# Eremophilane sesquiterpenes and diphenyl thioethers from the soil fungus *Penicillium copticola* PSU-RSPG138

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**Figure S1**. $^{1}$H NMR spectrum of penicilleremophilane A (**1**; 300 MHz, $CDCl_3$)

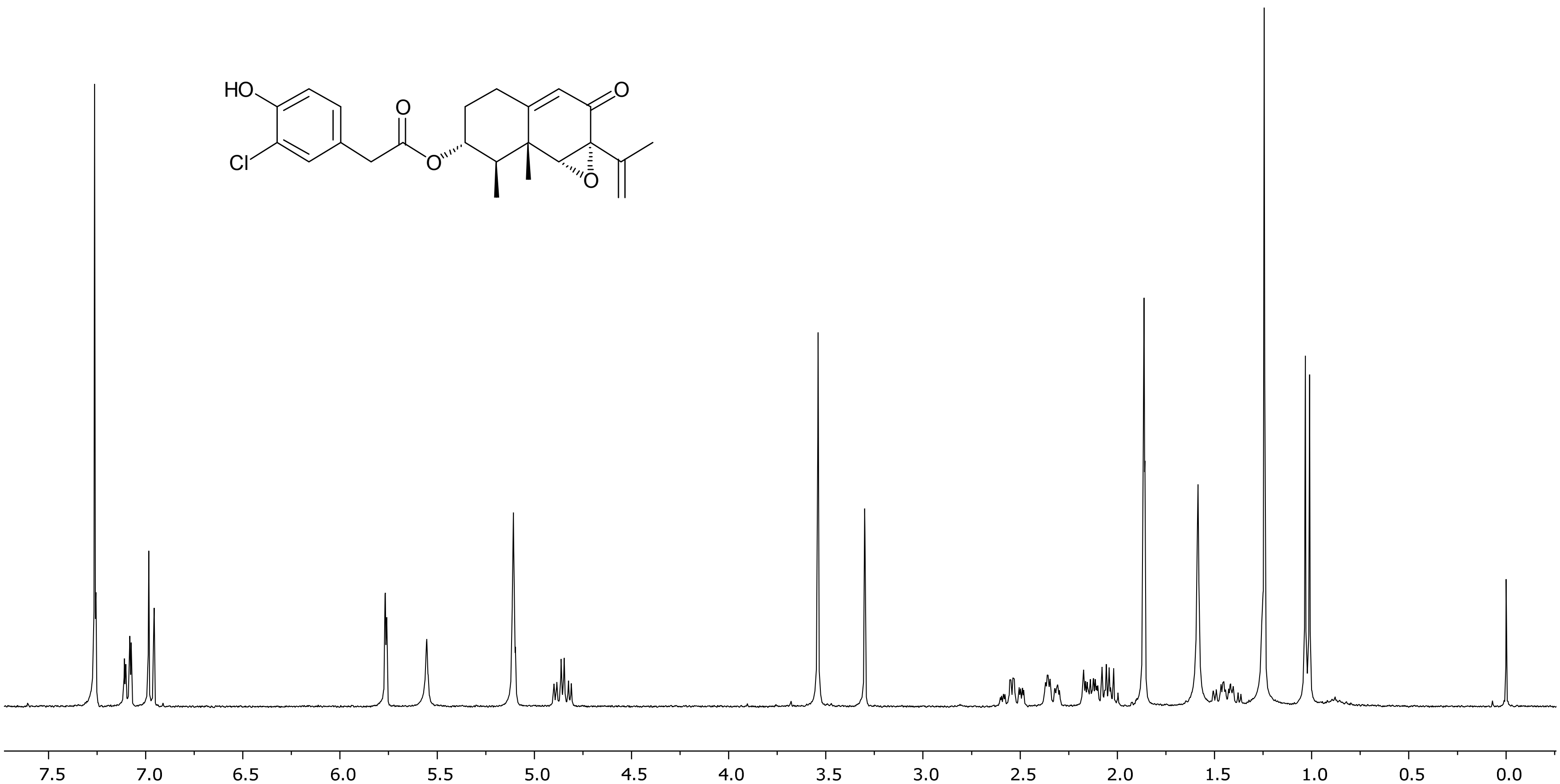

**Figure S2**. $^{13}$C NMR spectrum of penicilleremophilane A (**1**; 75 MHz, $CDCl_3$)

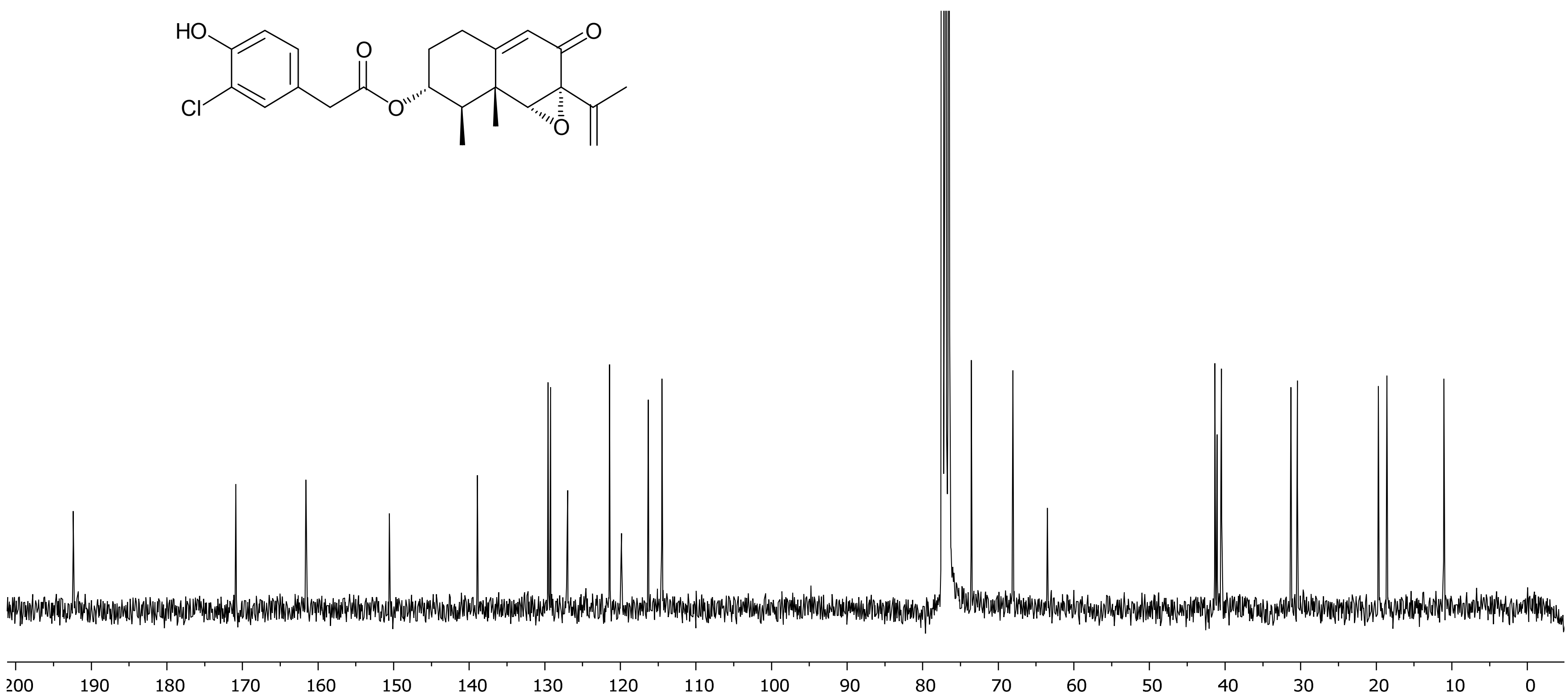

**Figure S3**. $^{1}$H NMR spectrum of penicilleremophilane B (**2**; 300 MHz, $CDCl_3$)

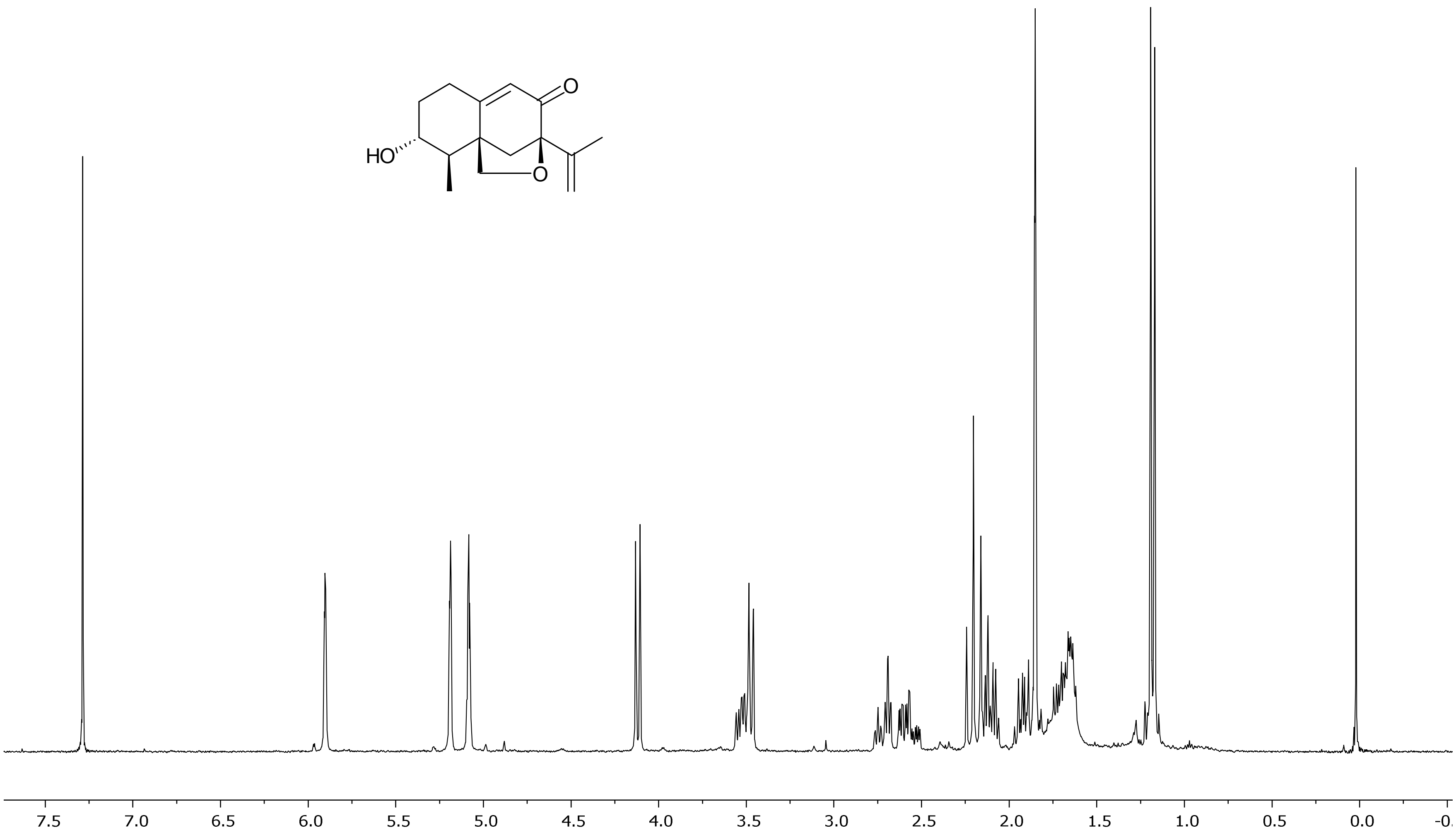

**Figure S4**. $^{13}$C NMR spectrum of penicilleremophilane B (**2**; 75 MHz, $CDCl_3$)

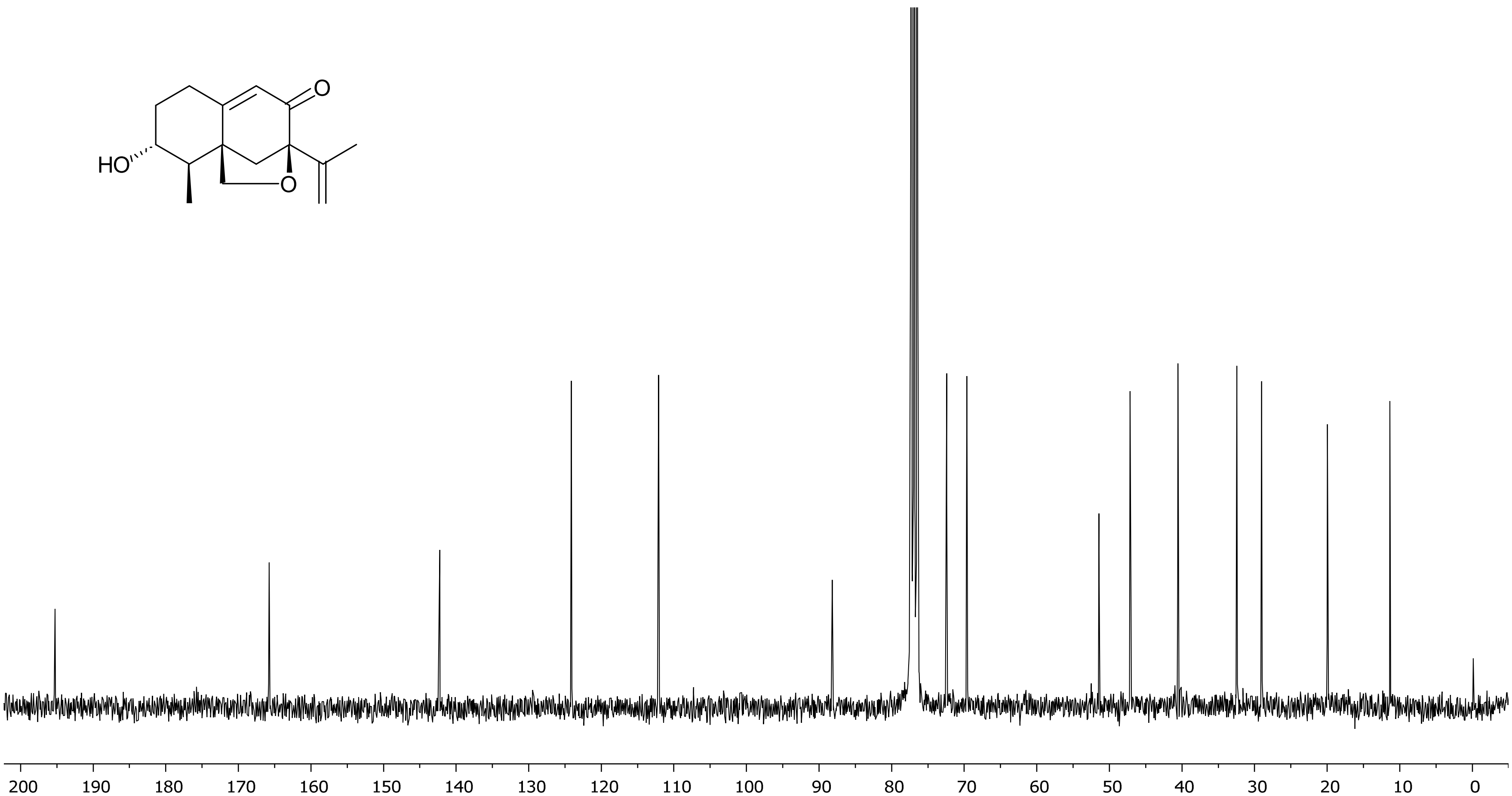

**Figure S5**. $^{1}$H NMR spectrum of penicillithiophenol A (**3**; 300 MHz, $CDCl_3$)

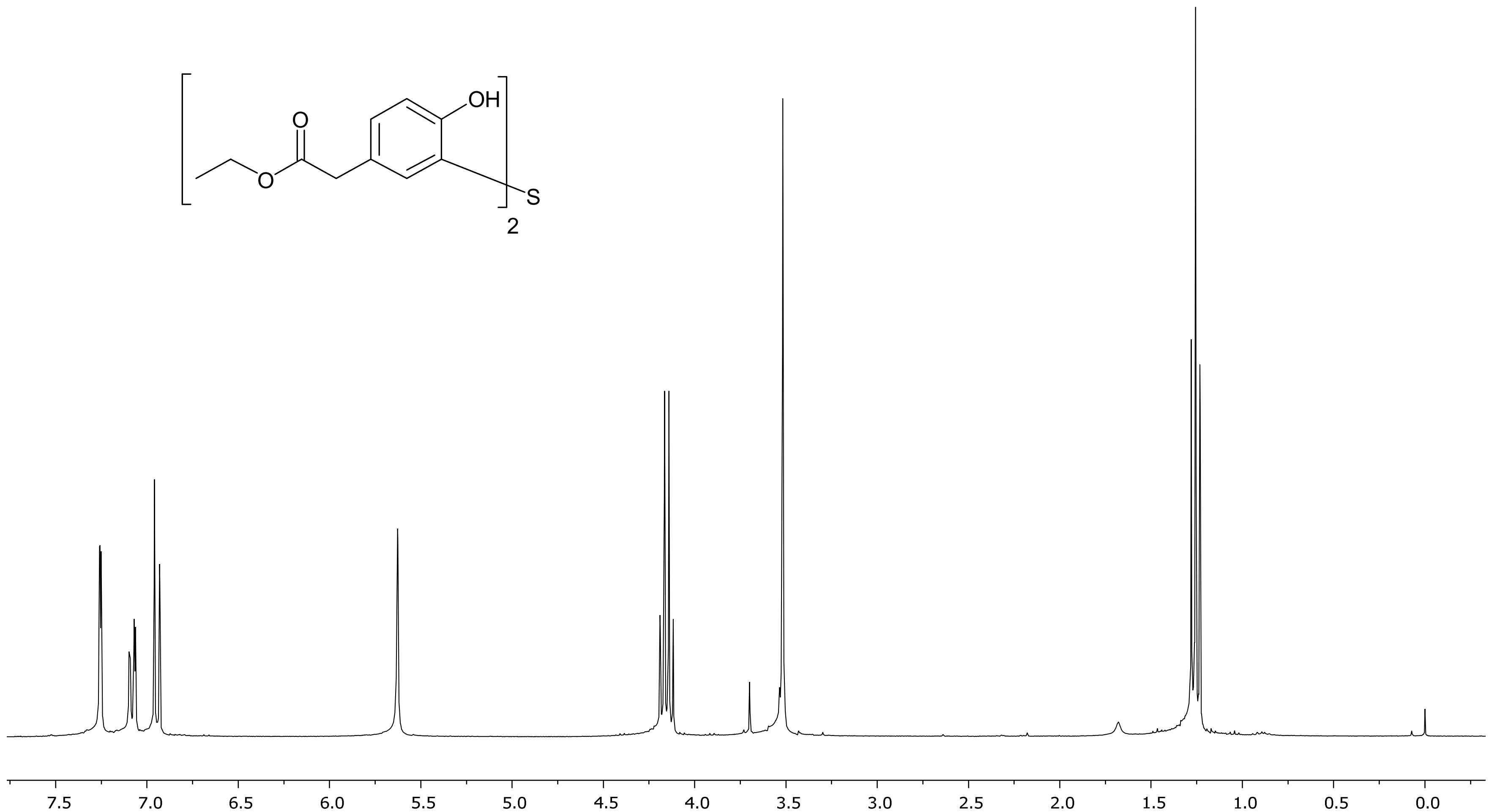

**Figure S6**. $^{13}C$ NMR spectrum of penicillithiophenol A (**3**; 75 MHz, $CDCl_3$)

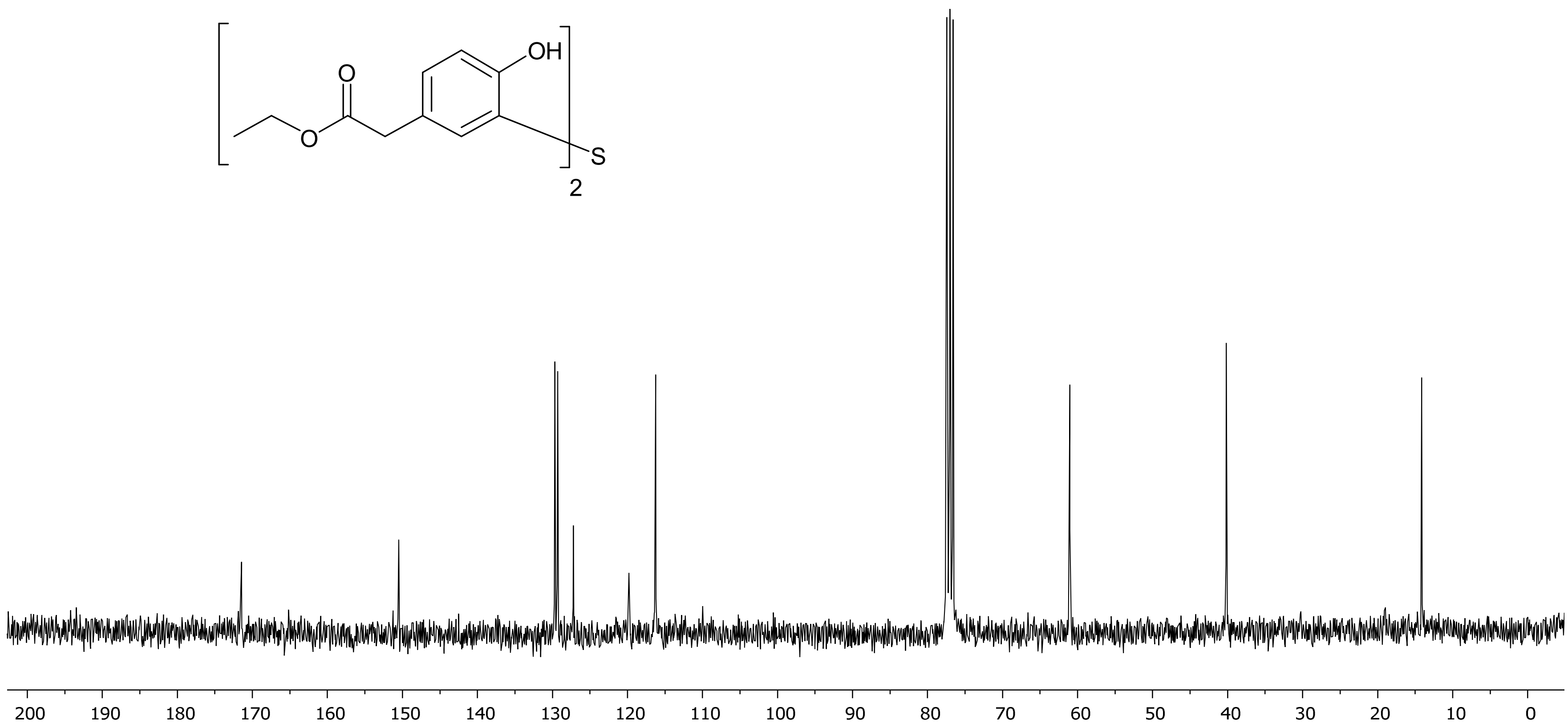

**Figure S7**. $^{1}H$ NMR spectrum of penicillithiophenol B (**4**; 300 MHz, $CDCl_3$)

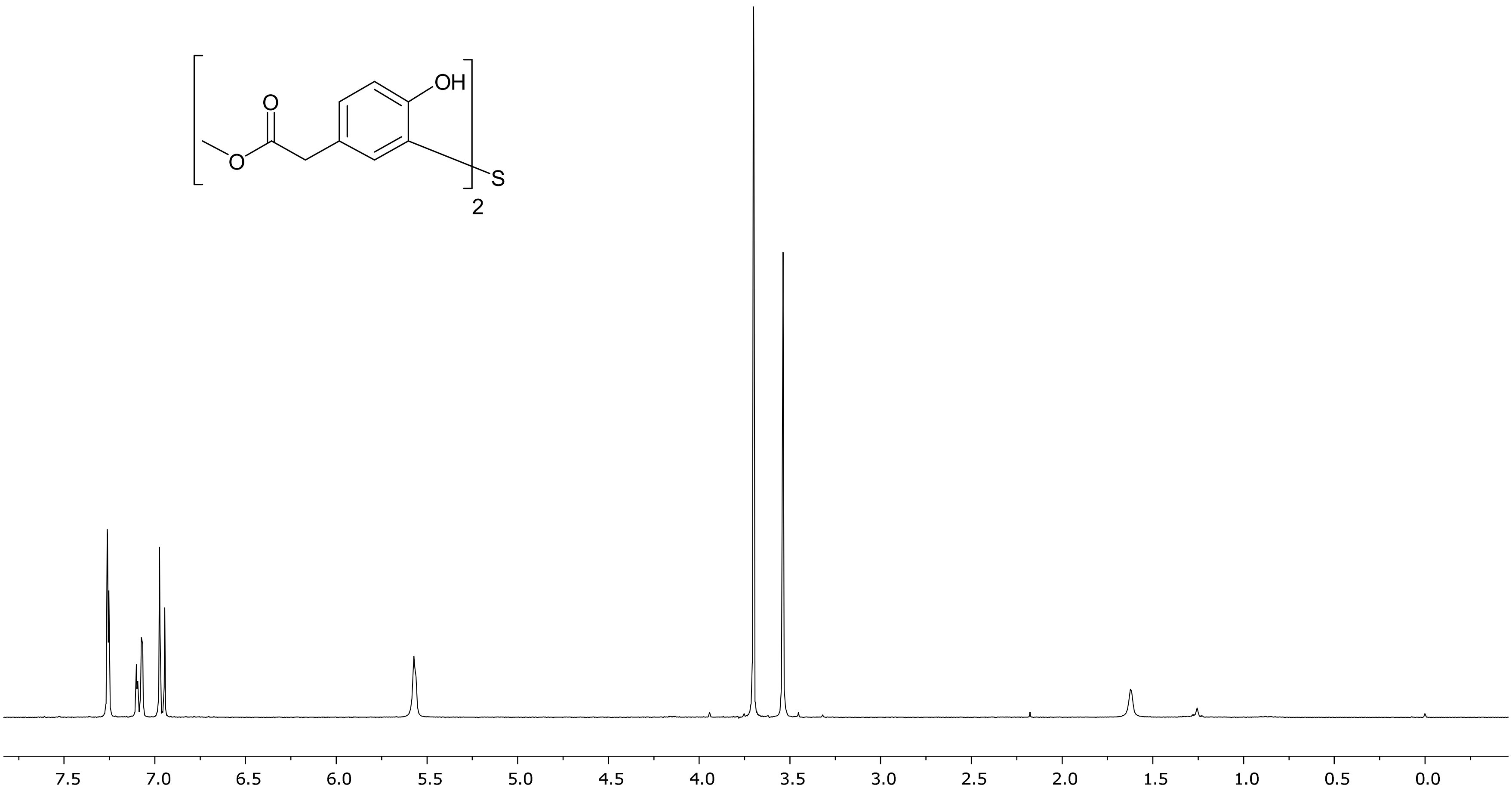

**Figure S8**. $^{13}$C NMR spectrum of penicillithiophenol B (**4**; 75 MHz, $CDCl_3$)

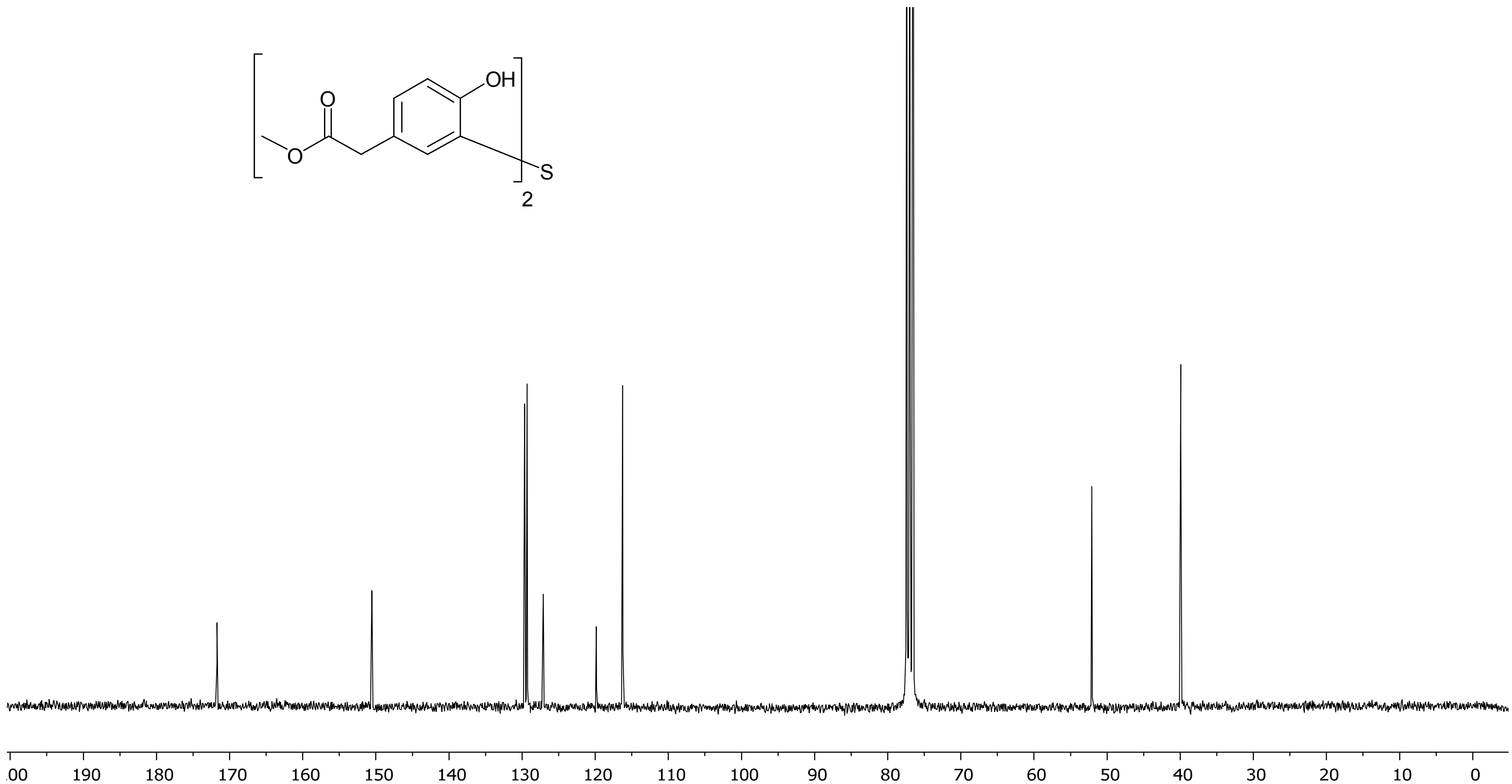

**Figure S9**. $^{1}$H NMR spectrum of the 8-epimer of **8** (**9**; 300 MHz, $CDCl_3$)

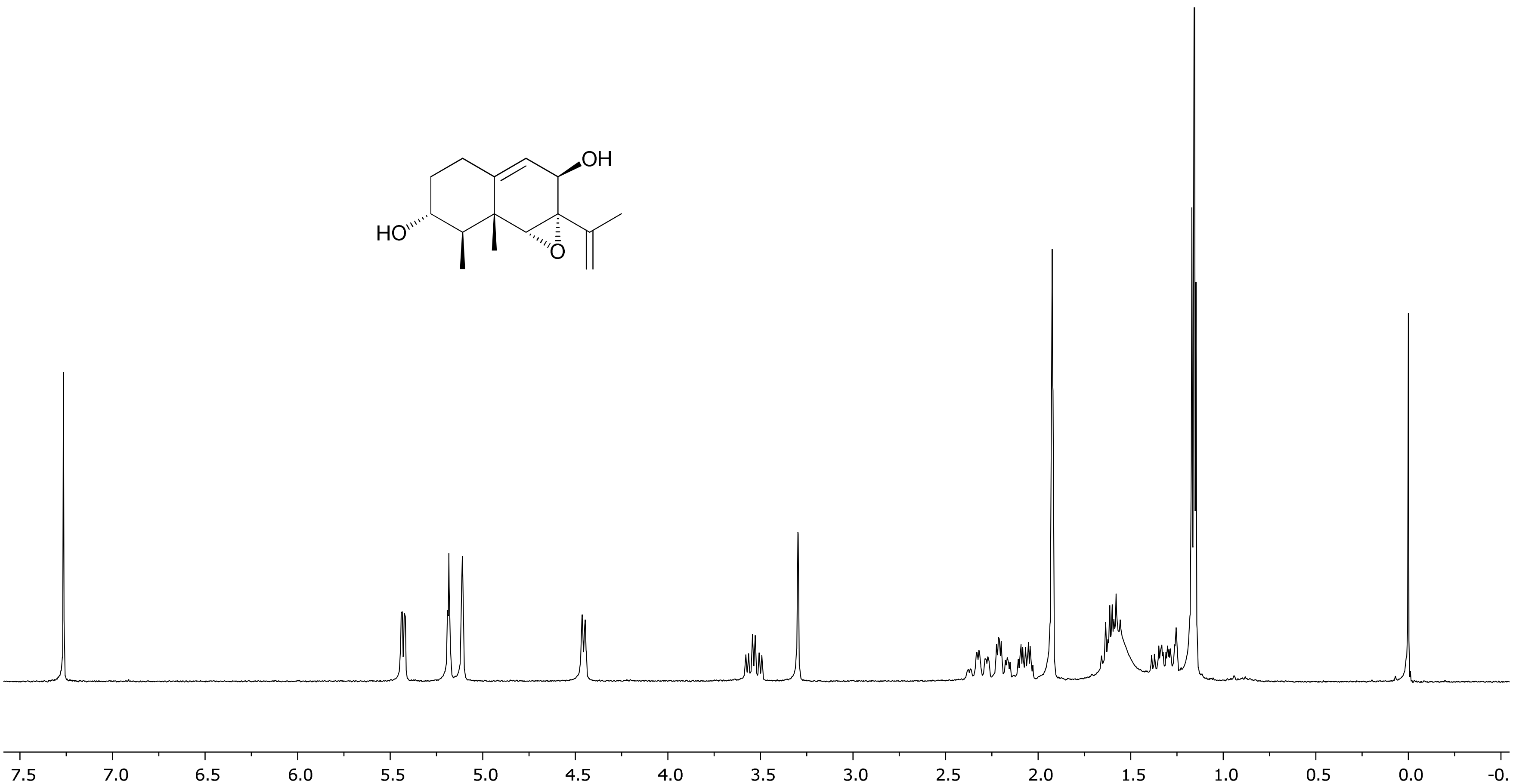

**Figure S10**. $^{13}$C NMR spectrum the of 8-epimer of **8** (**9**; 75 MHz, $CDCl_3$)

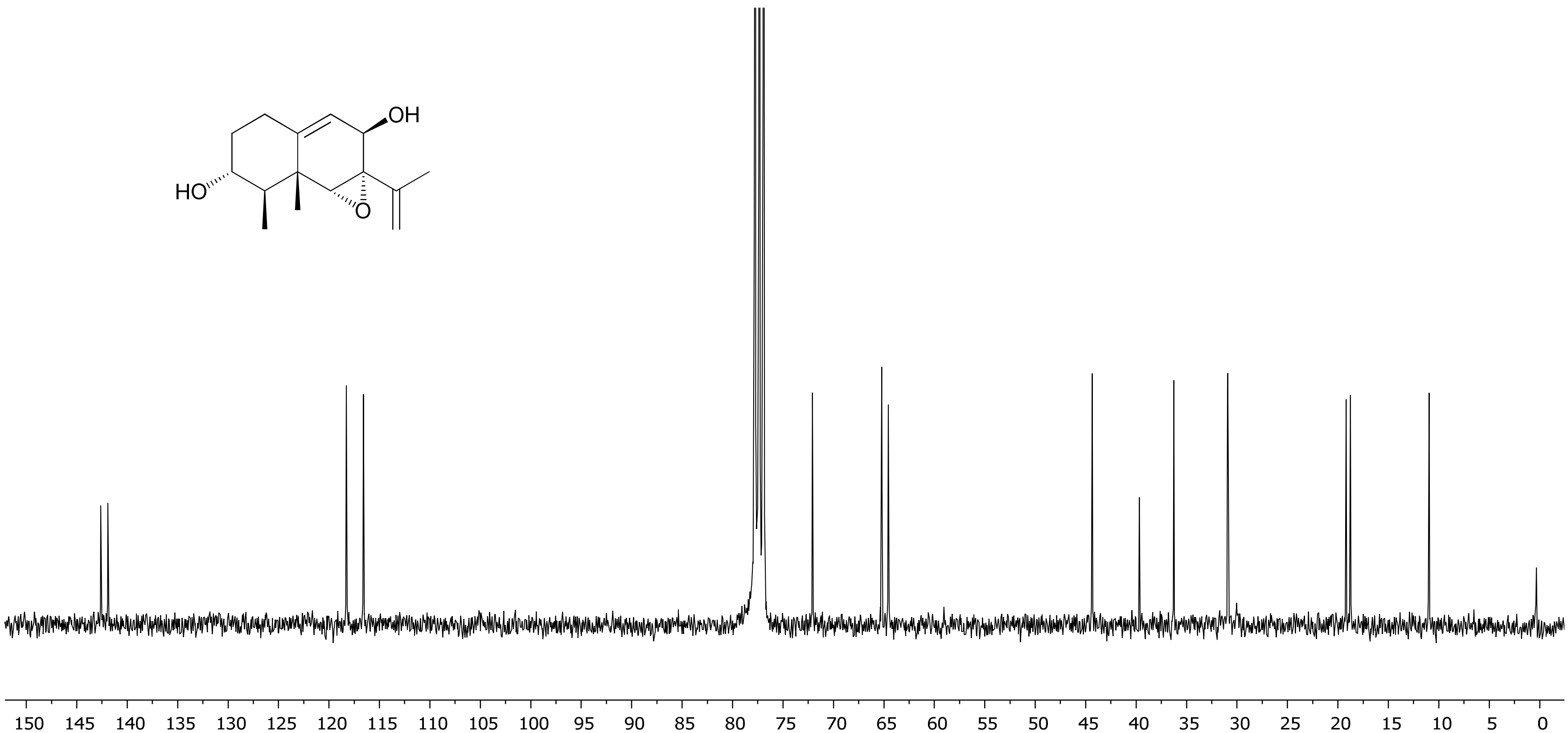

**Figure S11**. $^1$H NMR spectrum of 7-hydroxy-4a,5-dimethyl-3-prop-1-en-2-yl-3,4,5,6,7,8-hexahydronaphthalen-2-one (**14**; 300 MHz, $CDCl_3$)

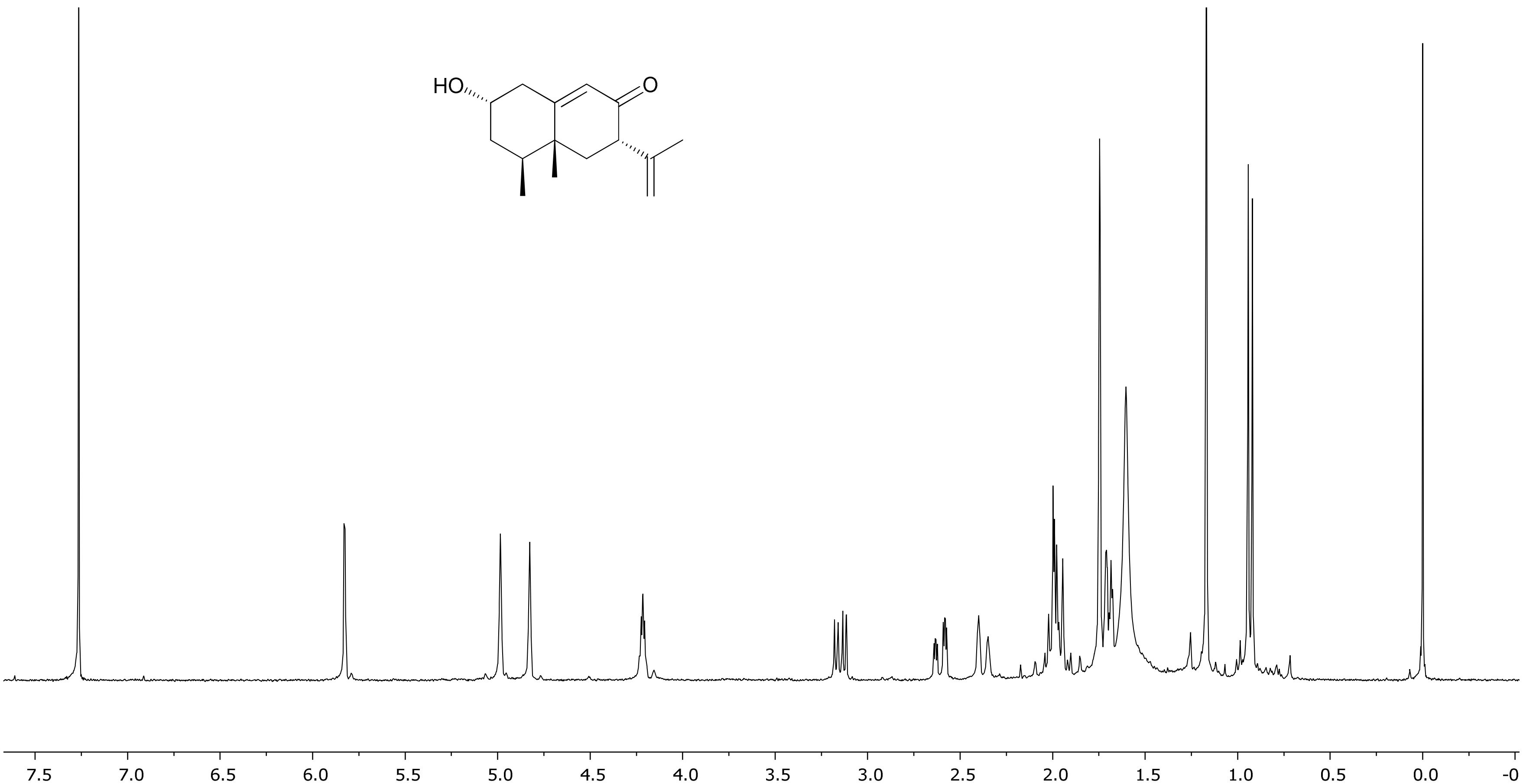

**Figure S12**. $^{13}$C NMR spectrum of 7-hydroxy-4a,5-dimethyl-3-prop-1-en-2-yl-3,4,5,6,7,8-hexahydronaphthalen-2-one (**14**; 75 MHz, $CDCl_3$)

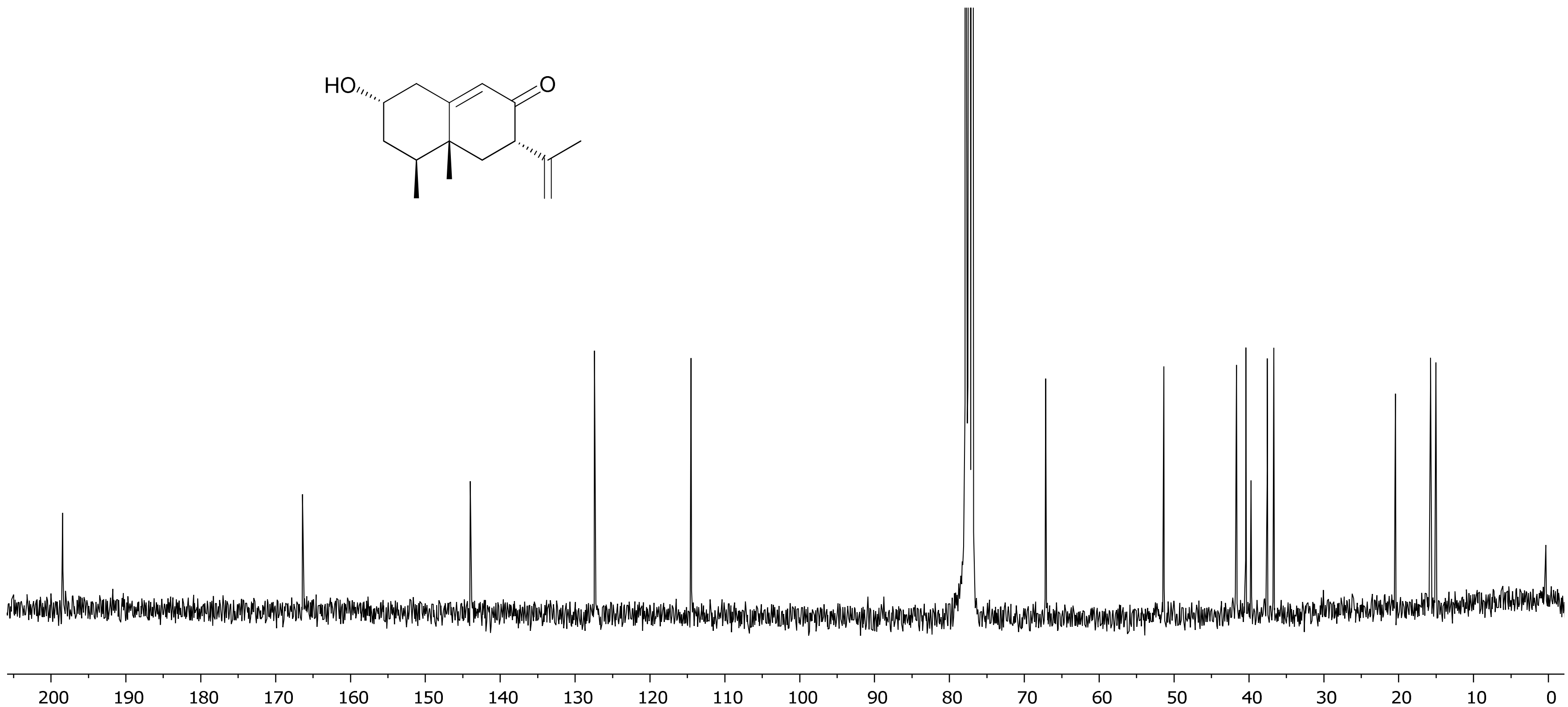

**Table S1** Optical rotations of known compounds **7**, **8**, **10-13** and **15-20**

| Compounds | Observed optical rotation | Lit. optical rotation[ref] |
|---|---|---|
| **7** | $[\alpha]_D^{25}$ +179.5 (*c* 1.0, $CHCl_3$) | $[\alpha]_D$ +214 (*c* 1.0, $CHCl_3$)[8] |
| **8** | $[\alpha]_D^{24}$ +102 (*c* 0.8, MeOH) | $[\alpha]_D^{24}$ +104 (*c* 0.8, MeOH)[9] |
| **10** | $[\alpha]_D^{27}$ +235 (*c* 0.65, MeOH) | $[\alpha]_D^{27}$ +243 (*c* 0.65, MeOH)[11] |
| **11** | $[\alpha]_D^{24}$ +189.5 (*c* 0.35, $CHCl_3$) | $[\alpha]_D$ +186 (*c* 0.35, $CHCl_3$)[12] |
| **12** | $[\alpha]_D^{20}$ +121.0 (*c* 0.8, $CHCl_3$) | $[\alpha]_D^{20}$ + 130 (*c* 0.82, $CHCl_3$)[9] |
| **13** | $[\alpha]_D^{27}$ -42.6 (*c* 0.1, $CHCl_3$) | $[\alpha]_D^{27}$ -47 (*c* 0.1, $CHCl_3$)[13] |
| **15** | $[\alpha]_D^{27}$ +109.8 (*c* 0.8, $CHCl_3$) | - |
| **16** | $[\alpha]_D^{27}$ +3.0 (*c* 0.4, $CHCl_3$) | $[\alpha]_D^{27}$ +2.2 (*c* 0.5, $CHCl_3$)[13] |
| **17** | $[\alpha]_D^{27}$ +10.3 (c 0.4, $CHCl_3$) | - |
| **18** | $[\alpha]_D^{27}$ +47.1(c 0.8, $CHCl_3$) | - |
| **19** | $[\alpha]_D^{24}$ +82 (*c* 0.02, $CHCl_3$) | aristolochene: $[\alpha]_D^{24}$ +79.4 (*c* 0.017, $CHCl_3$).[22] |
| **20** | $[\alpha]_D^{24}$ +109.7 (*c* 0.9, $CHCl_3$) | $[\alpha]_D$ +113 (*c* 0.9, $CHCl_3$).[18] |

**Table S2** Yields of the isolated compounds

| Broth extract | | | | Mycelial extract | |
|---|---|---|---|---|---|
| Compound | % yield | Compound | % yield | Compound | % yield |
| **1** | 0.06 | **10** | 0.06 | **5** | 5.32 |
| **2** | 0.063 | **11** | 0.066 | **7** | 21.06 |
| **3** | 0.19 | **12** | 17.83 | **8** | 6.81 |
| **4** | 0.24 | **13** | 0.40 | **12** | 7.06 |
| **5** | 1.54 | **14** | 0.04 | **16** | 6.38 |
| **6** | 0.016 | **15** | 0.38 | **19** | 0.26 |
| **7** | 29.60 | **16** | 0.14 | **20** | 0.30 |
| **8** | 4.20 | **17** | 0.02 | | |
| **9** | 0.07 | **18** | 0.014 | | |