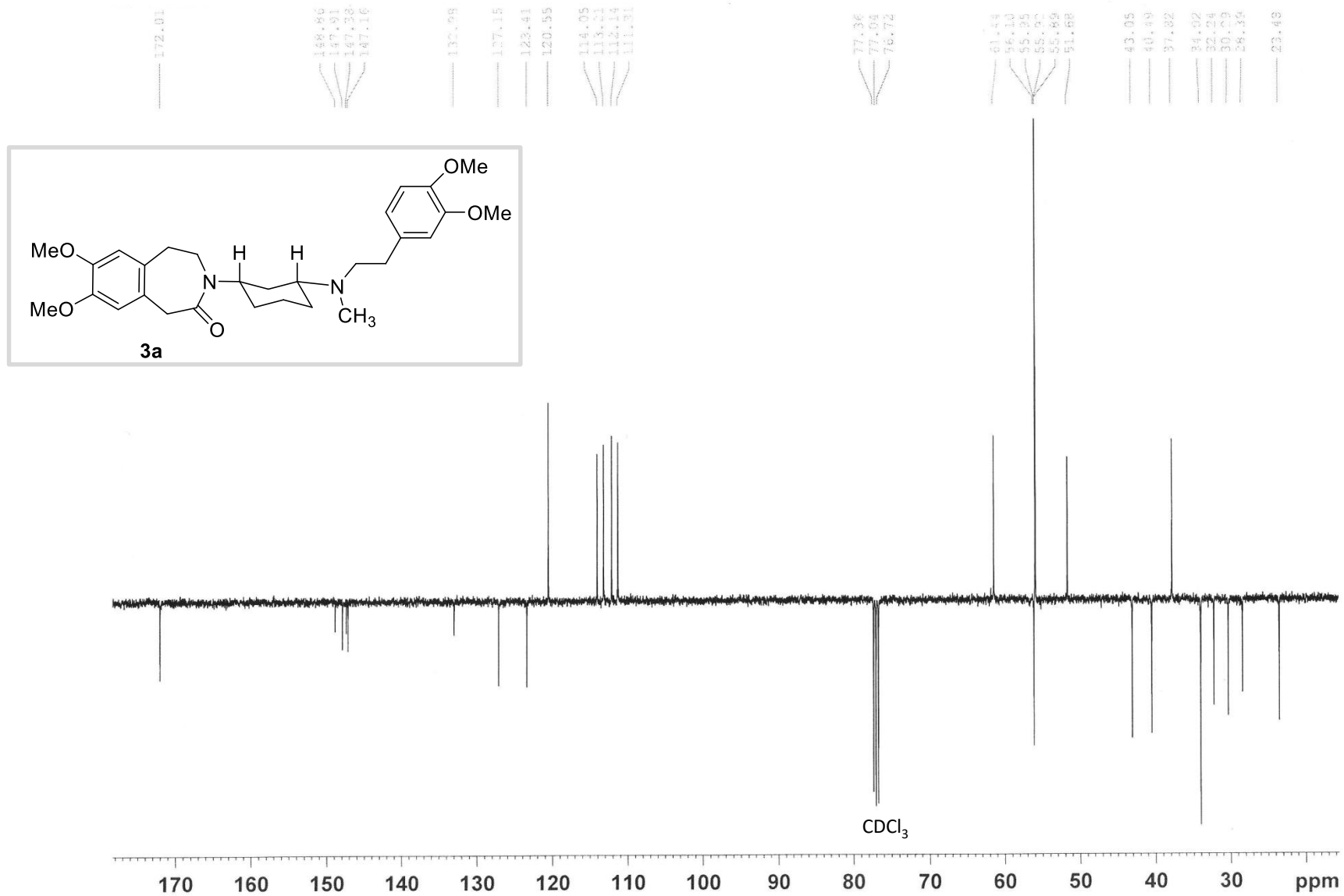
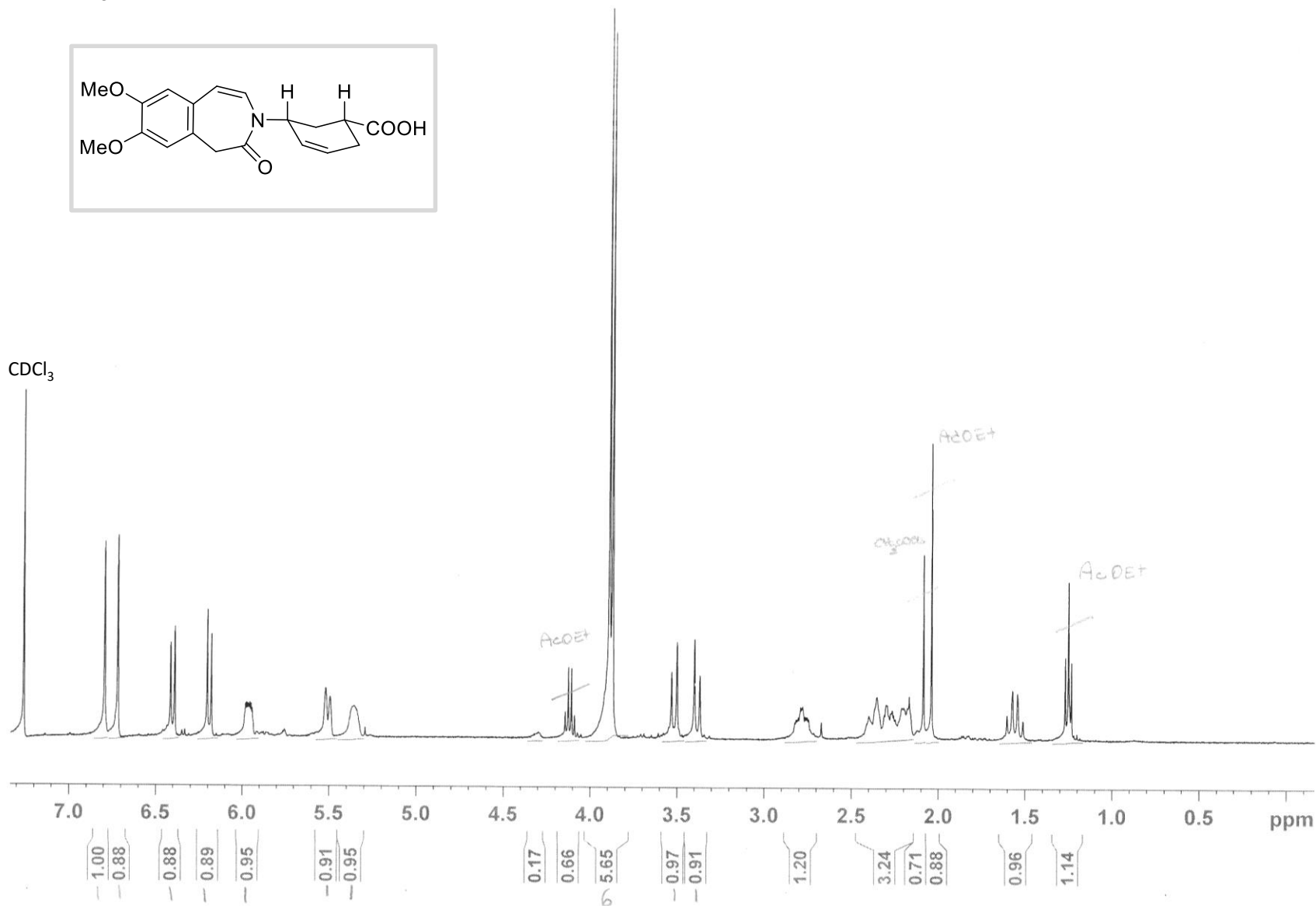
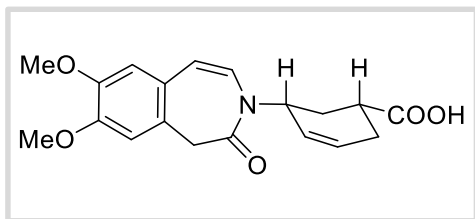


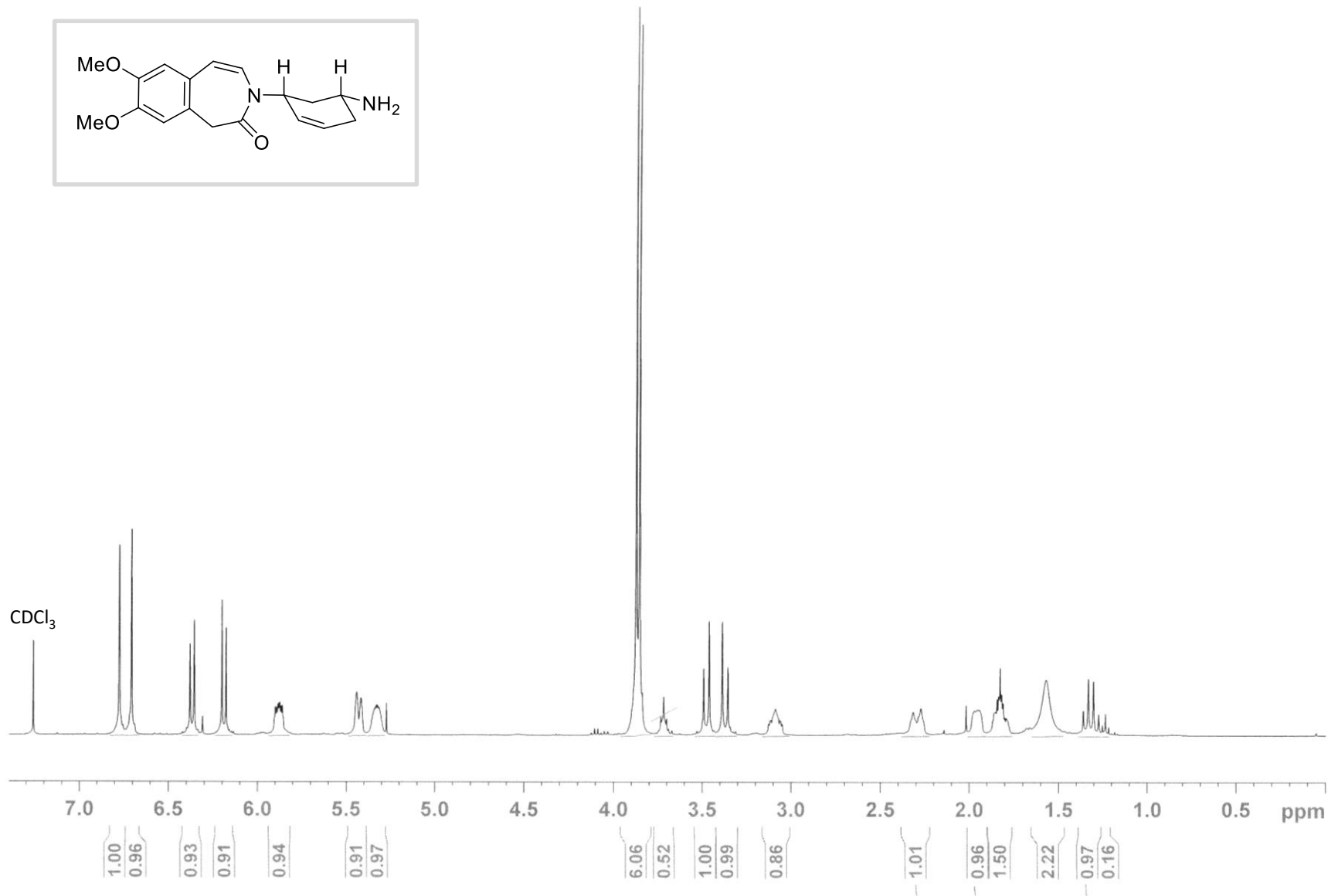
Figure S14:  $^{13}\text{C}$ -MMR of **3a**( $\text{CDCl}_3$ )



**Figure S15:**  $^1\text{H}$ -MMR of *cis* 5-(7,8-dimethoxy-2-oxo-1,2-dihydro-3H-benzo[d]azepin-3-yl)cyclohex-3-ene-1-carboxylic acid ( $\text{CDCl}_3$ )



**Figure S16:**  $^1\text{H}$ -MMR of *cis* 3-(5-aminocyclohex-2-en-1-yl)-7,8-dimethoxy-2,3-dihydro-1H-3-benzazepin-2-one ( $\text{CDCl}_3$ )



**Figure S17:**  $^1\text{H}$ -MMR of *cis* 3-(5-{{2-(3,4-dimethoxyphenyl)ethyl}amino}cyclohex-2-en-1-yl)-7,8-dimethoxy-2,3-dihydro-1H-3-benzazepin-2-one ( $\text{CDCl}_3$ )

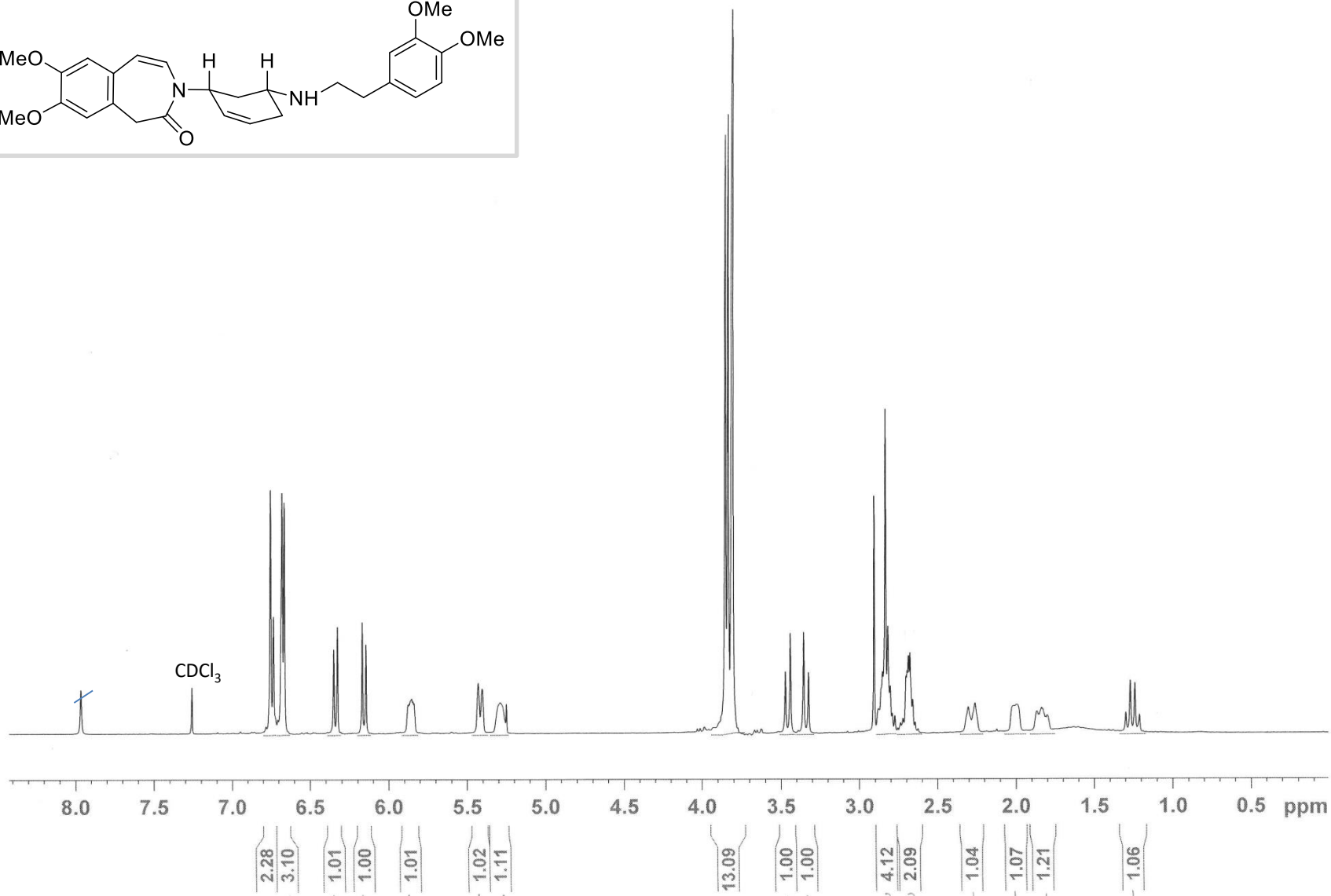
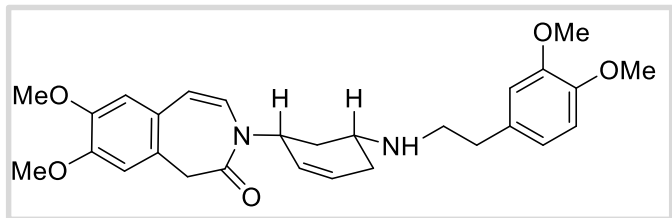
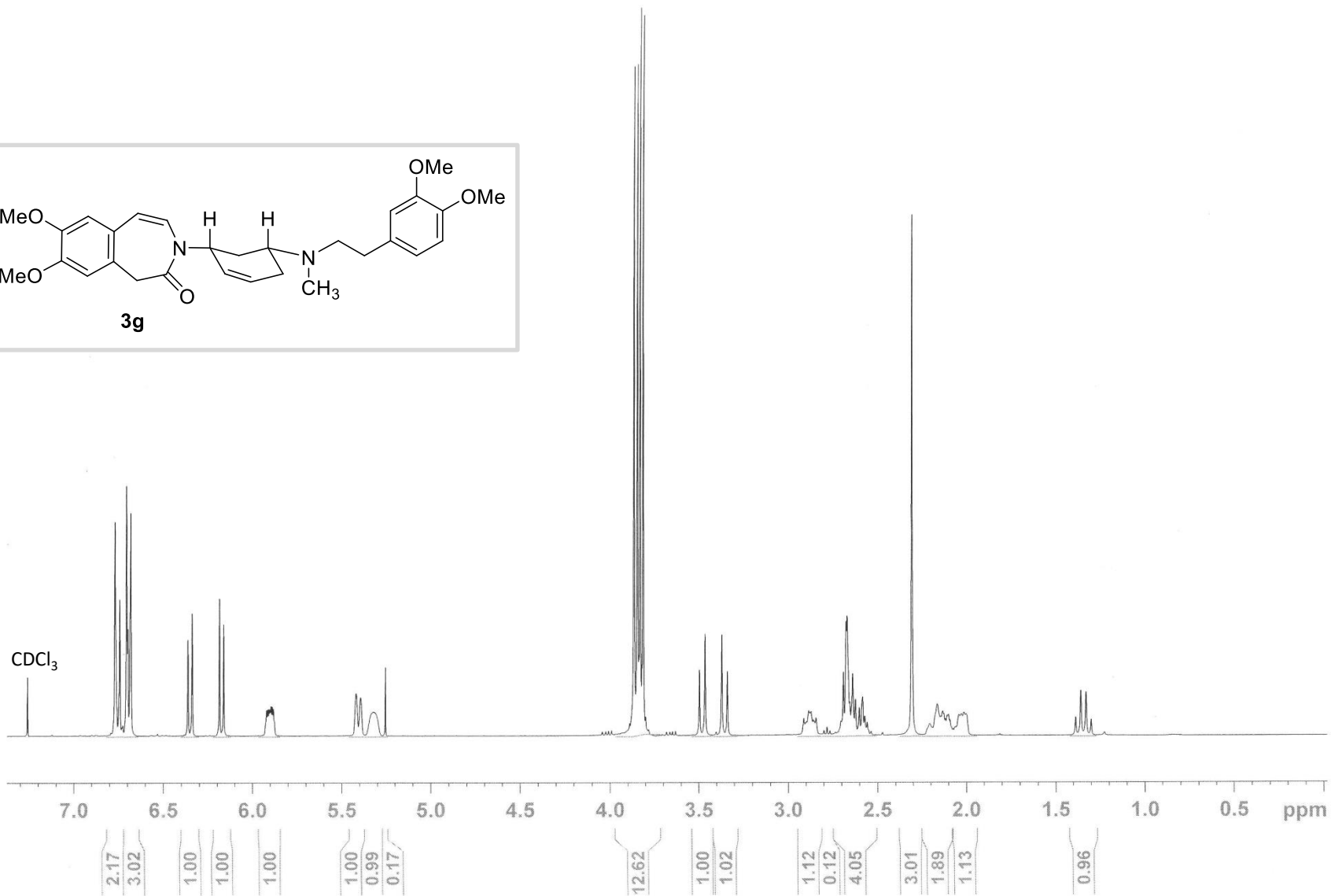
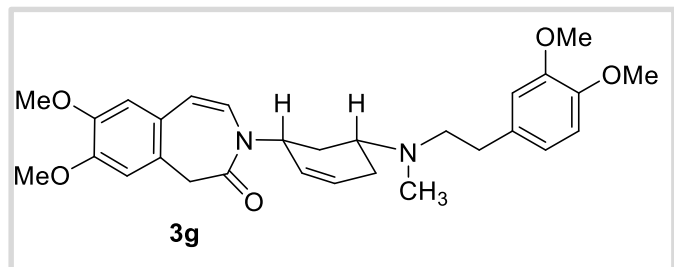
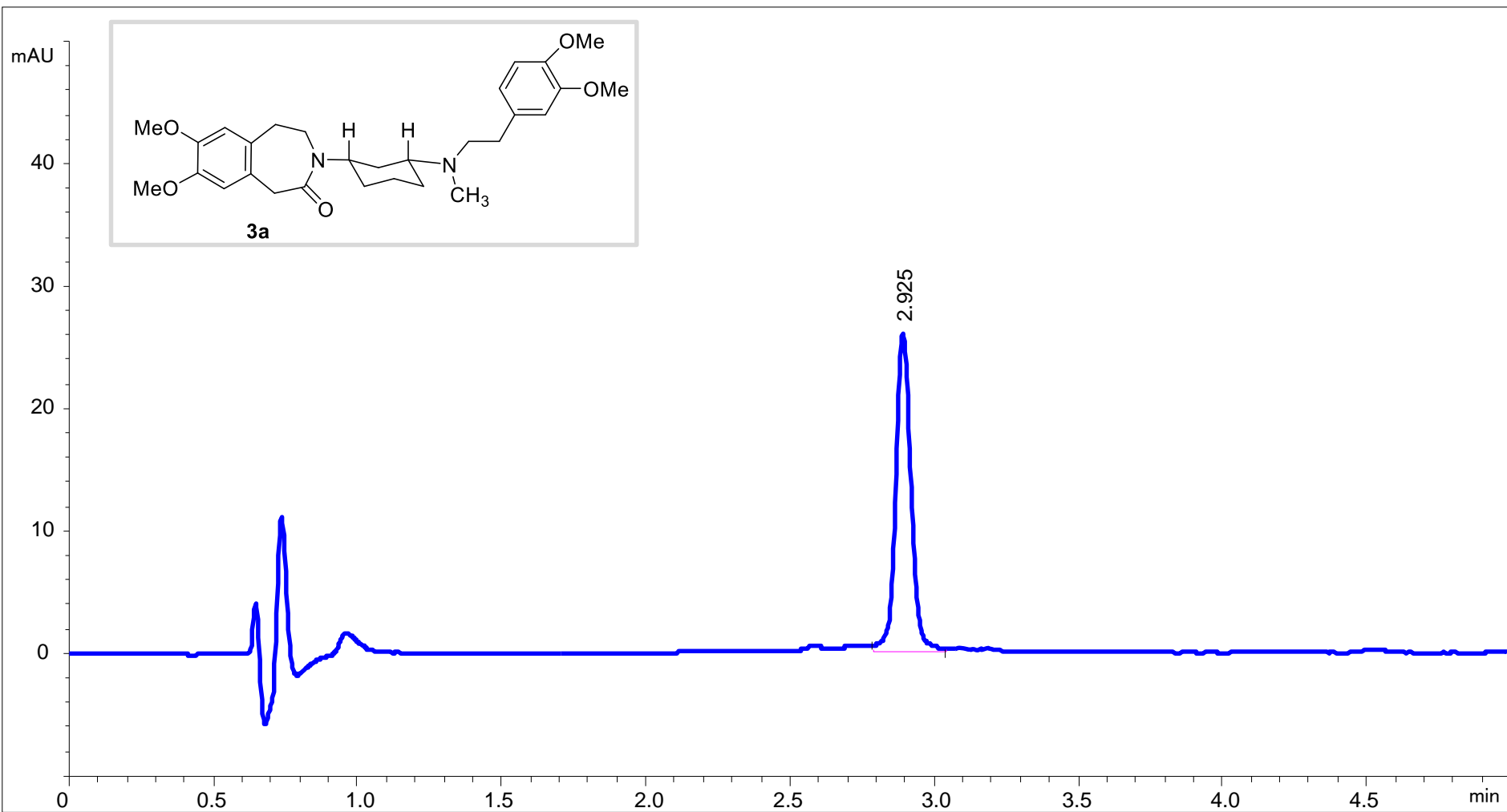


Figure S18:  $^1\text{H}$ -MMR of *cis* **3g** ( $\text{CDCl}_3$ )

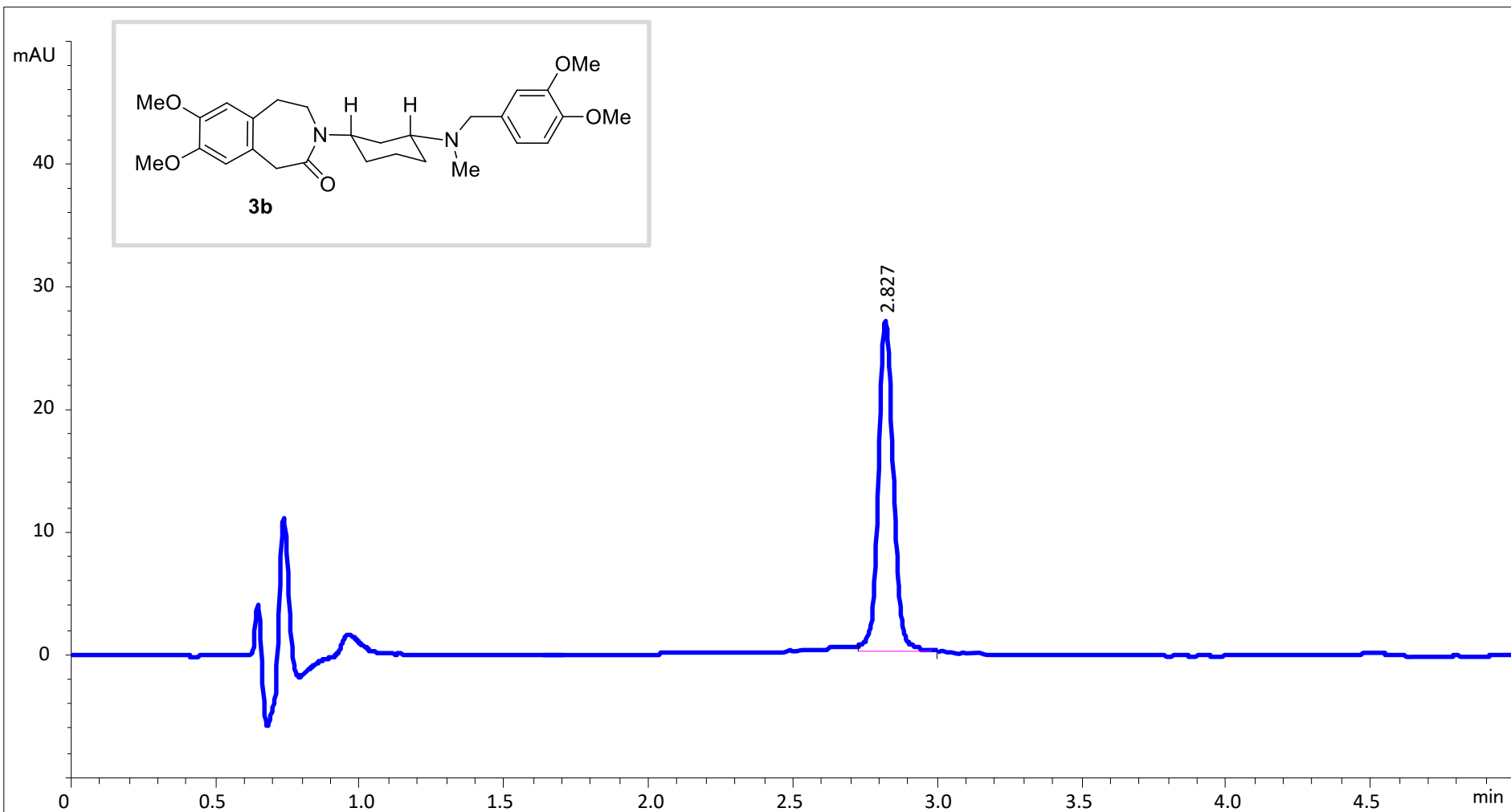




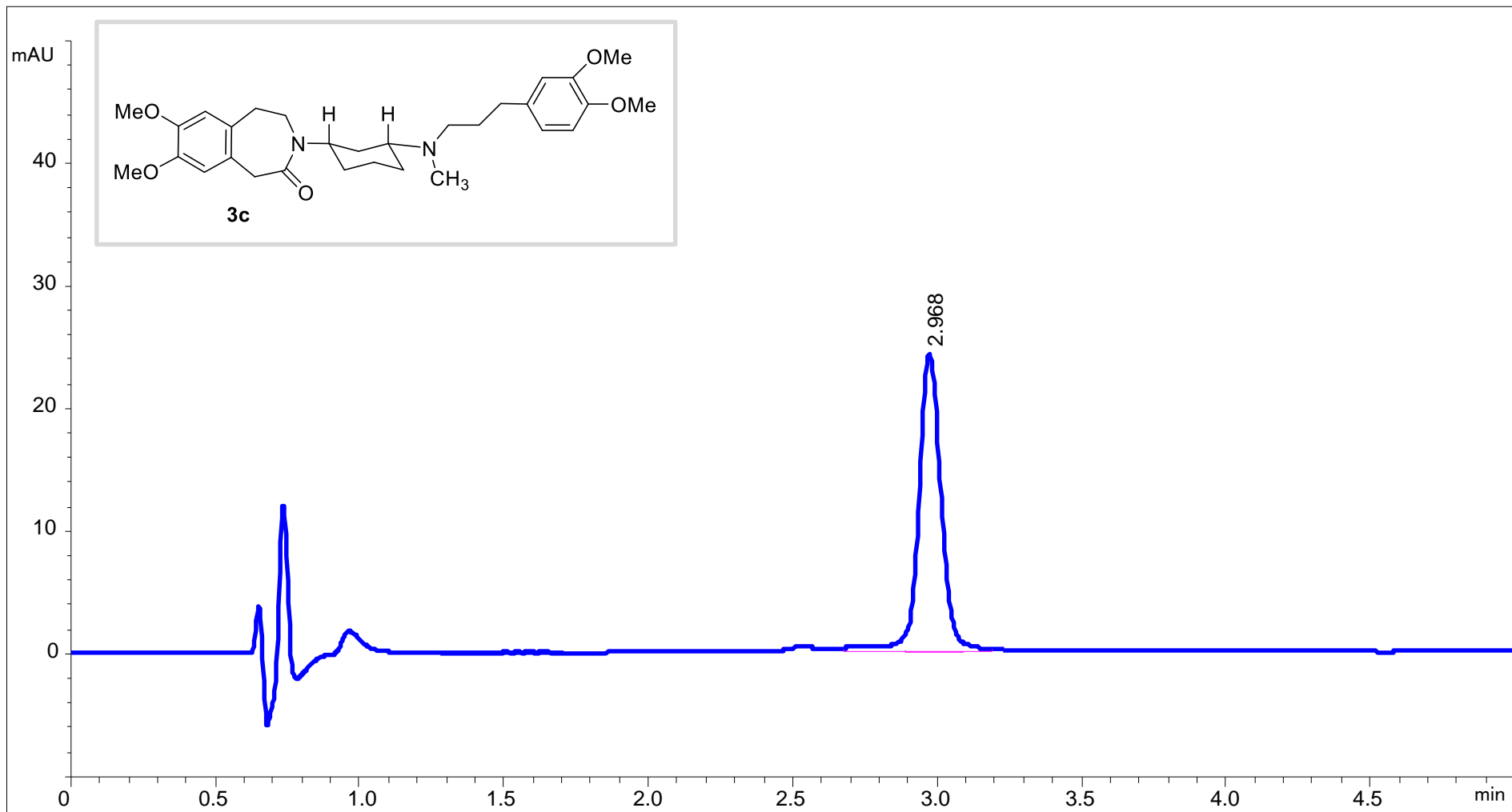
**Figure S19.** LC-DAD analysis of **3a**



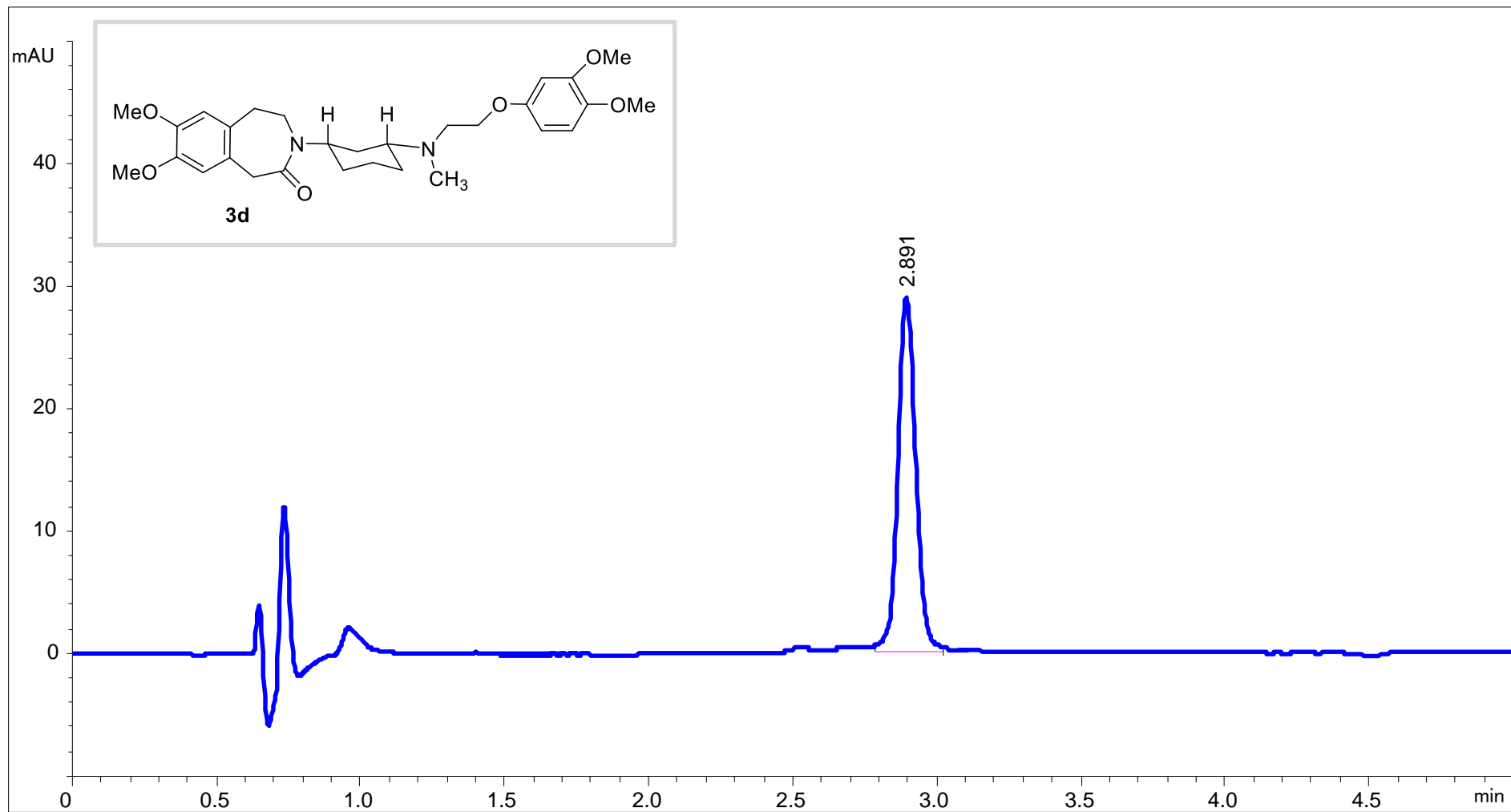
**Figure S20.** LC-DAD analysis of **3b**



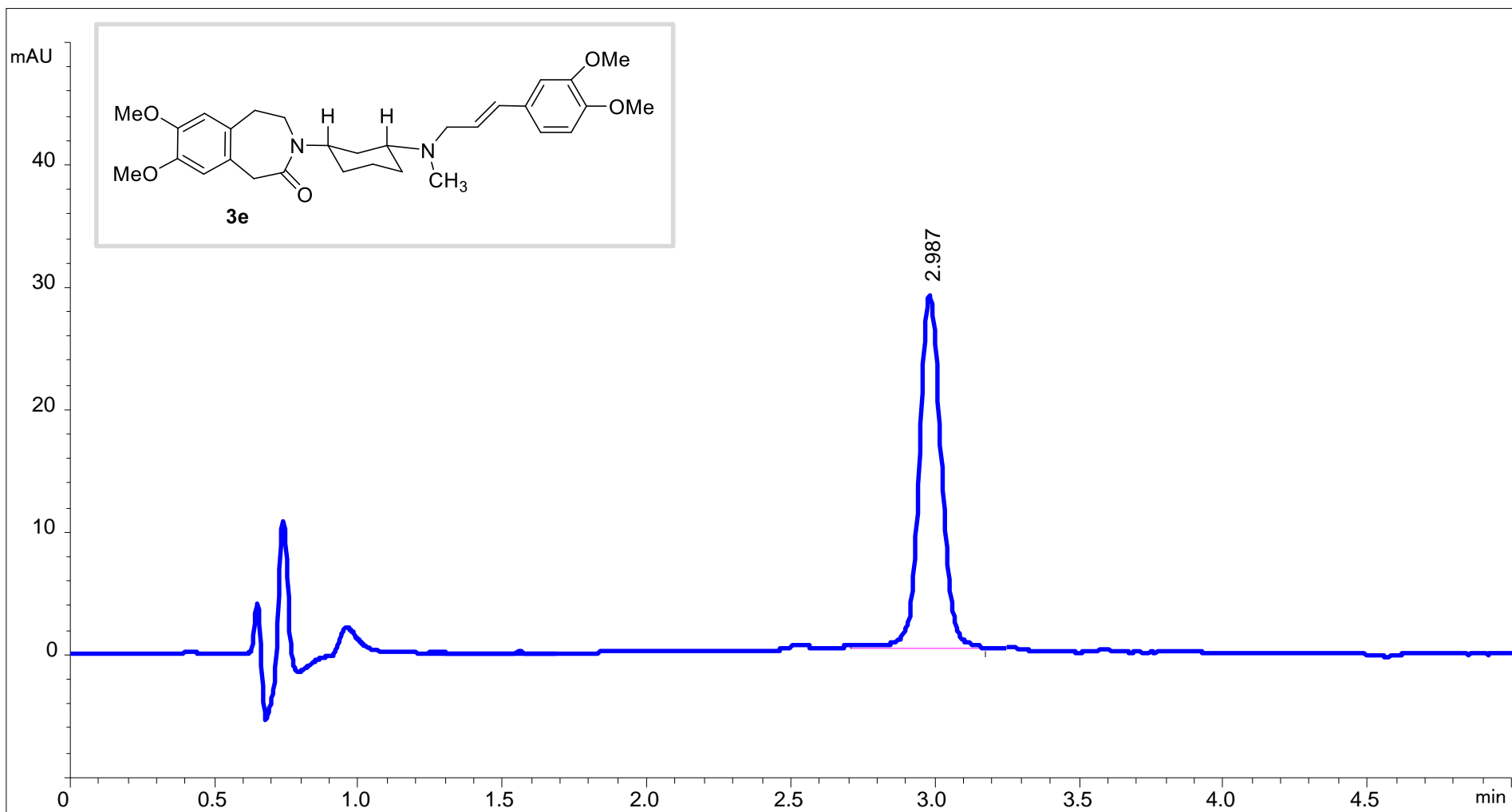
**Figure S21.** LC-DAD analysis of **3c**



**Figure S22.** LC-DAD analysis of **3d**



**Figure S23.** LC-DAD analysis of **3e**



**Figure S24.** LC-DAD analysis of **3f**

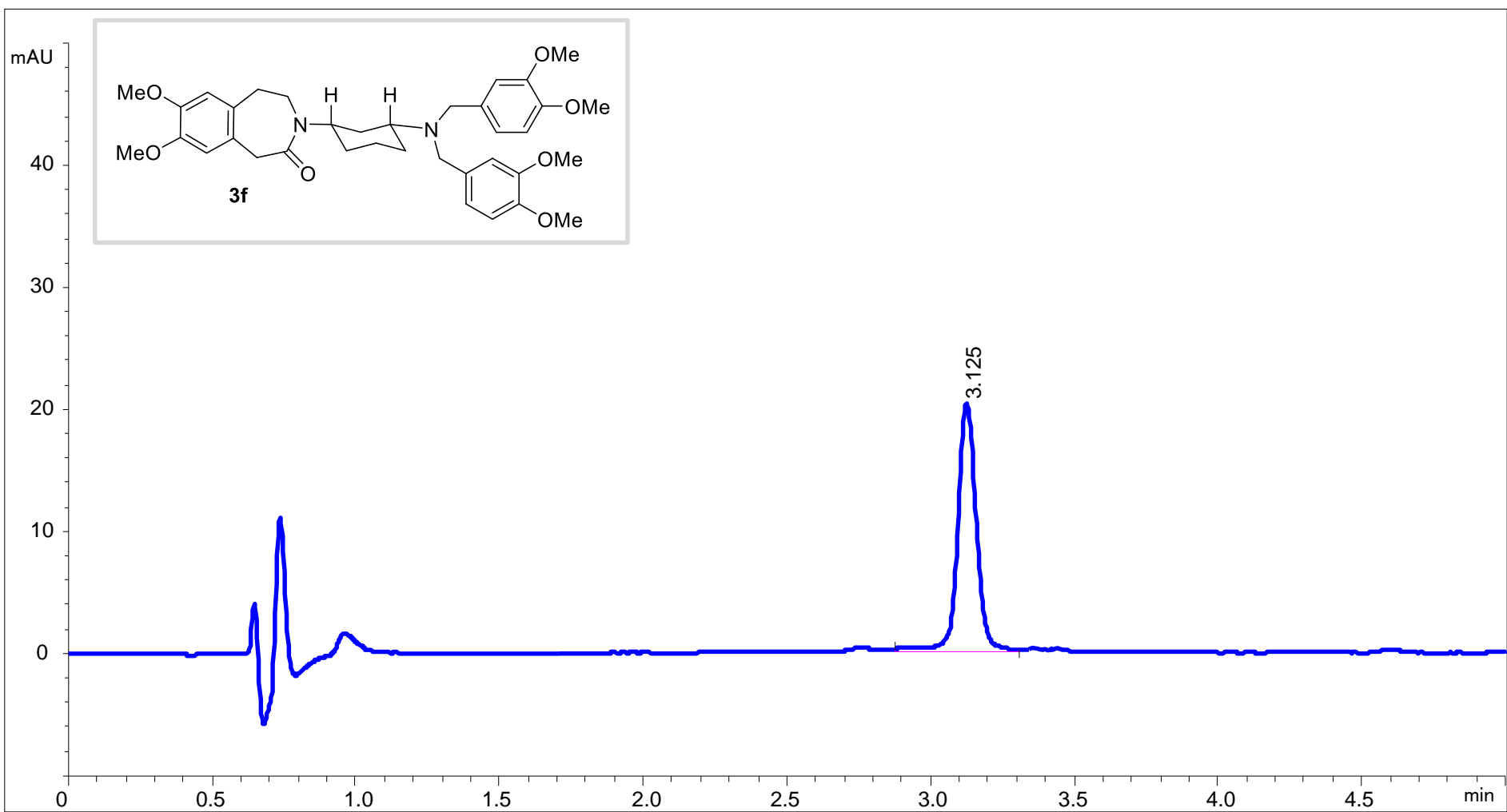


Figure S25. LC-DAD analysis of **3g**

