

# Supporting information for

## Synthesis and investigation of pinane-based chiral tridentate ligands in the asymmetric addition of diethylzinc to aldehydes

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<sup>2</sup> MTA-SZTE Stereochemistry Research Group, Hungarian Academy of Sciences, H-6720 Szeged, Eötvös utca 6, Hungary

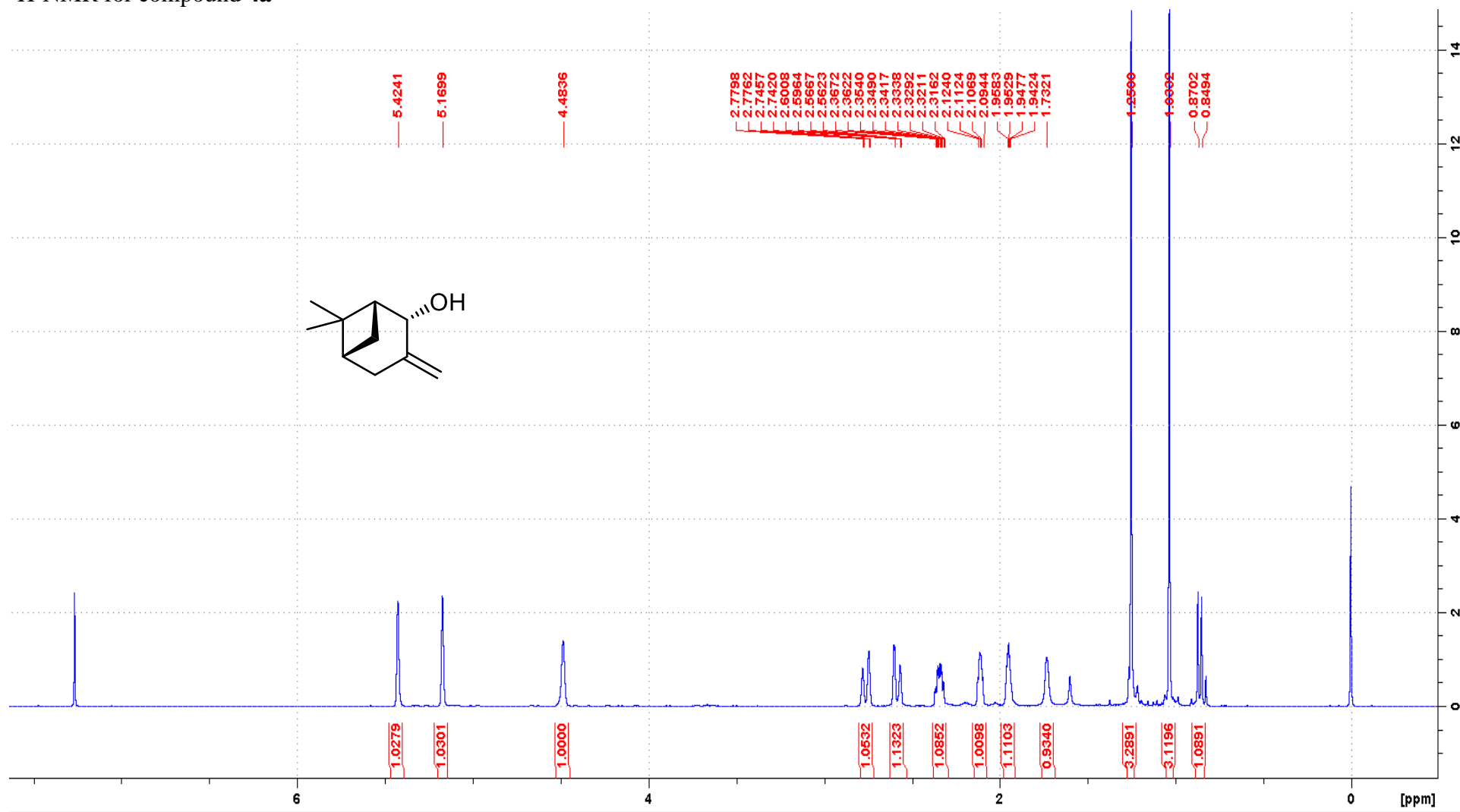
<sup>3</sup> Interdisciplinary Centre of Natural Products, University of Szeged, H-6720 Szeged, Eötvös utca 6, Hungary

\* Correspondence: szakonyi@pharm.u-szeged.hu; Tel.: +36-62-546809; Fax: +36-62-545705

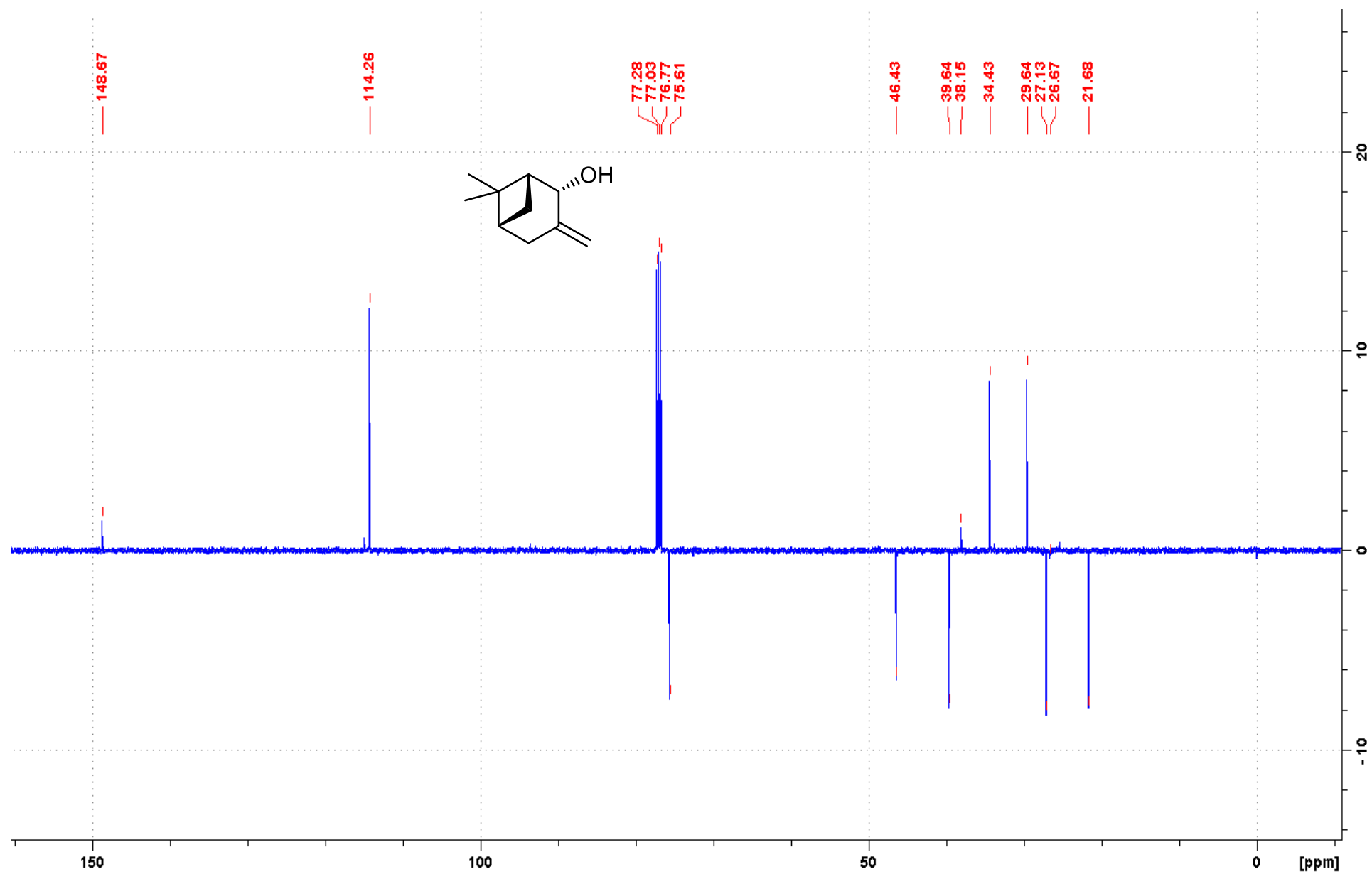
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$^1\text{H}$ , $^{13}\text{C}$ , HSQC, HMBC and NOESY NMR spectra of new compounds	S3 – S83
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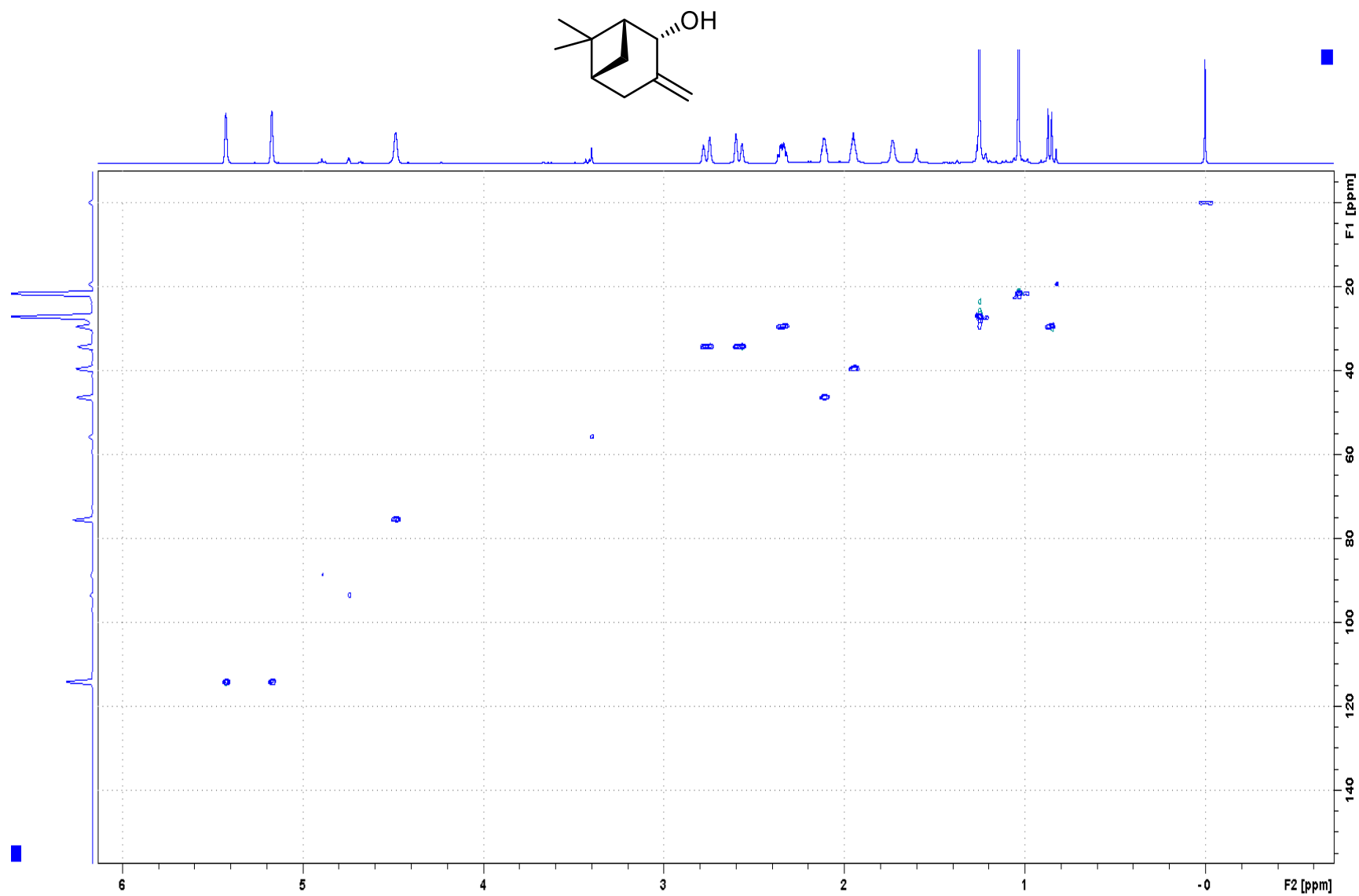
<sup>1</sup>H-NMR for compound **4a**



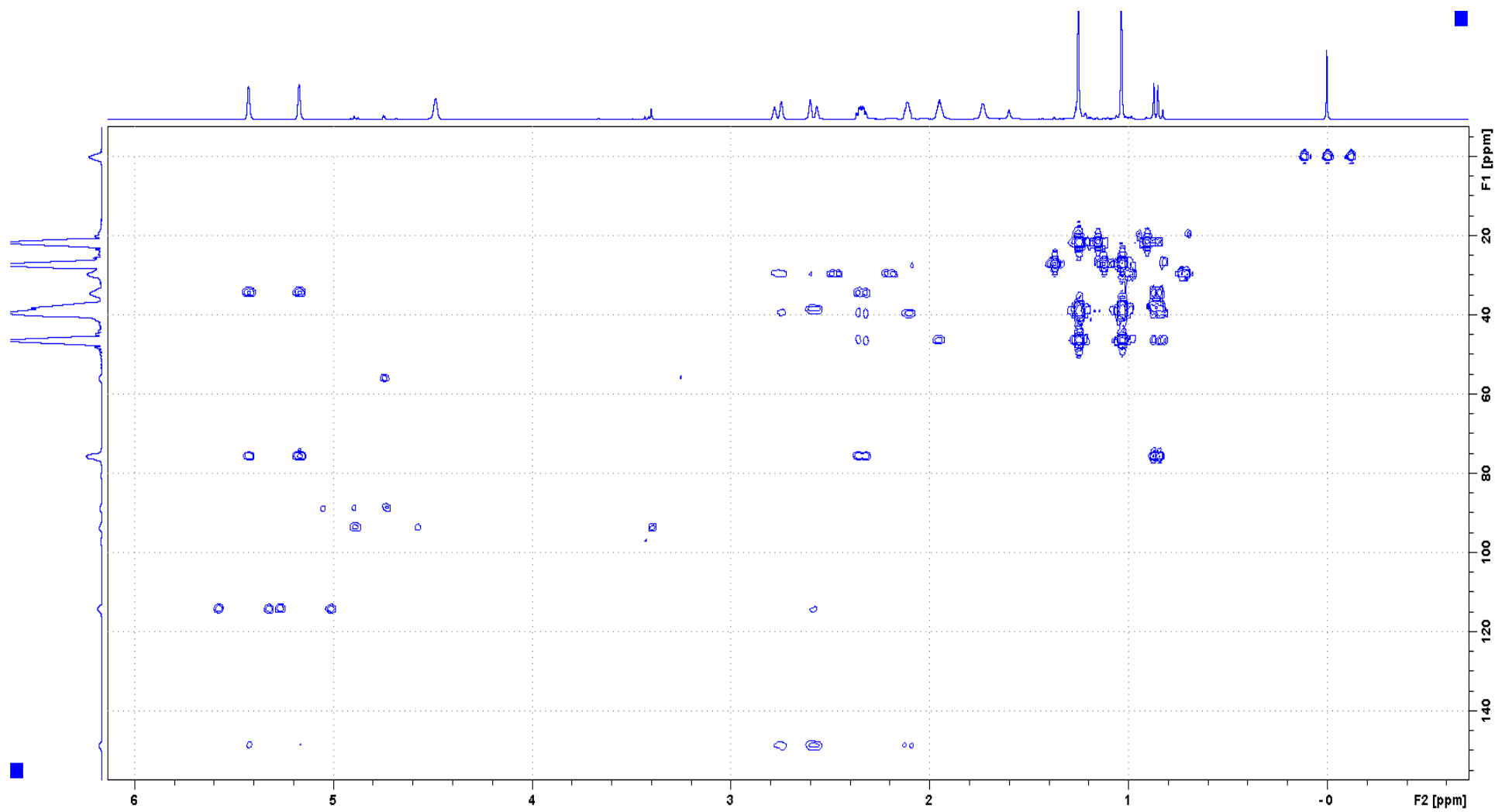
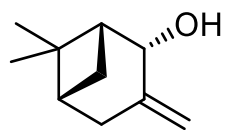
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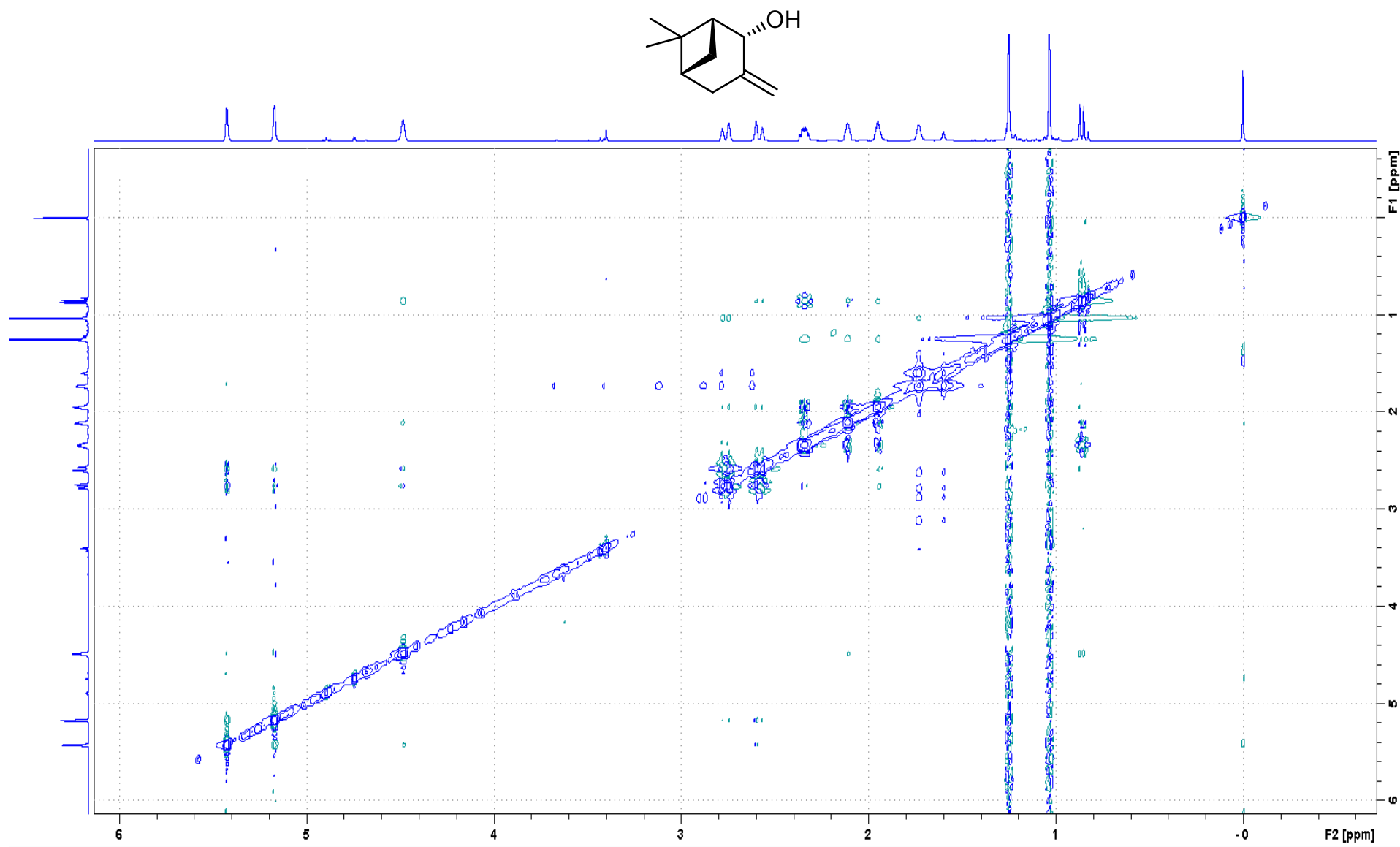
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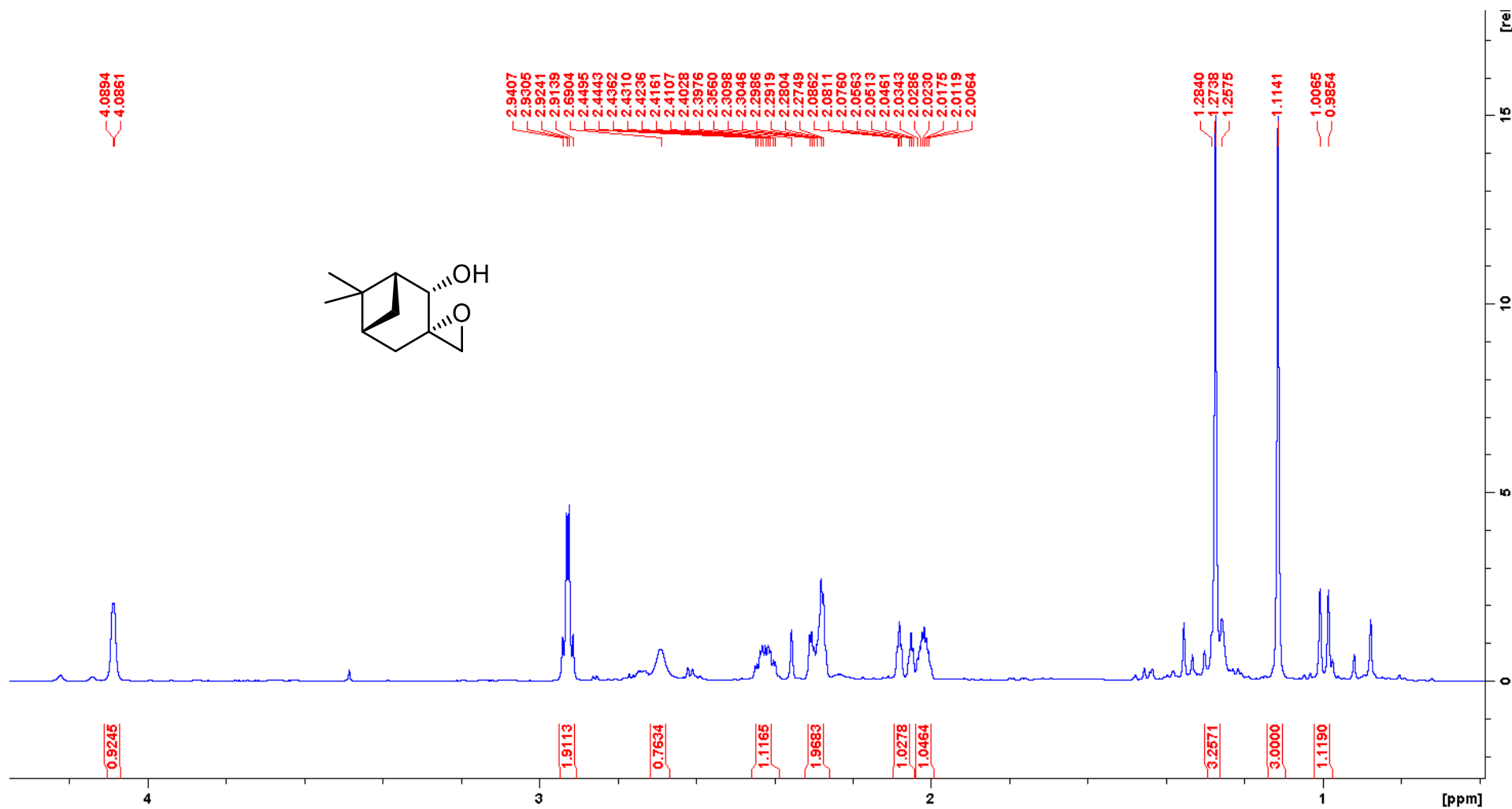
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NOESY for compound **4a**

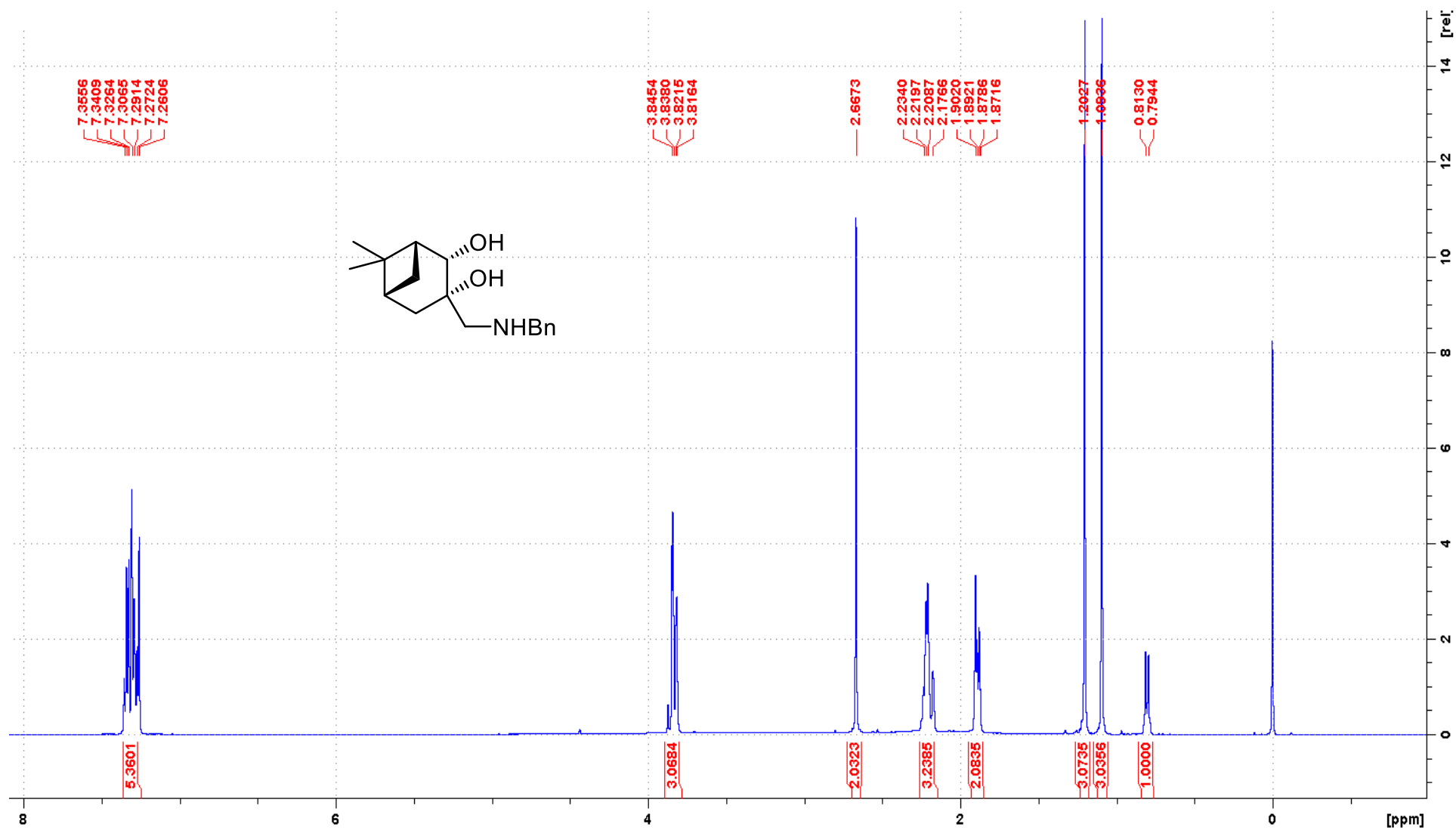


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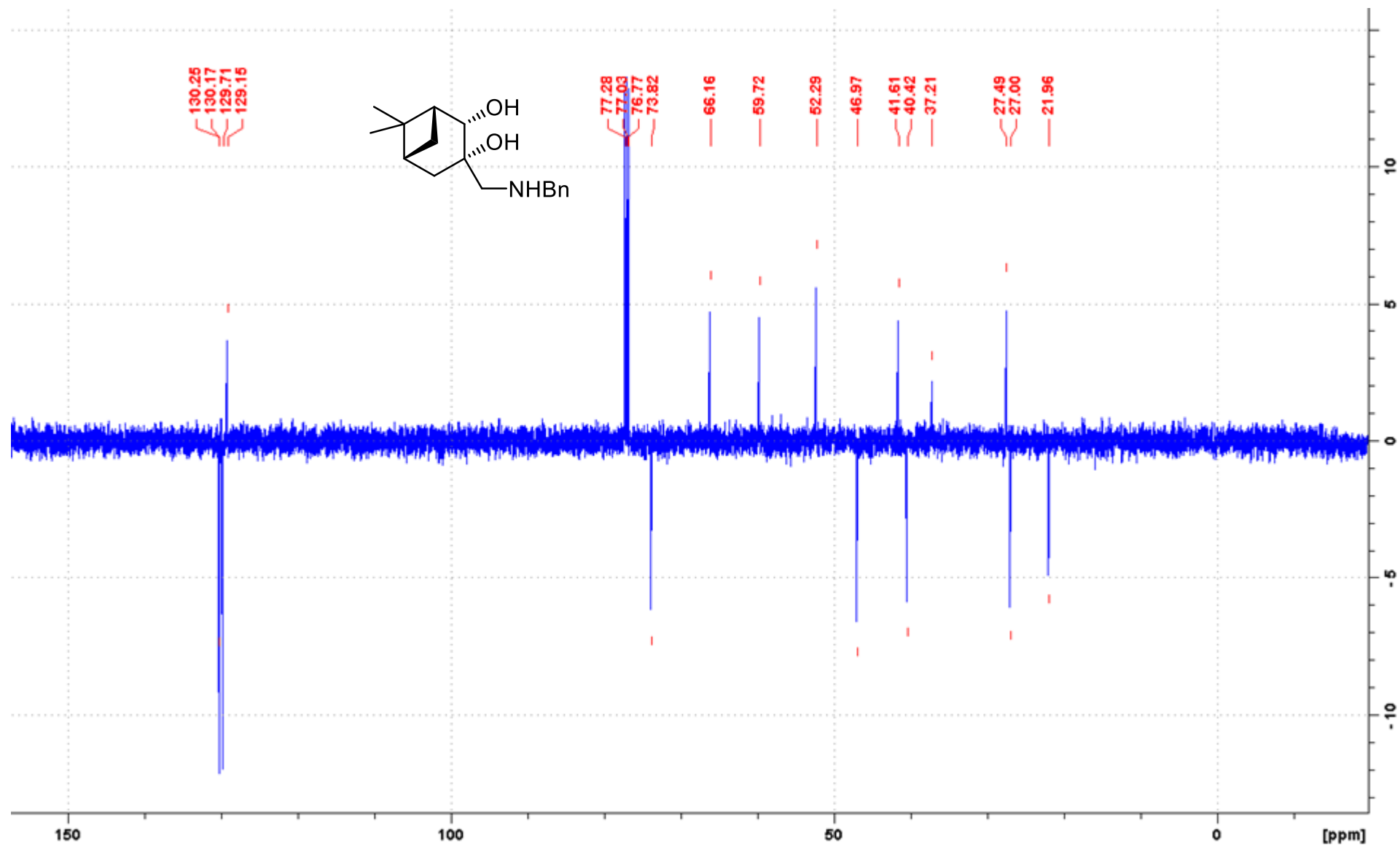




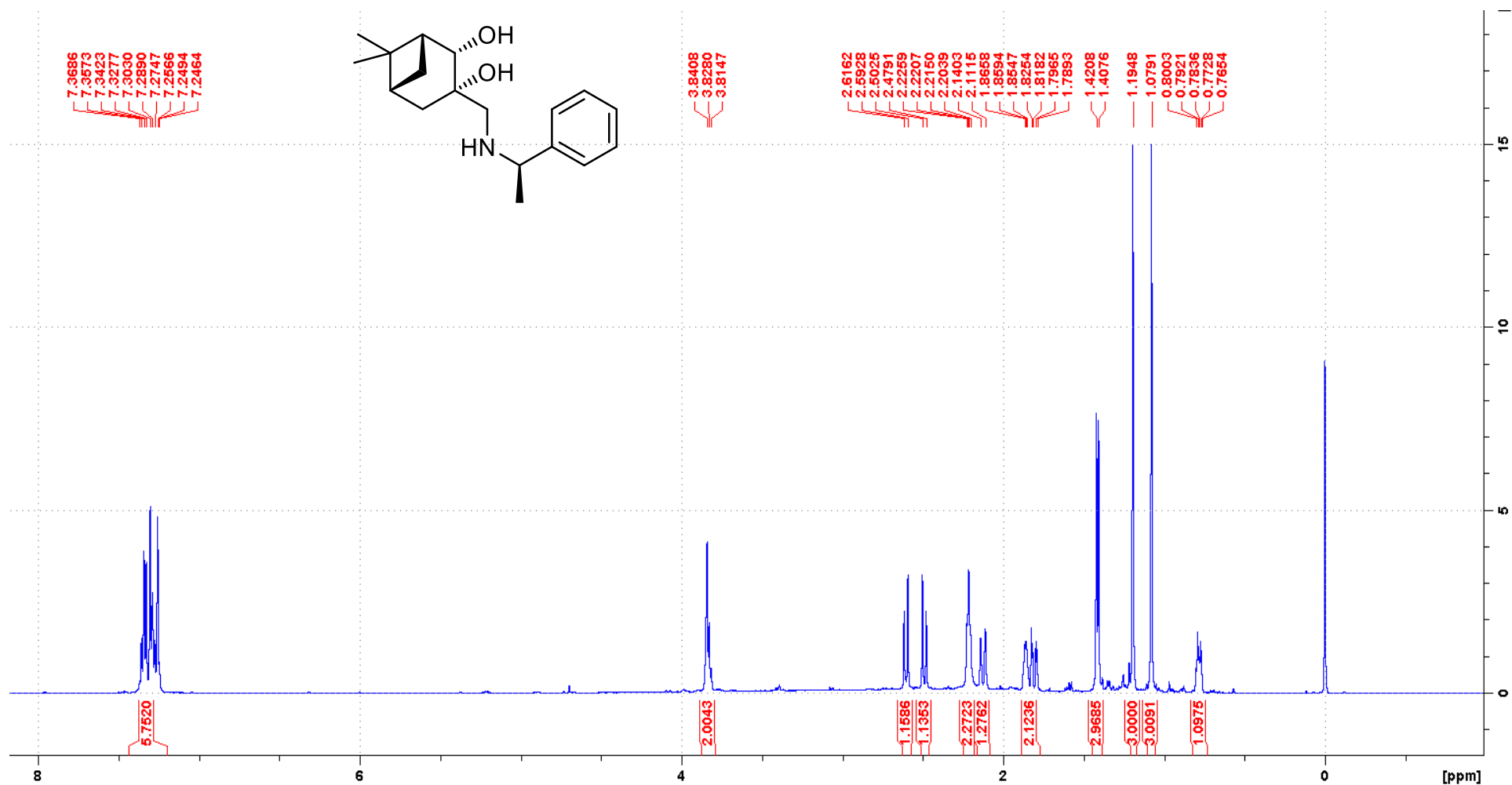
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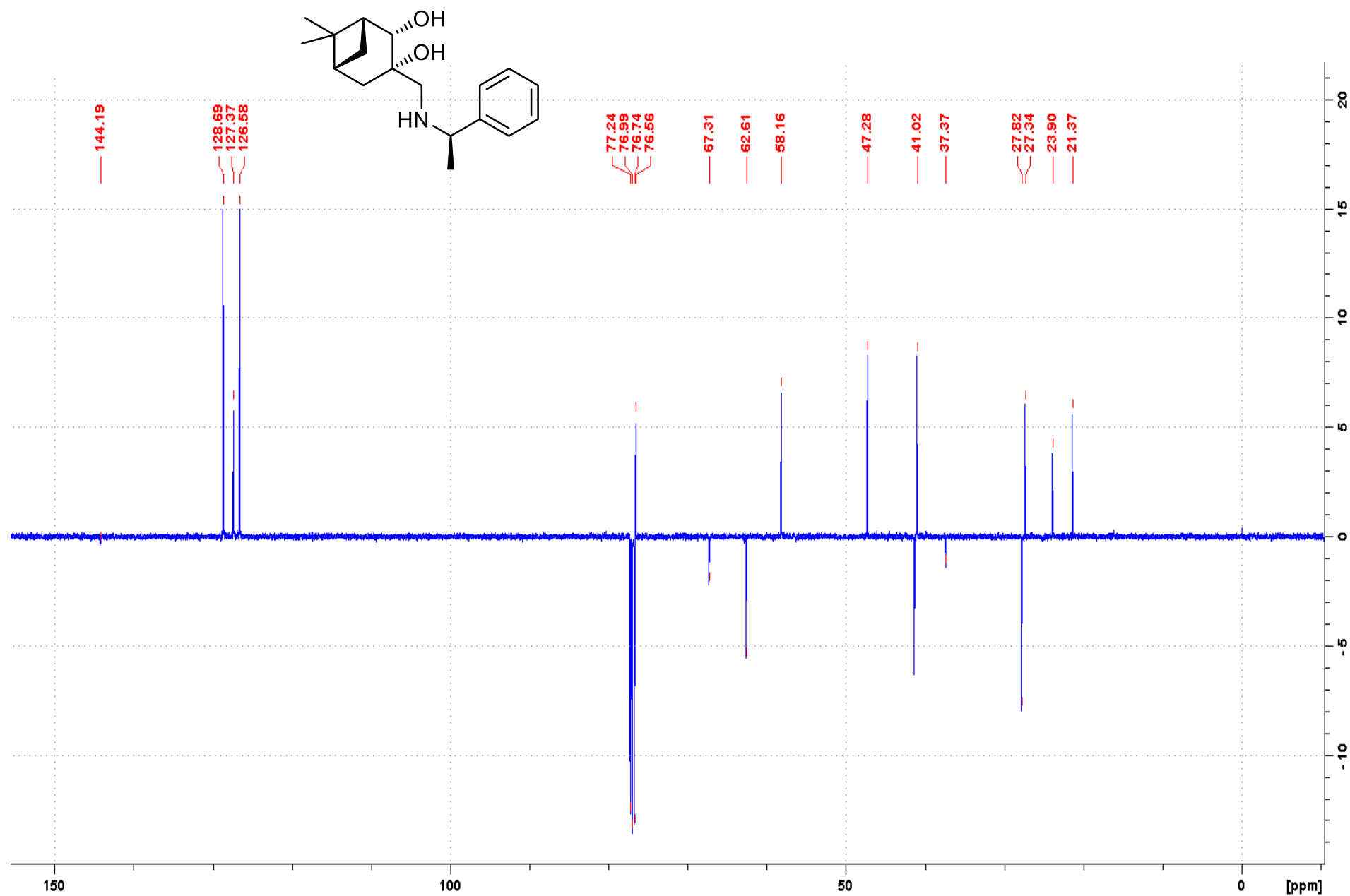
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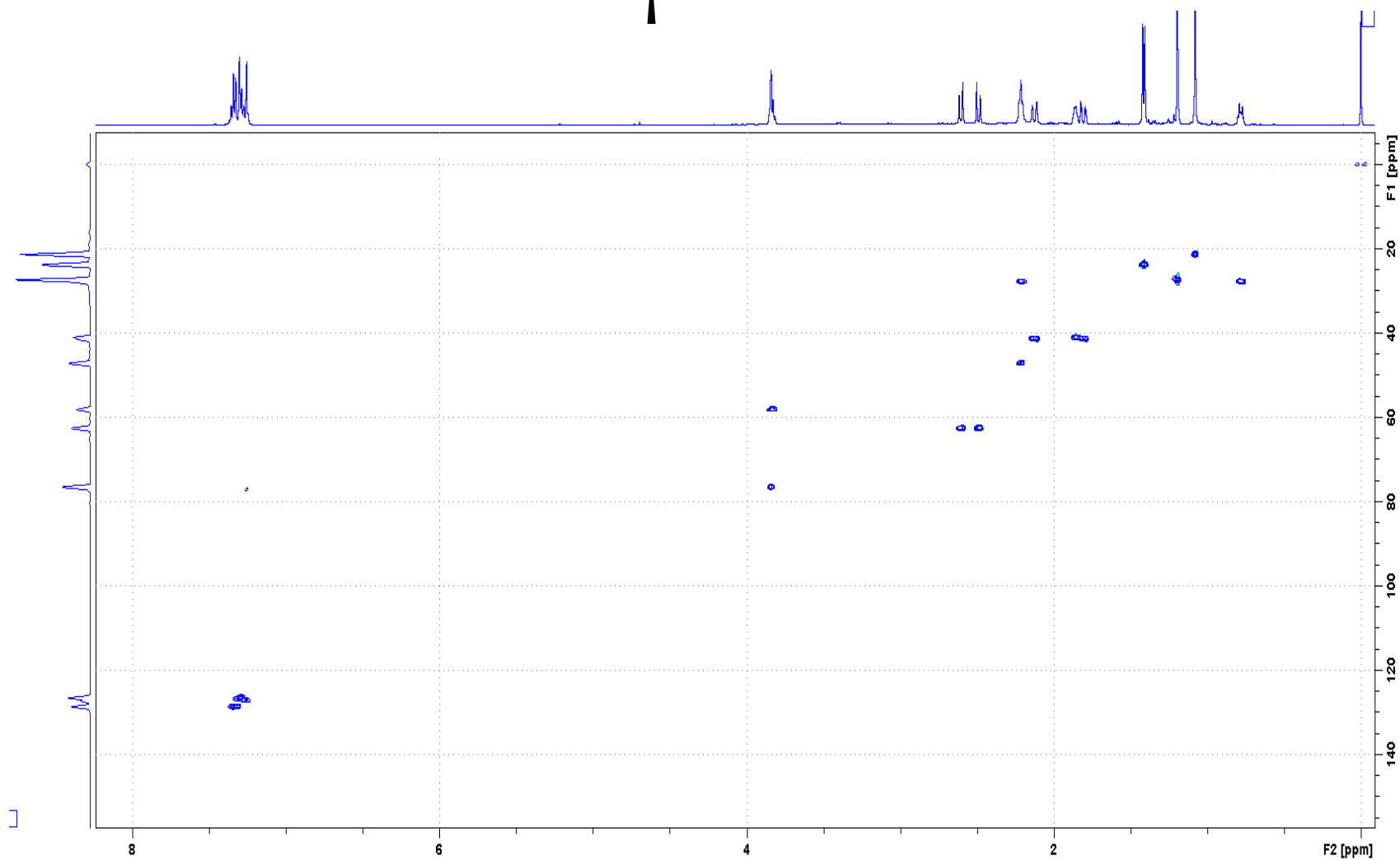
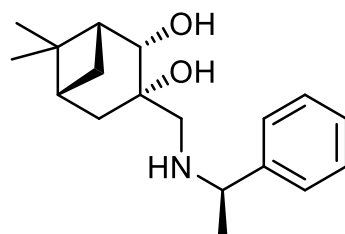
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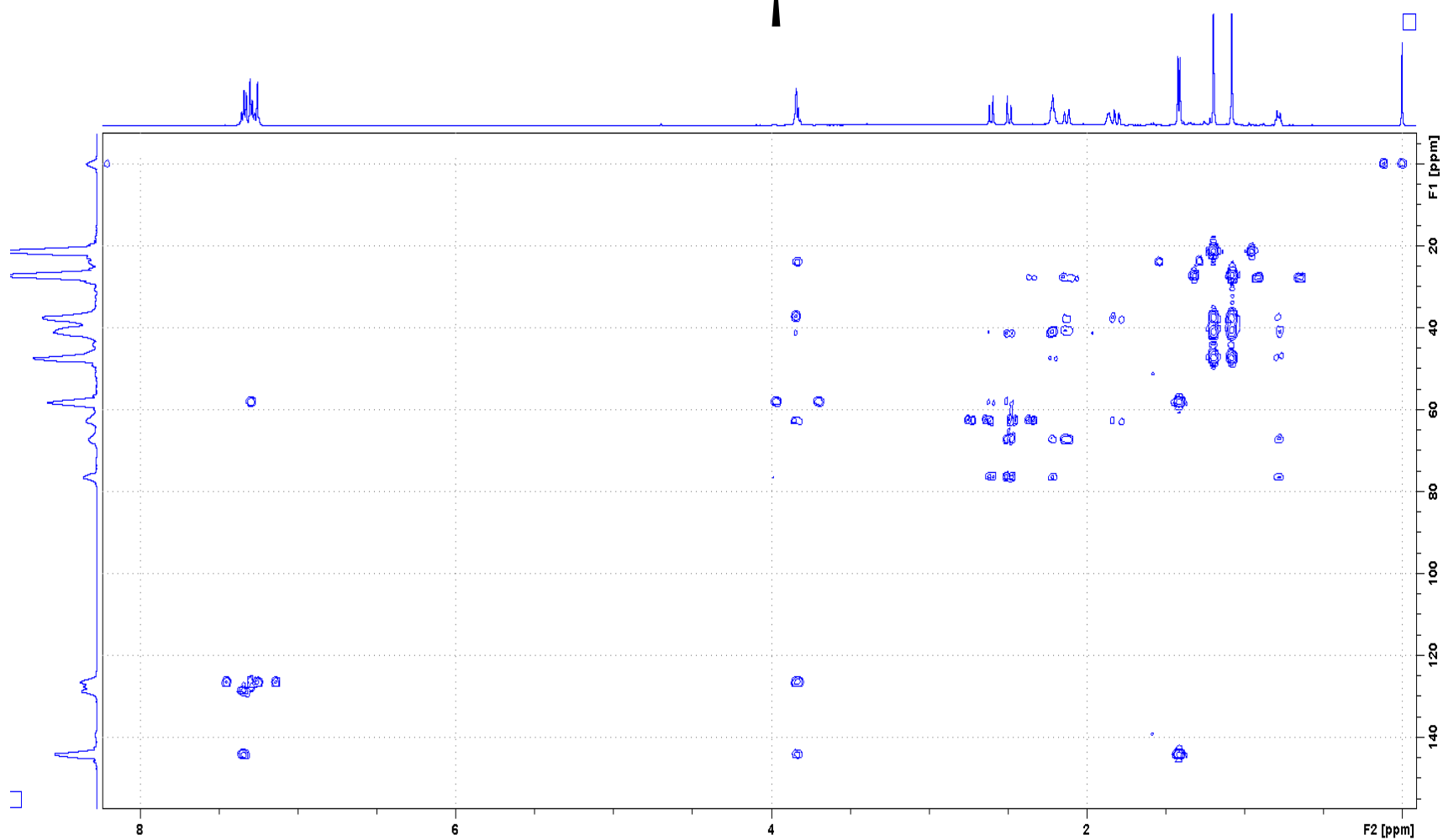
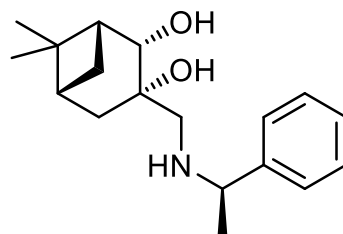
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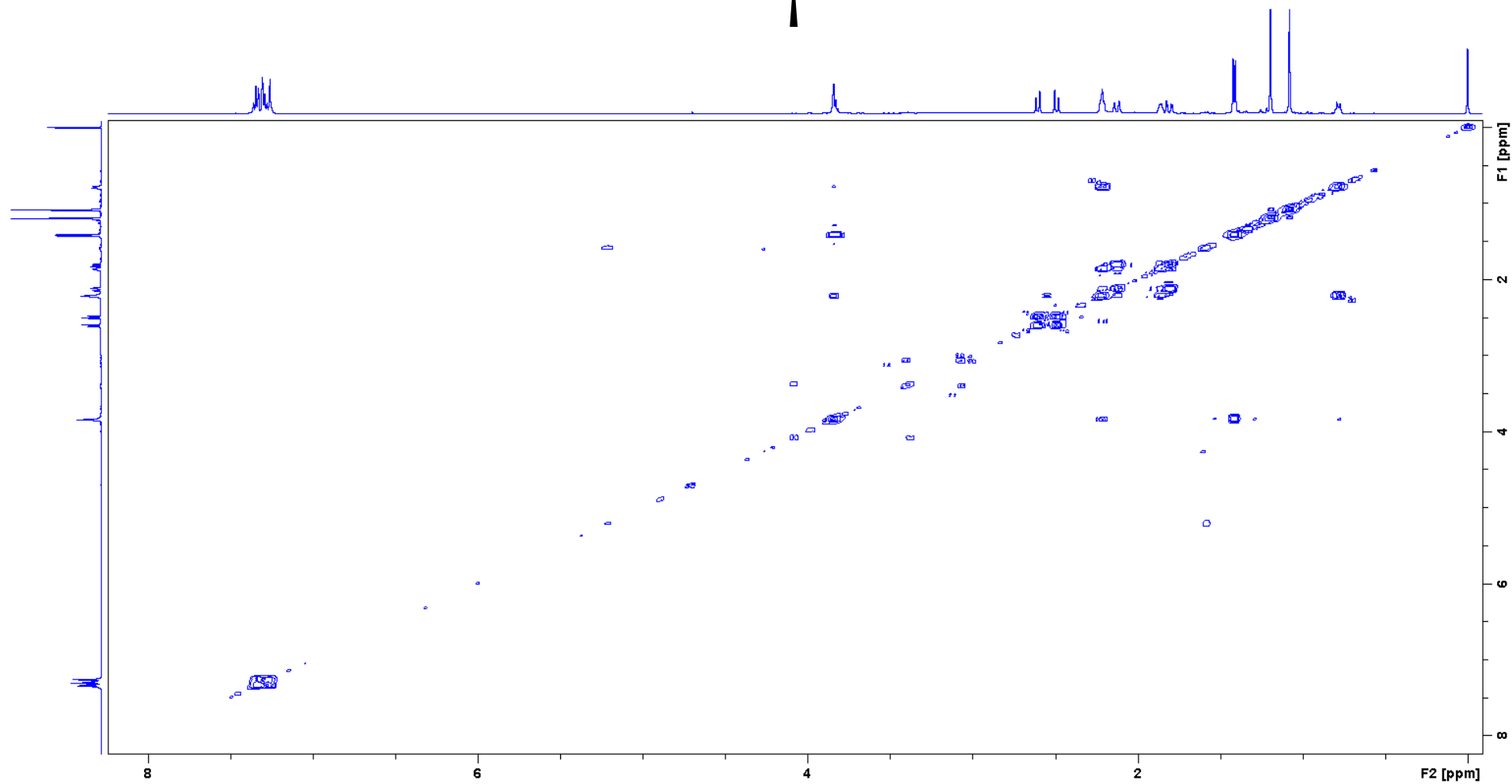
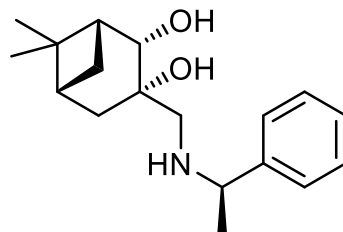
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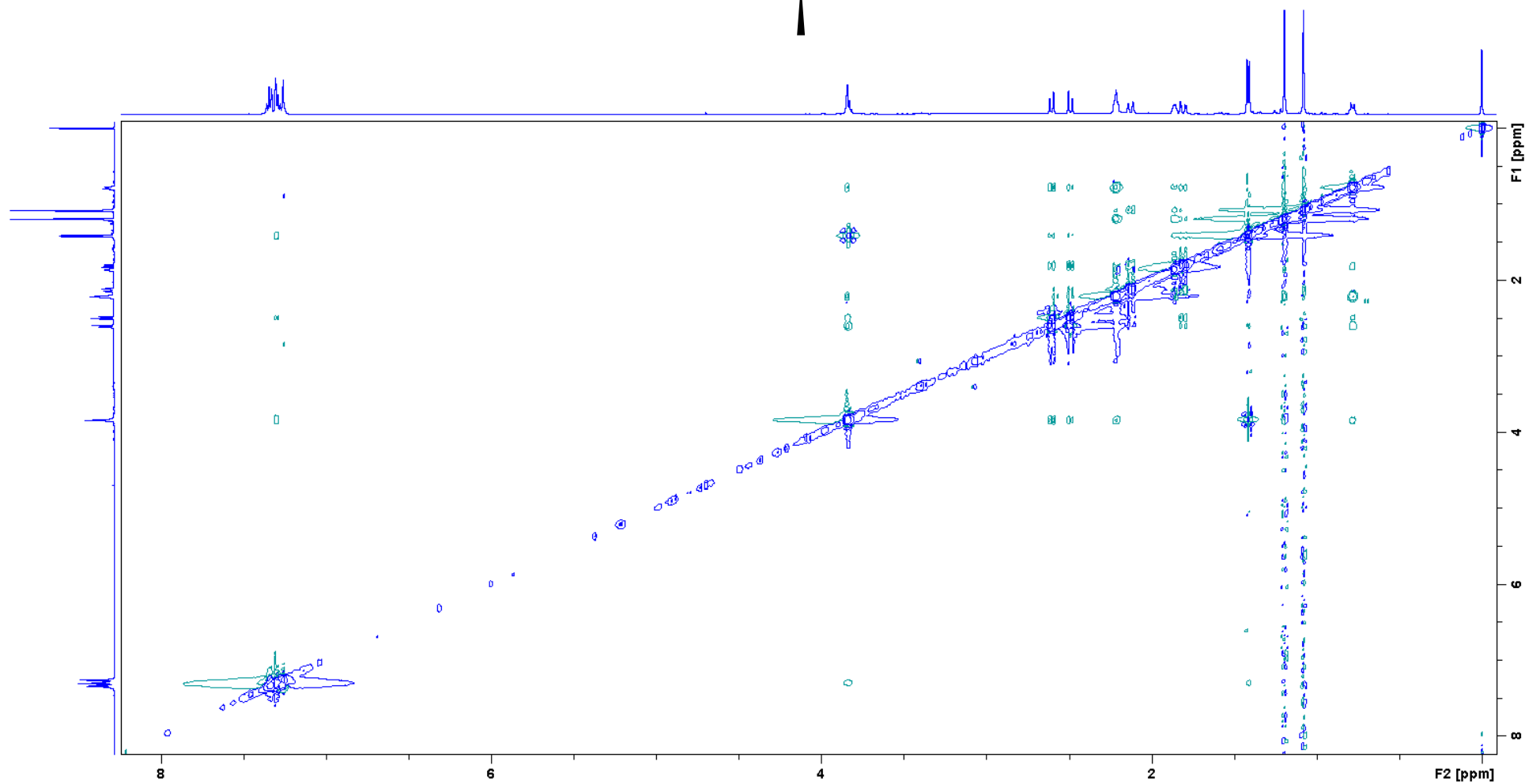
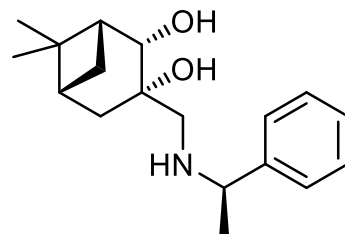
HMBC for compound 7



COSY for compound **7**

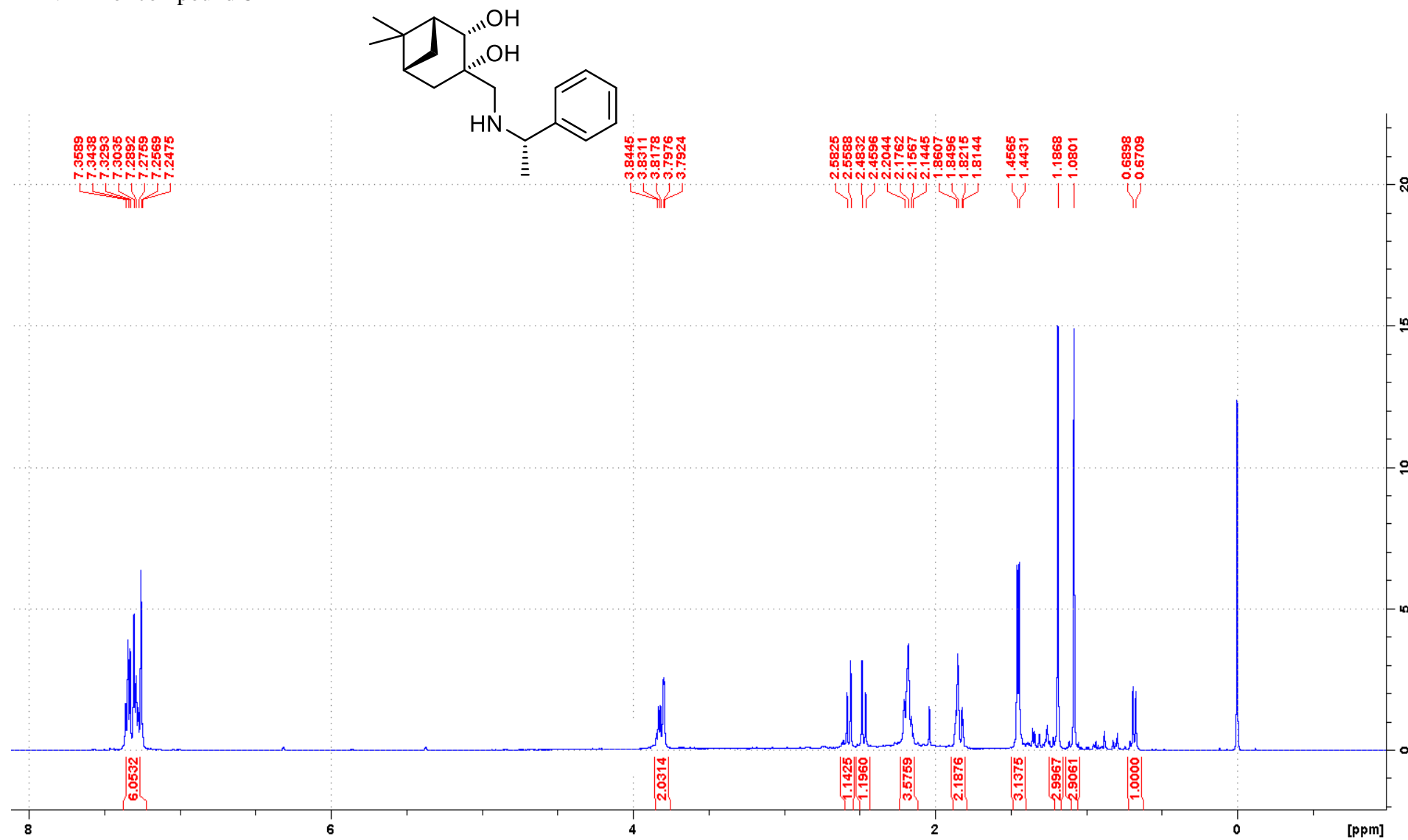


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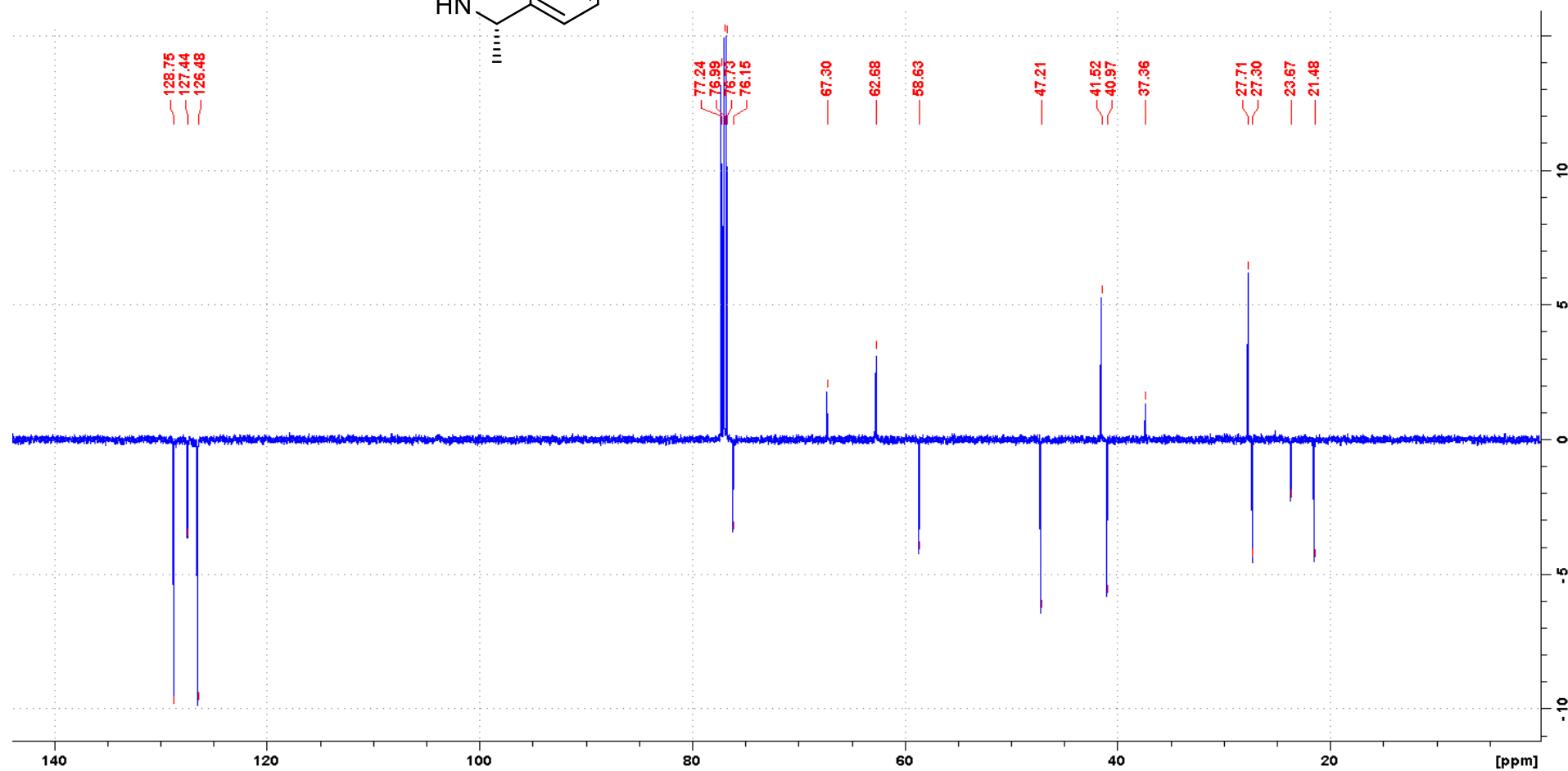
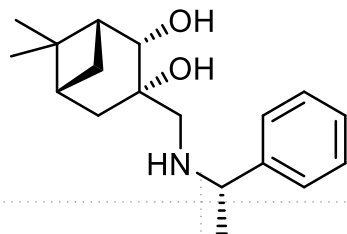




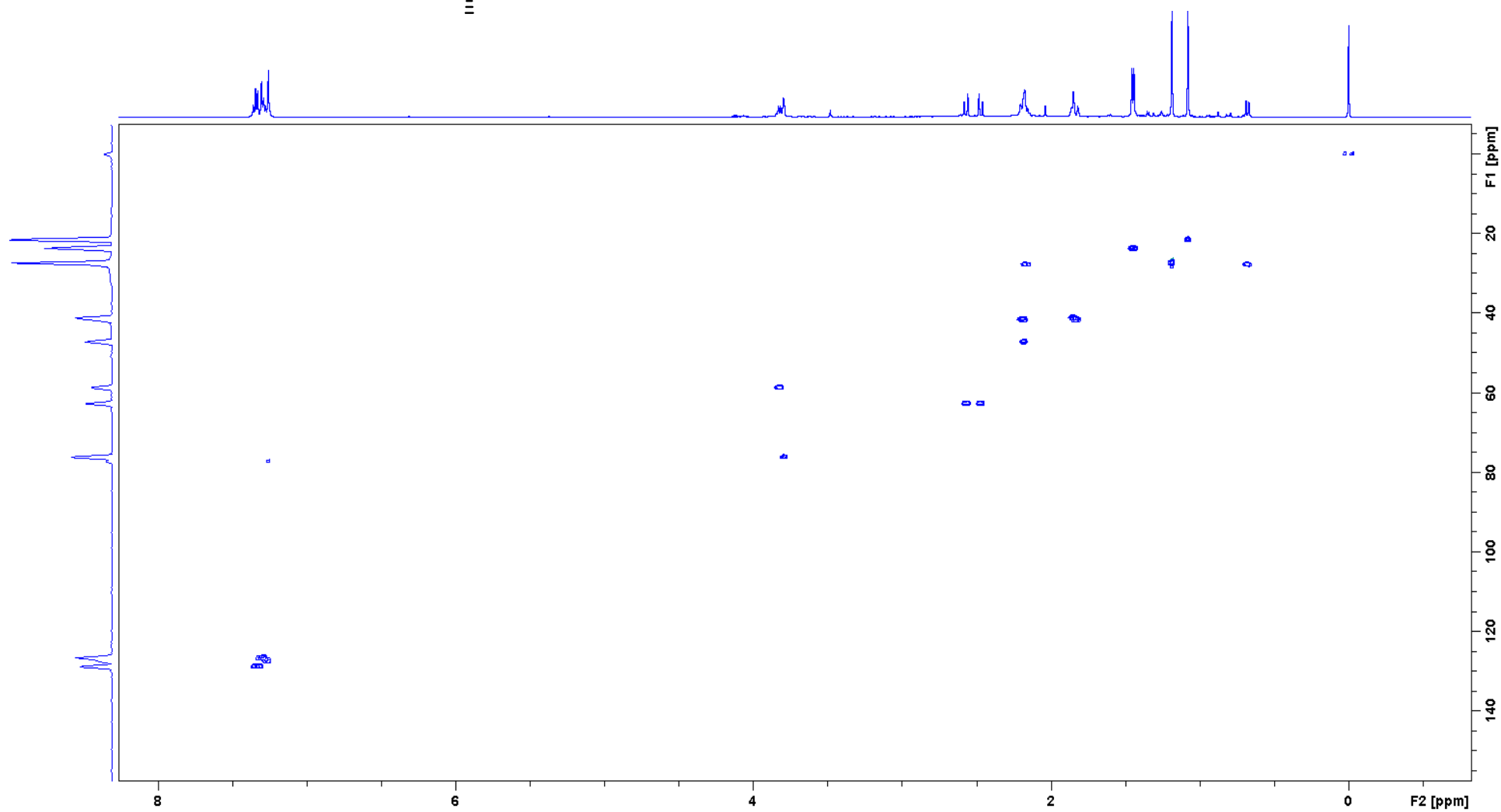
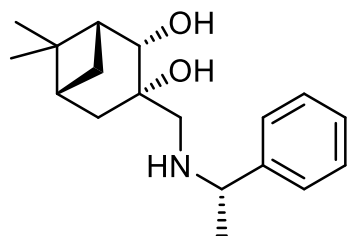
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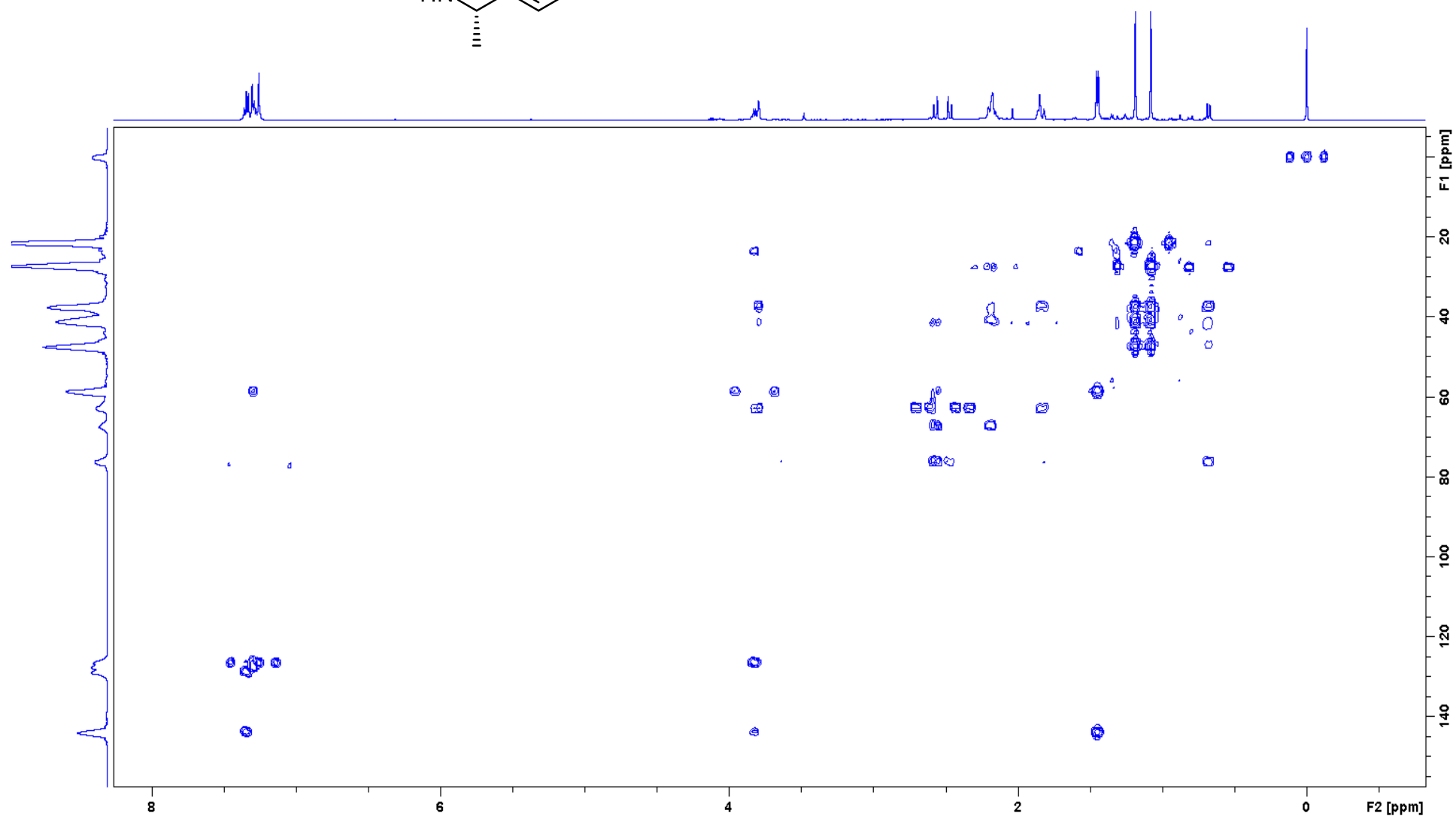
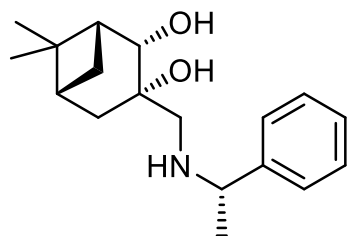
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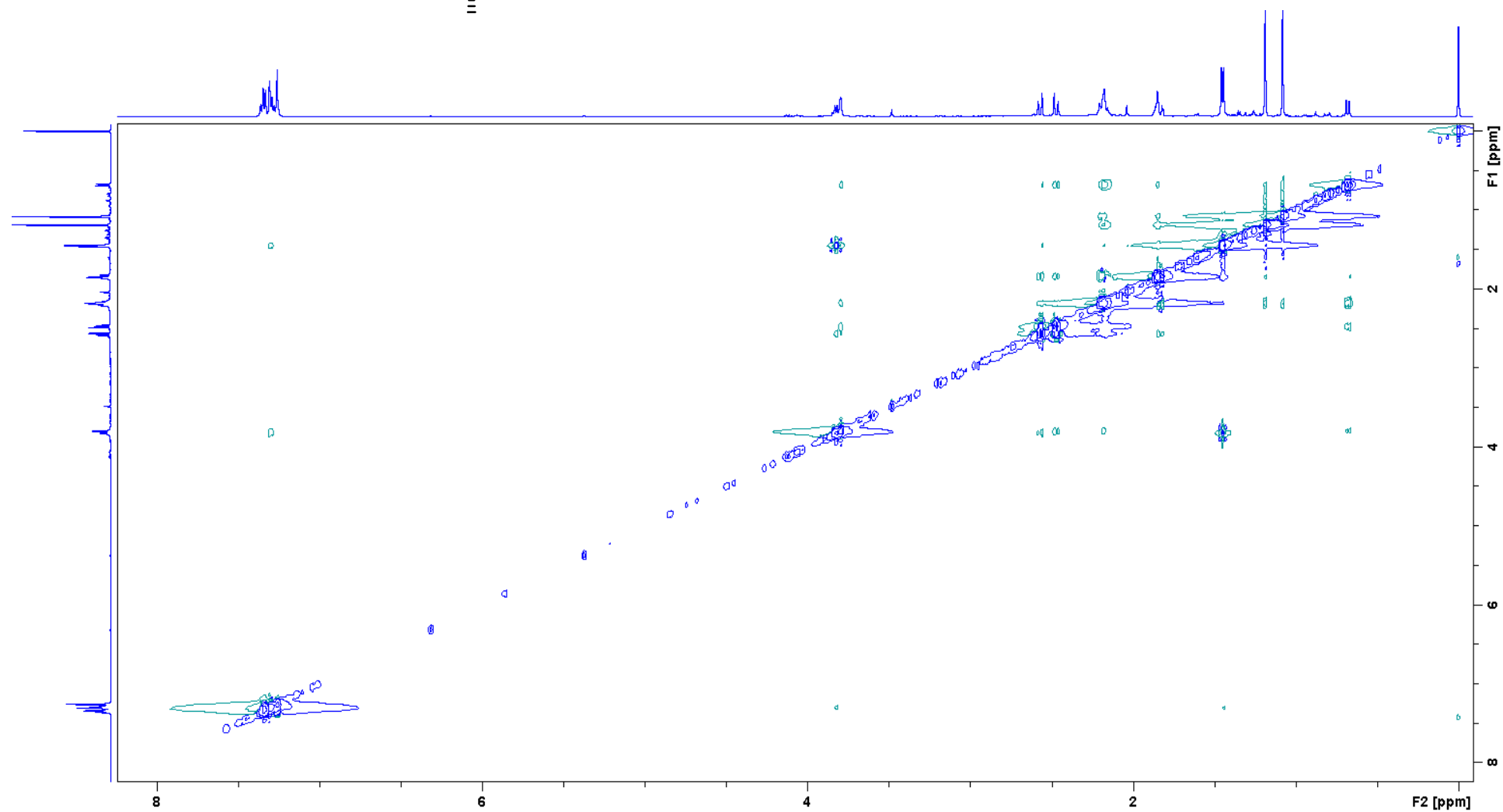
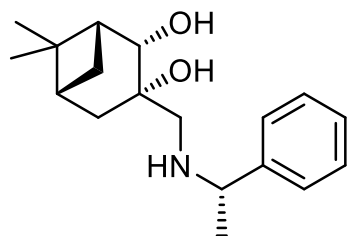
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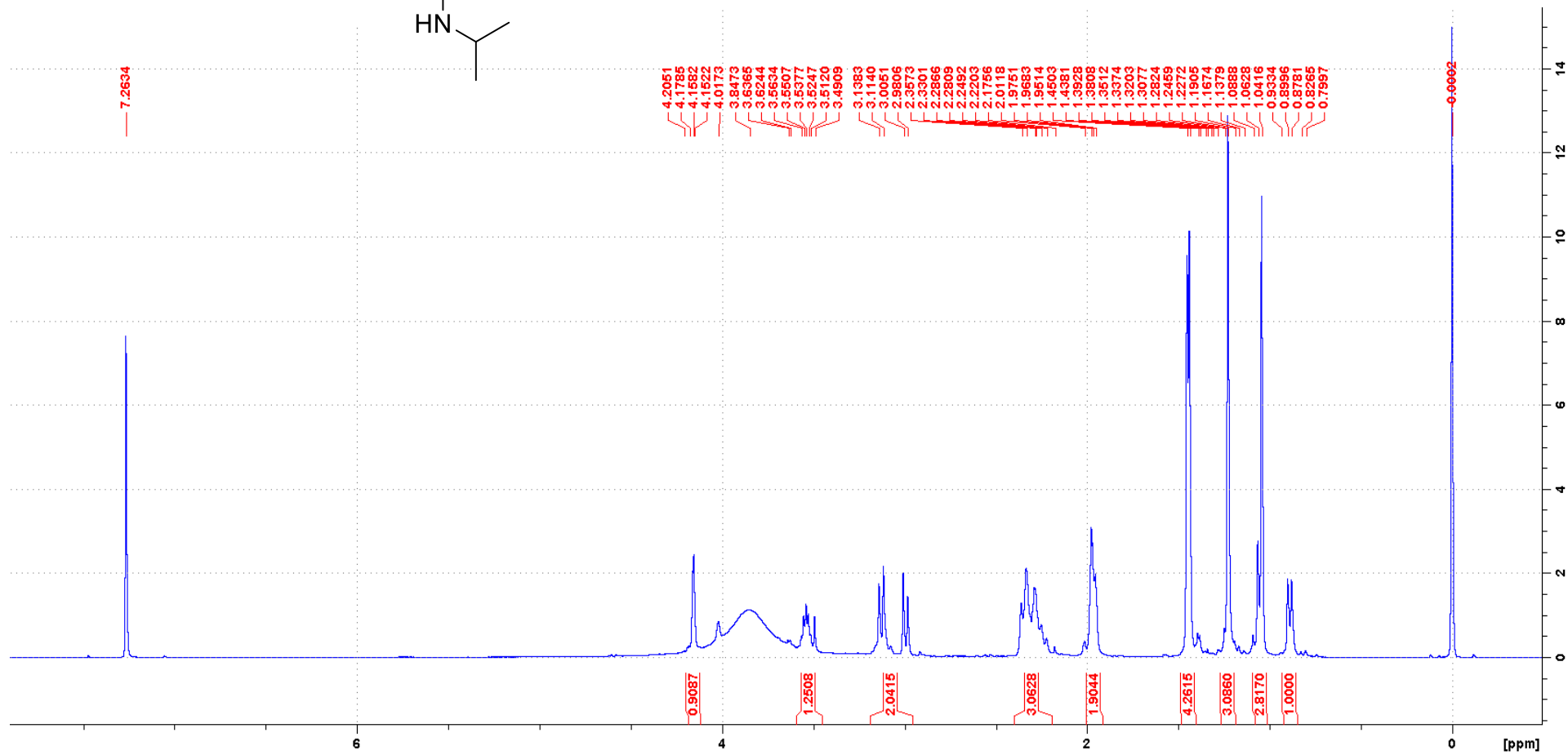
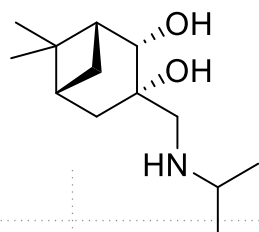
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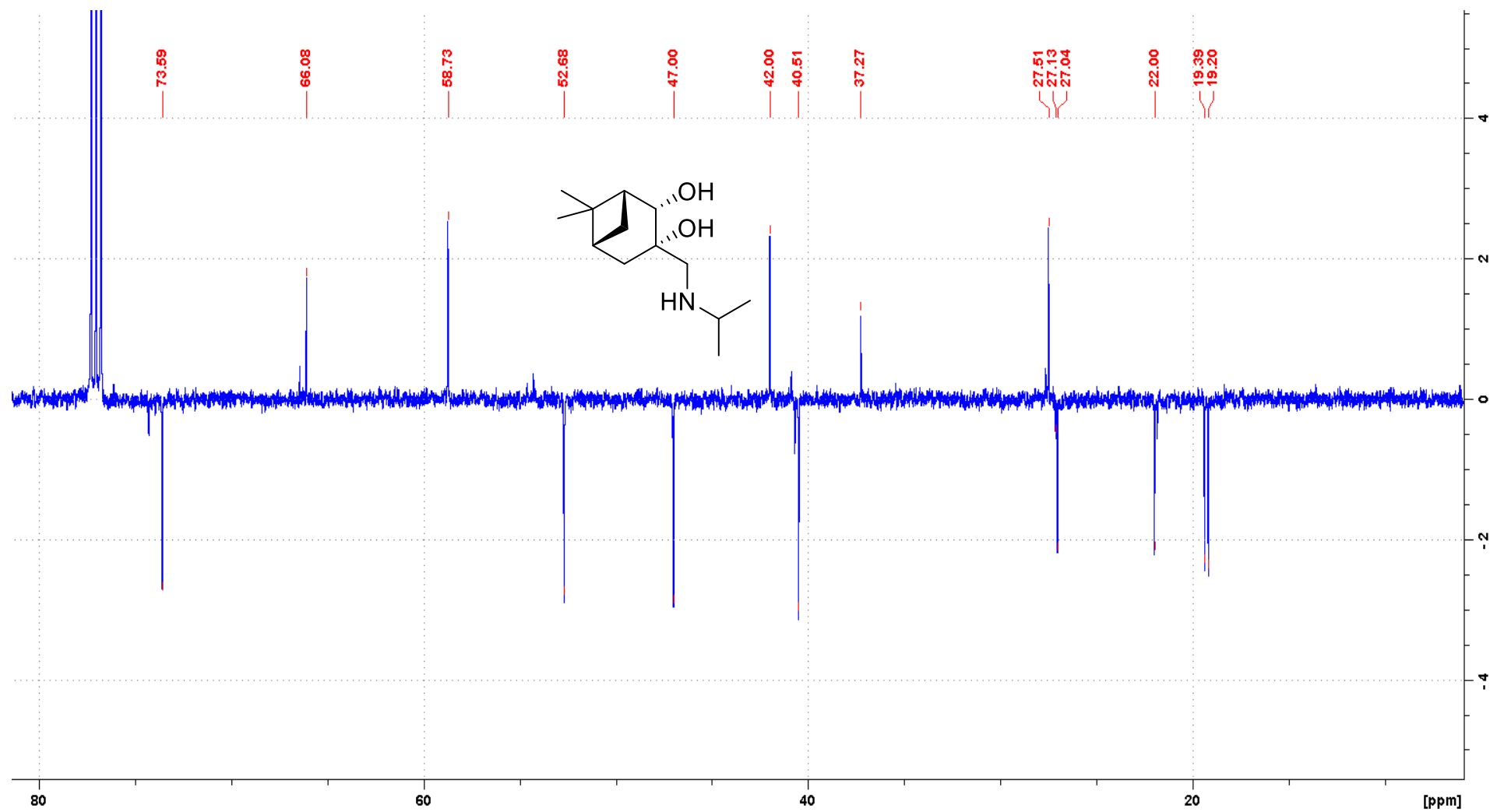
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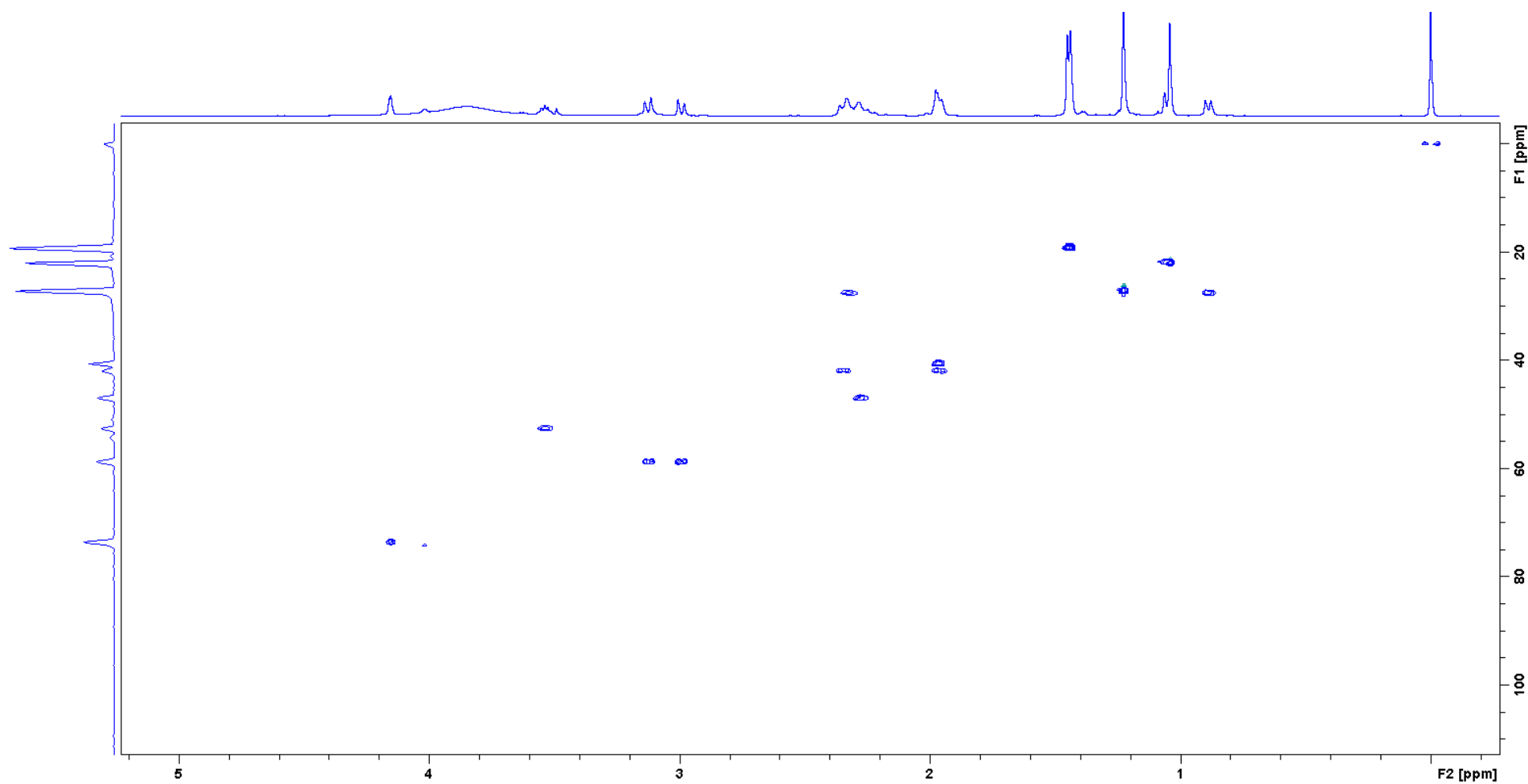
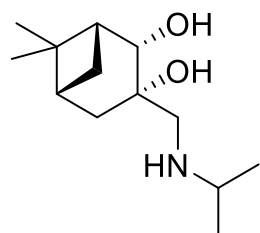
<sup>1</sup>H-NMR for compound **9**



$^{13}\text{C}$ -NMR for compound **9**

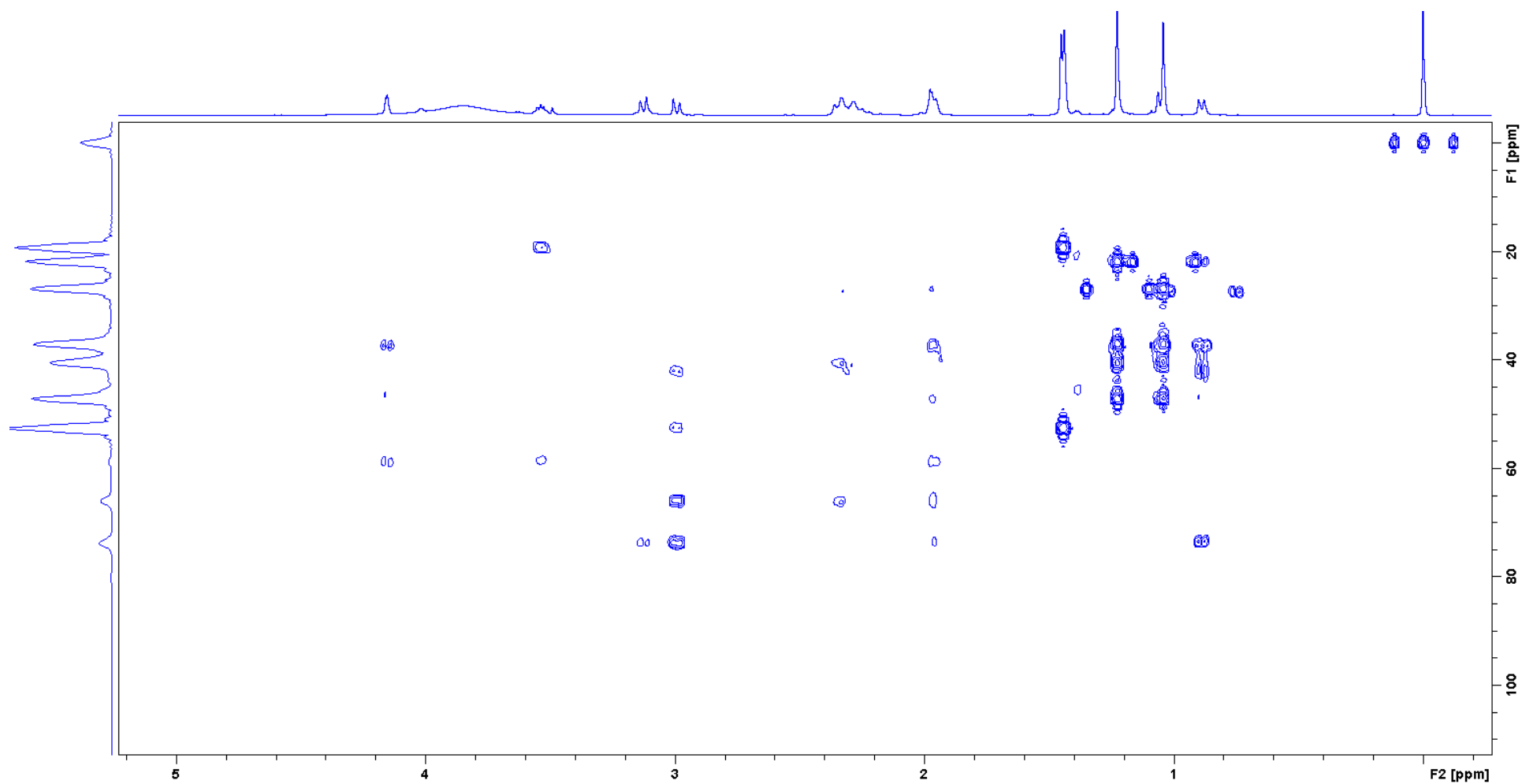
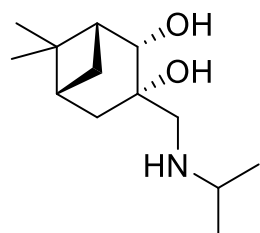


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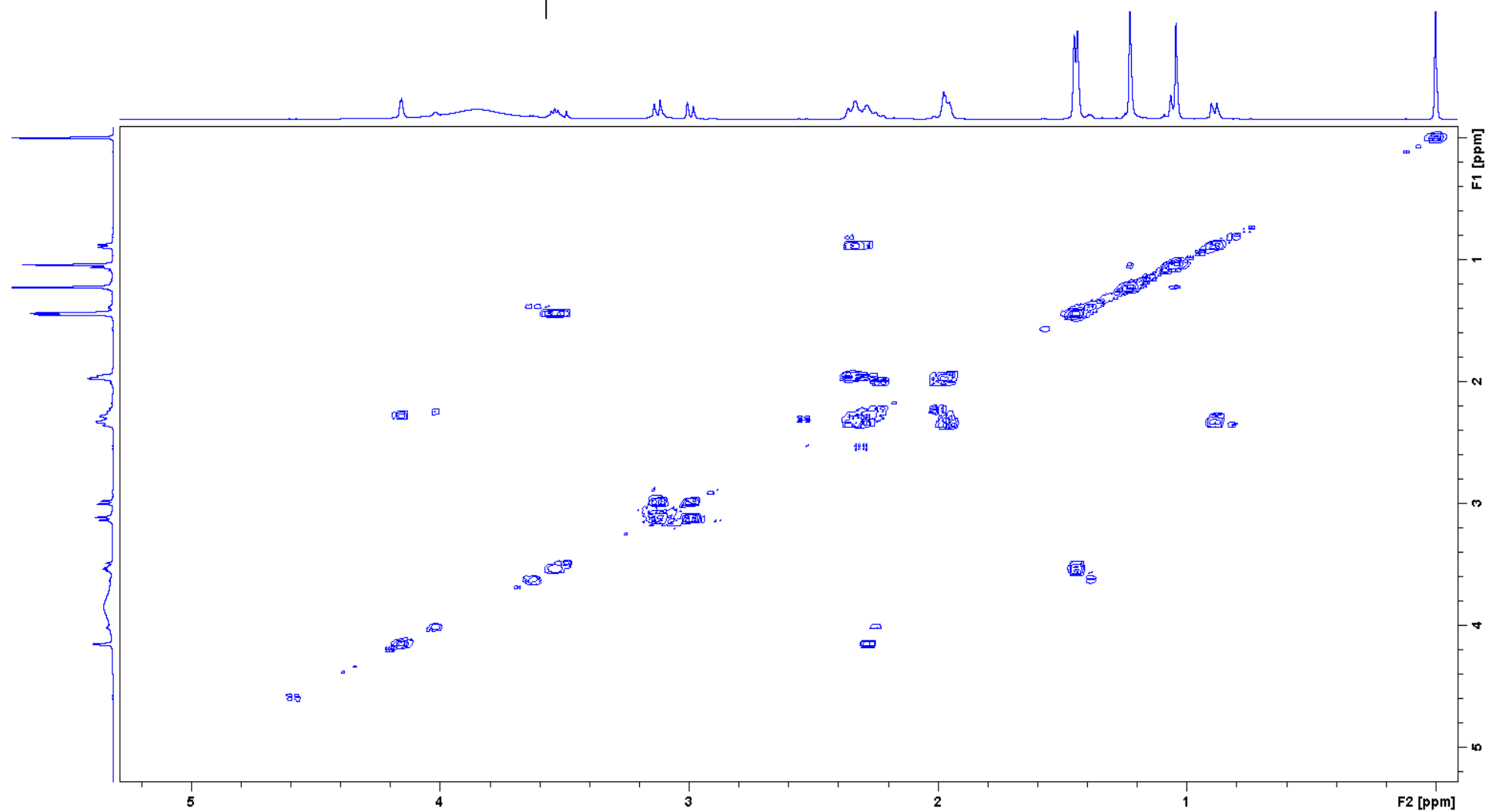
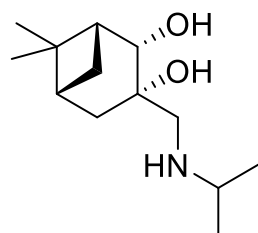




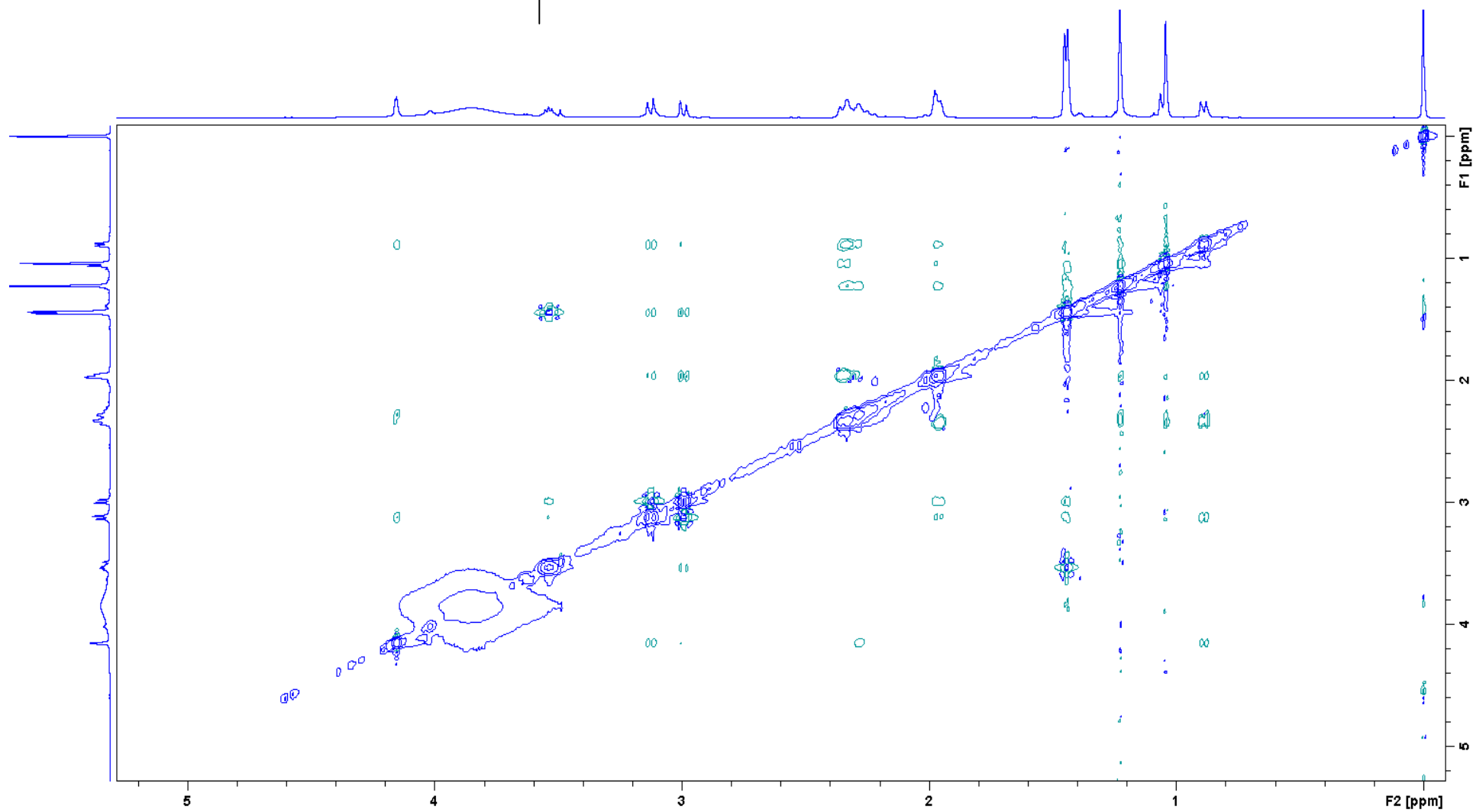
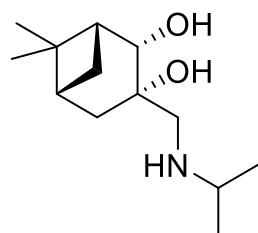
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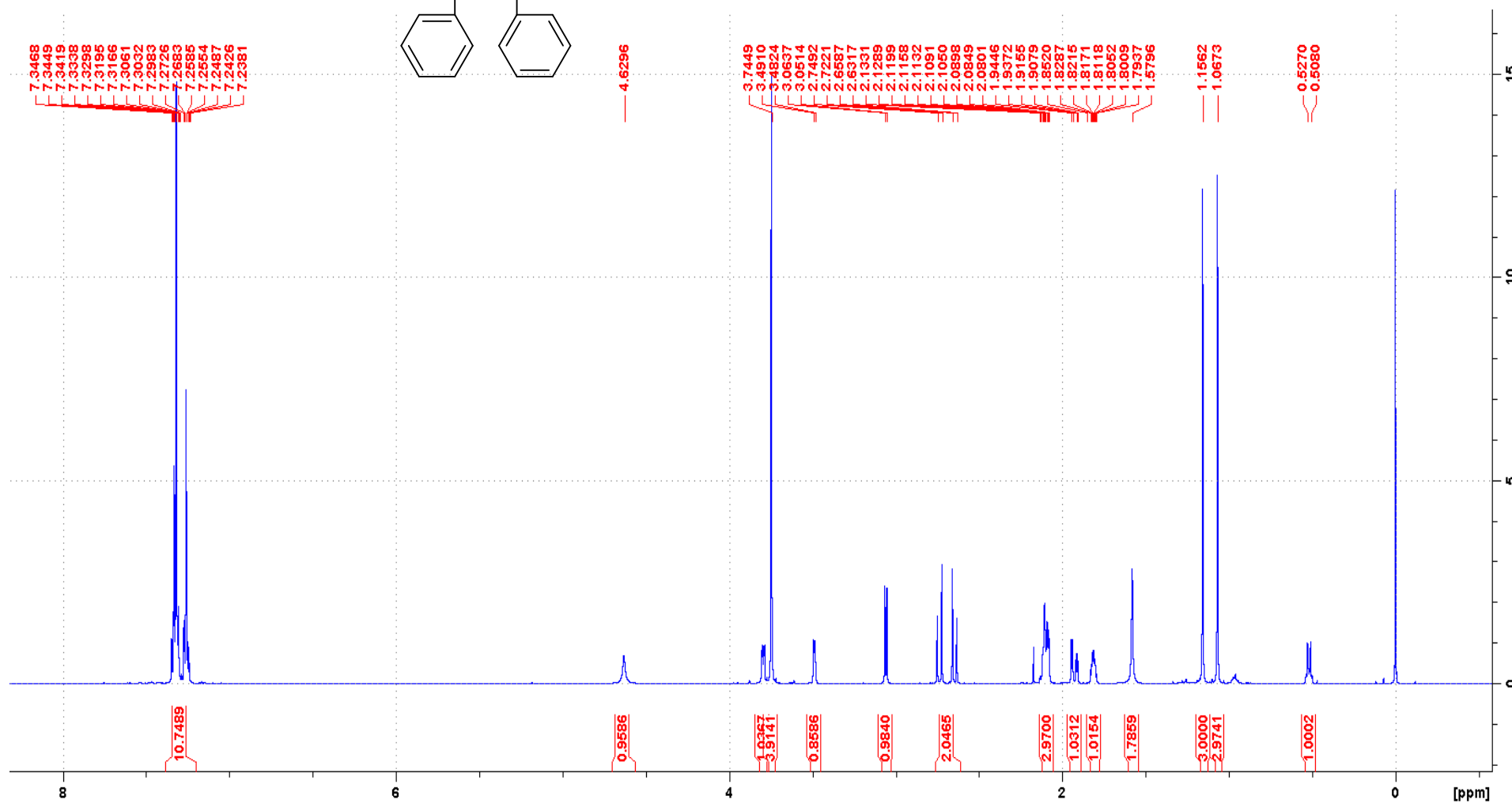
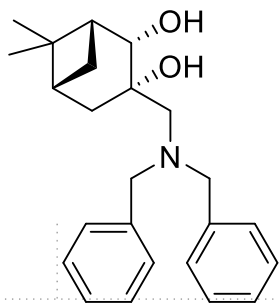
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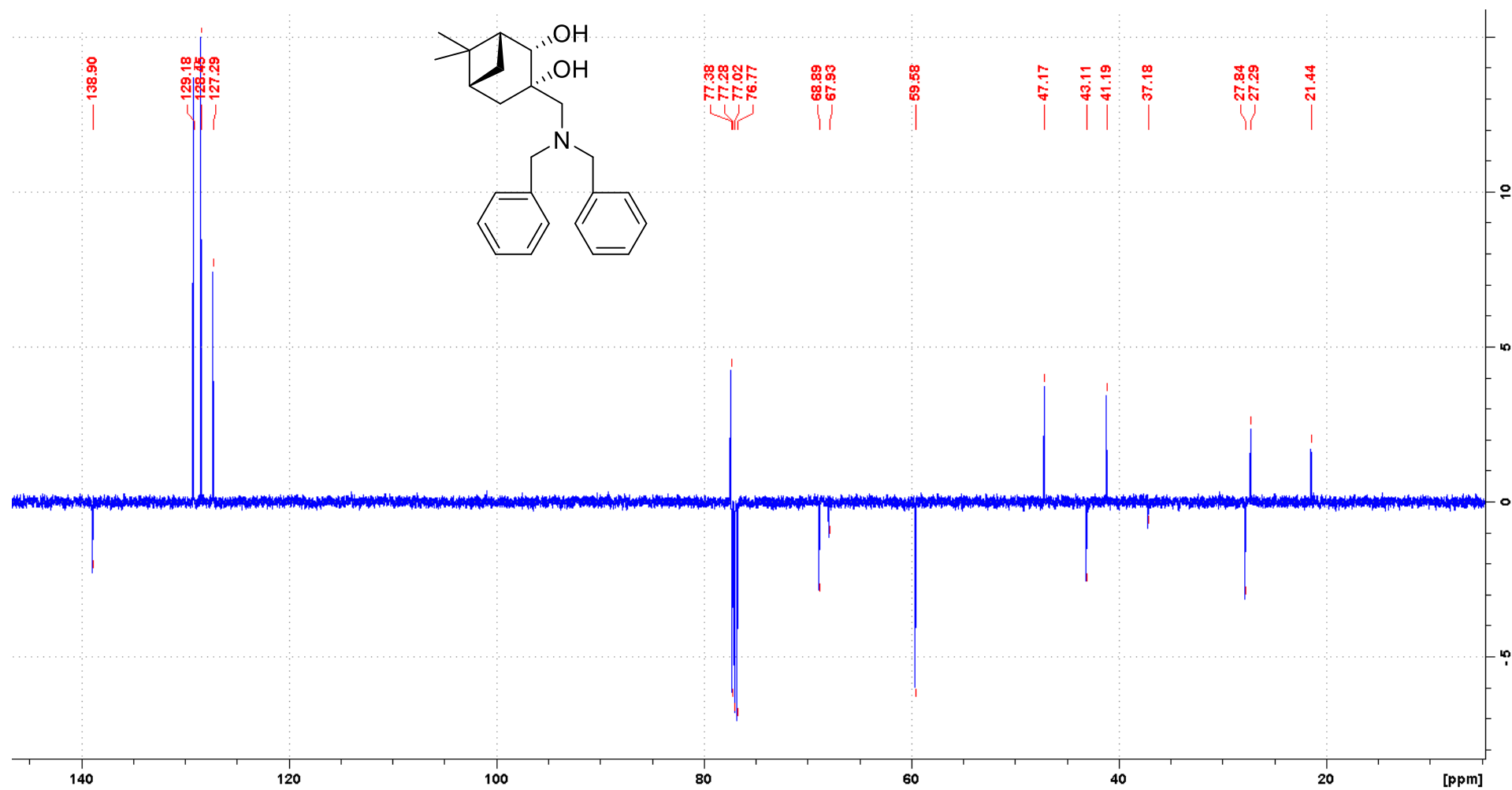
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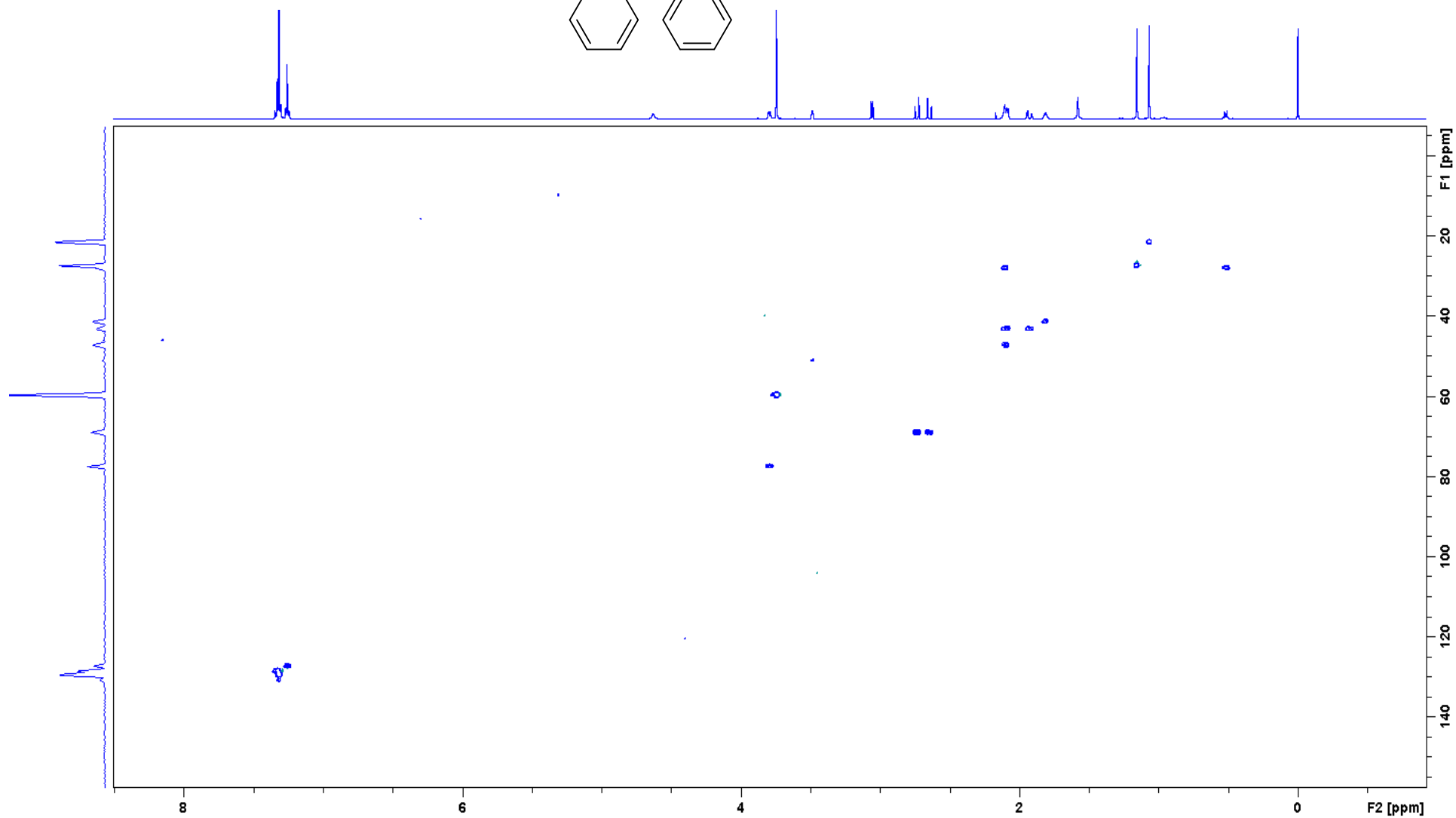
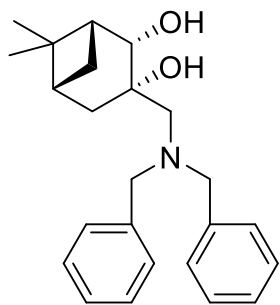
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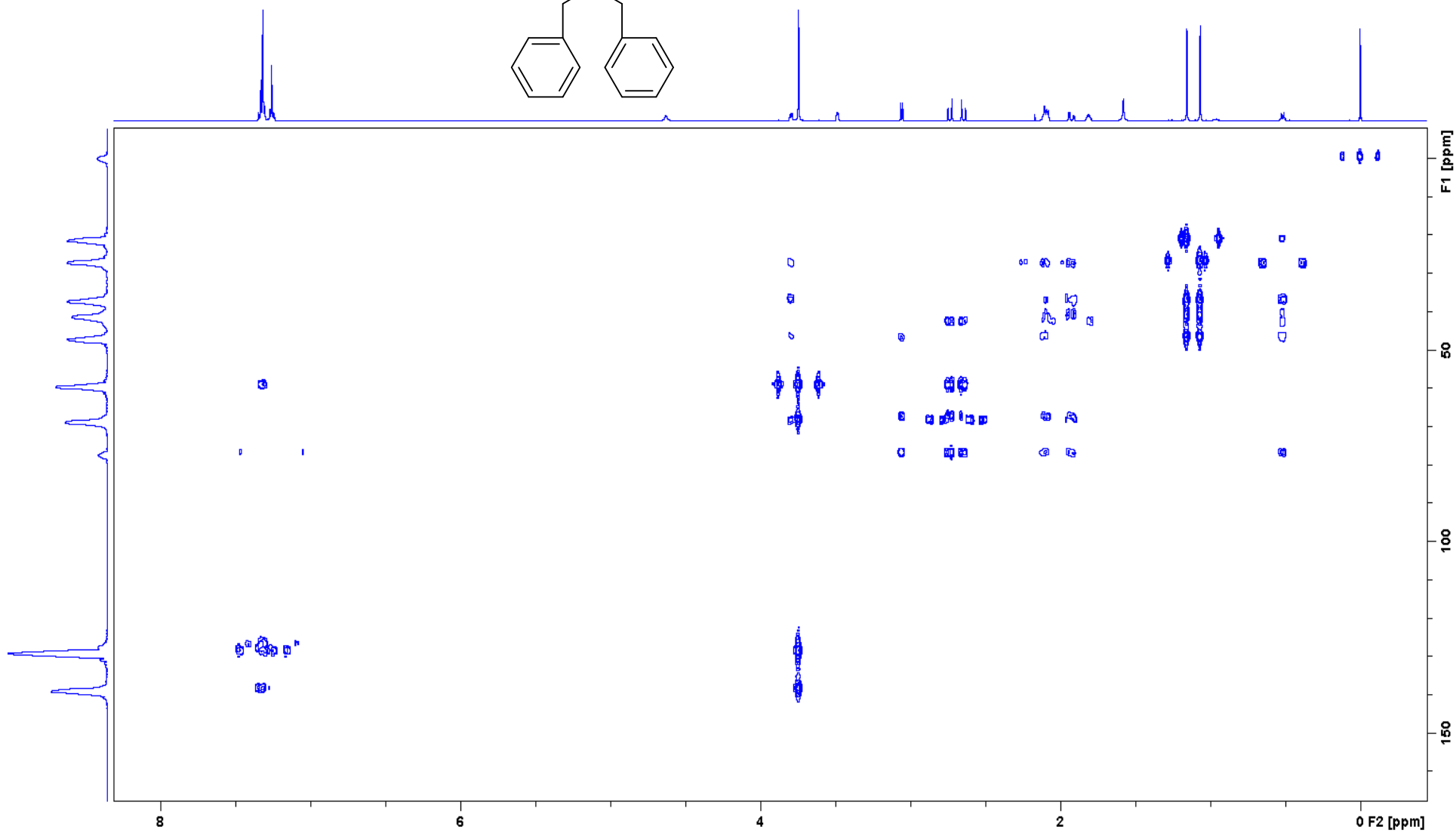
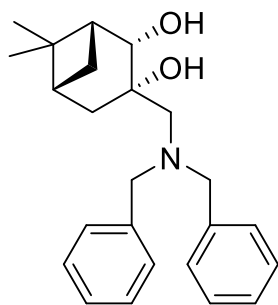
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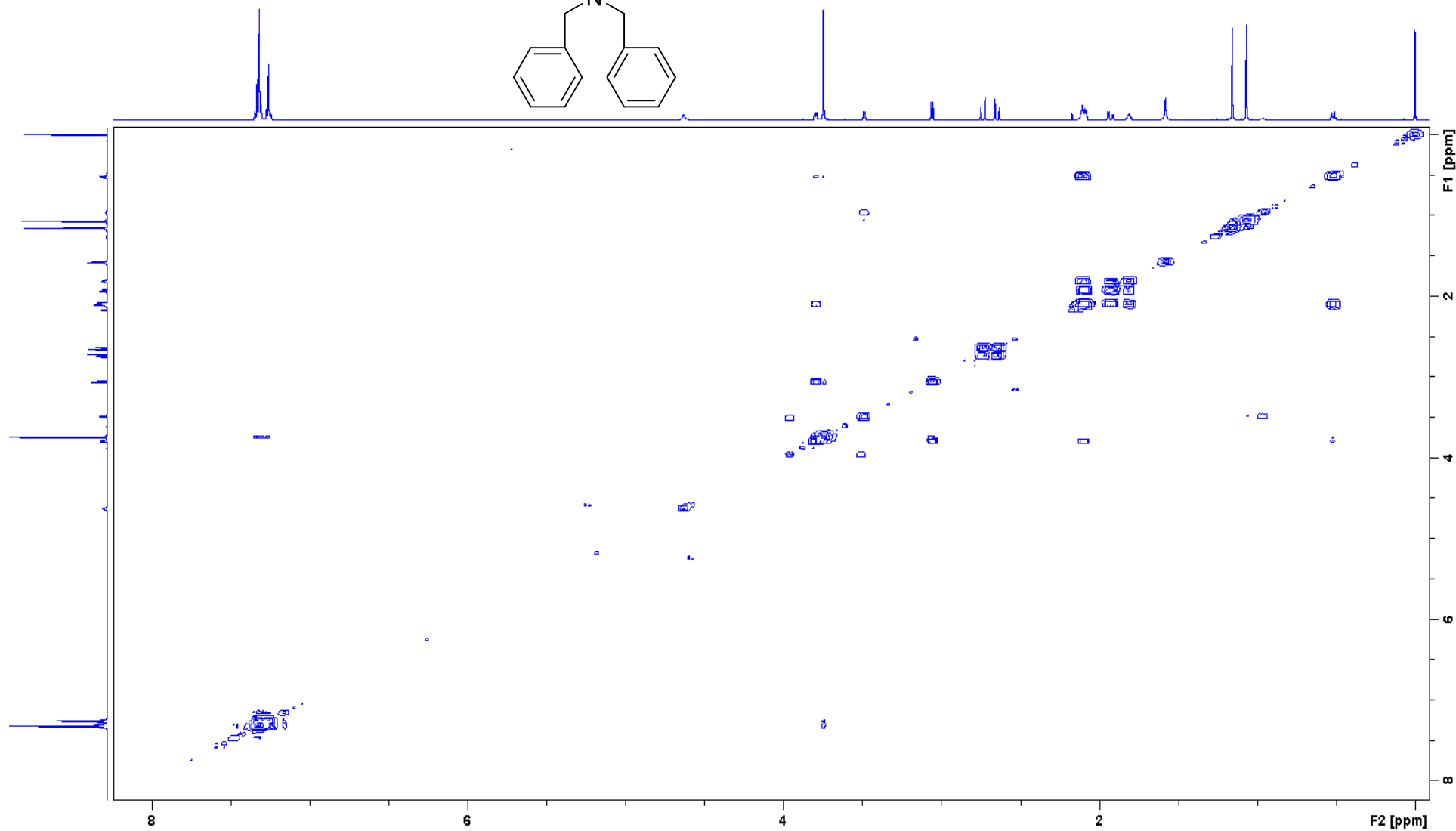
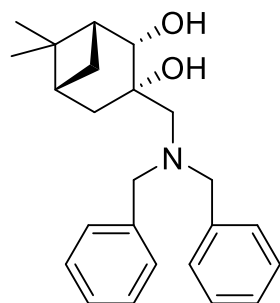
HSQC for compound **10**



HMBC for compound **10**

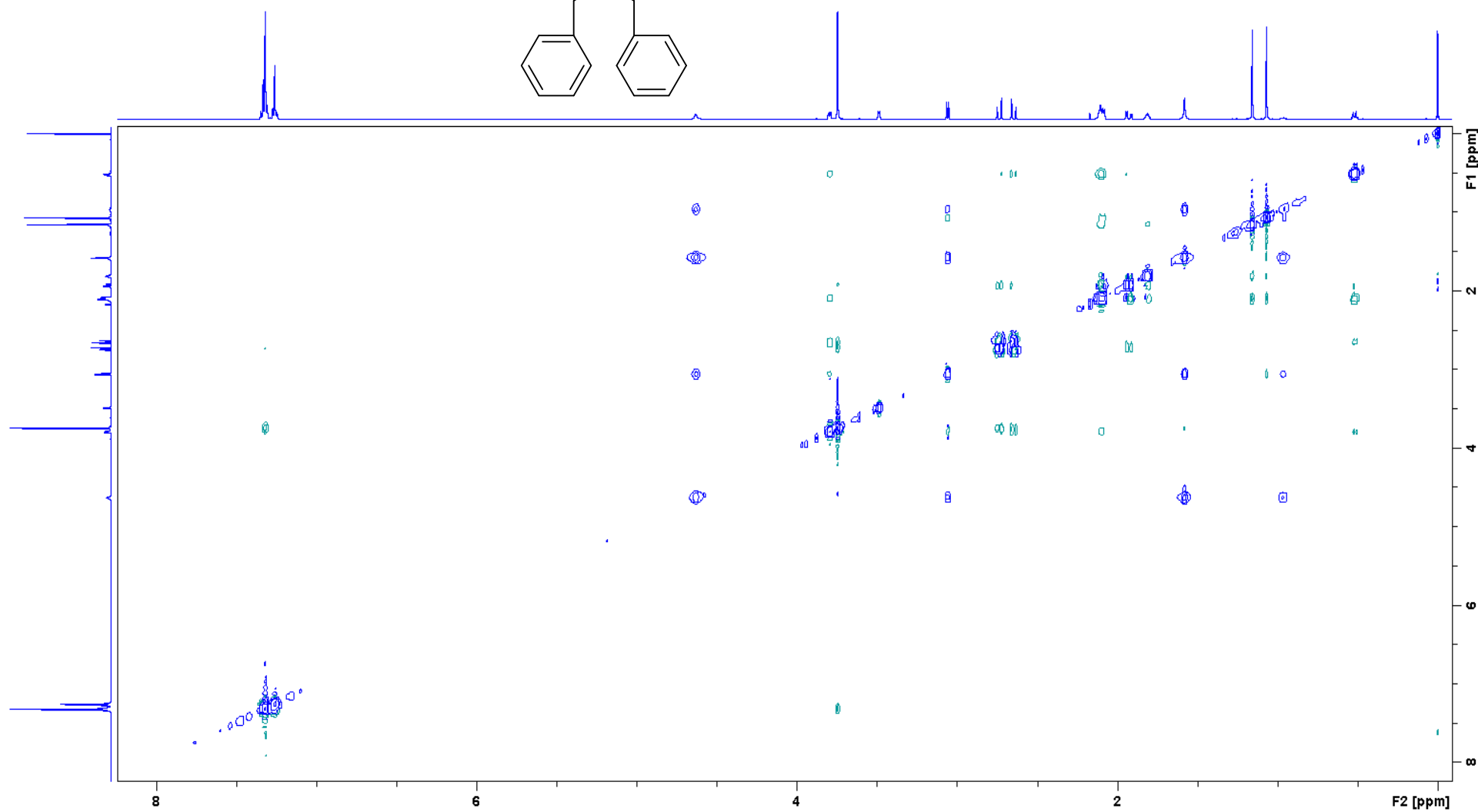
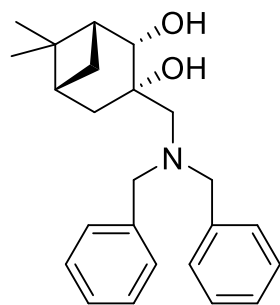


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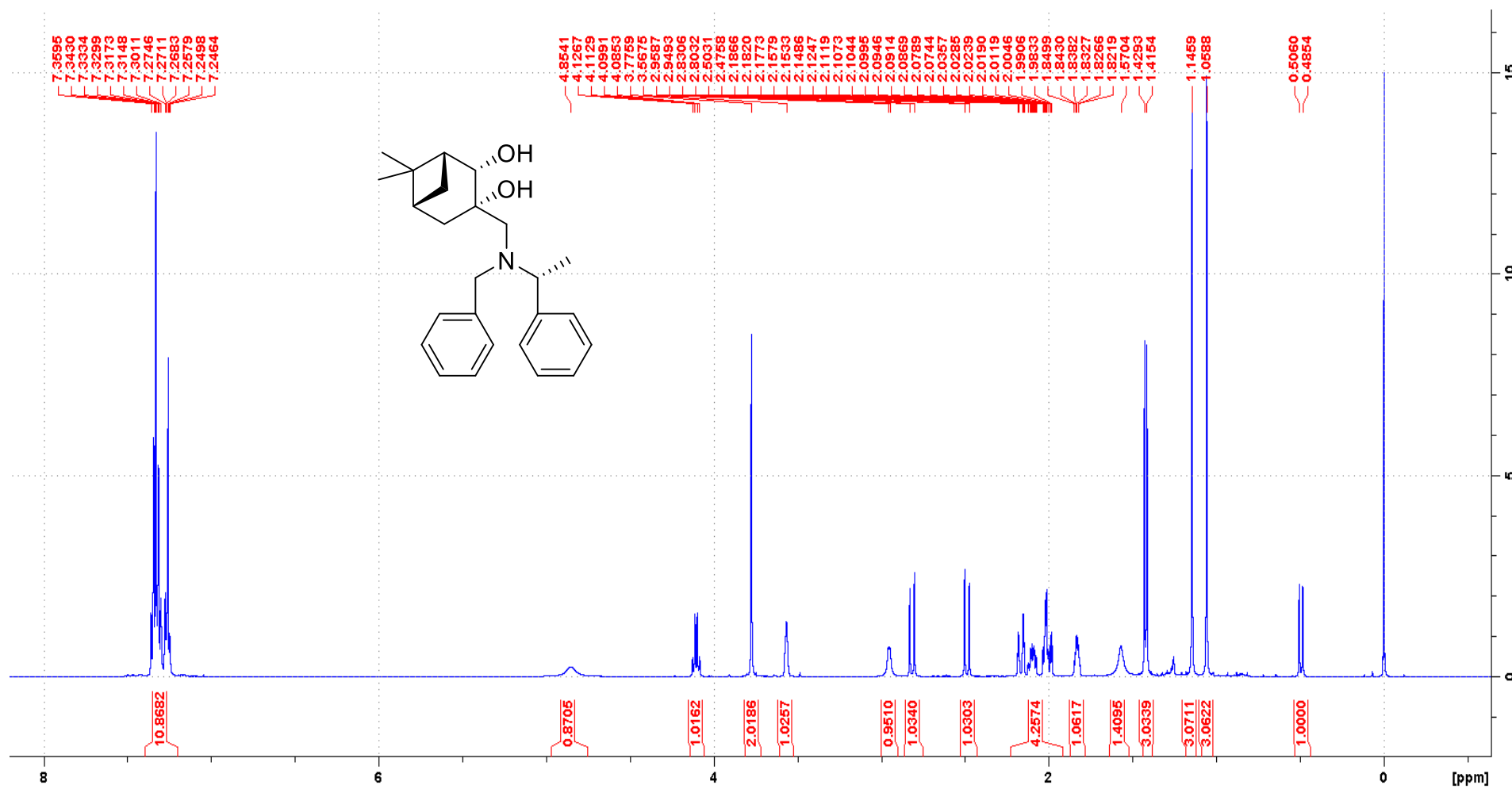




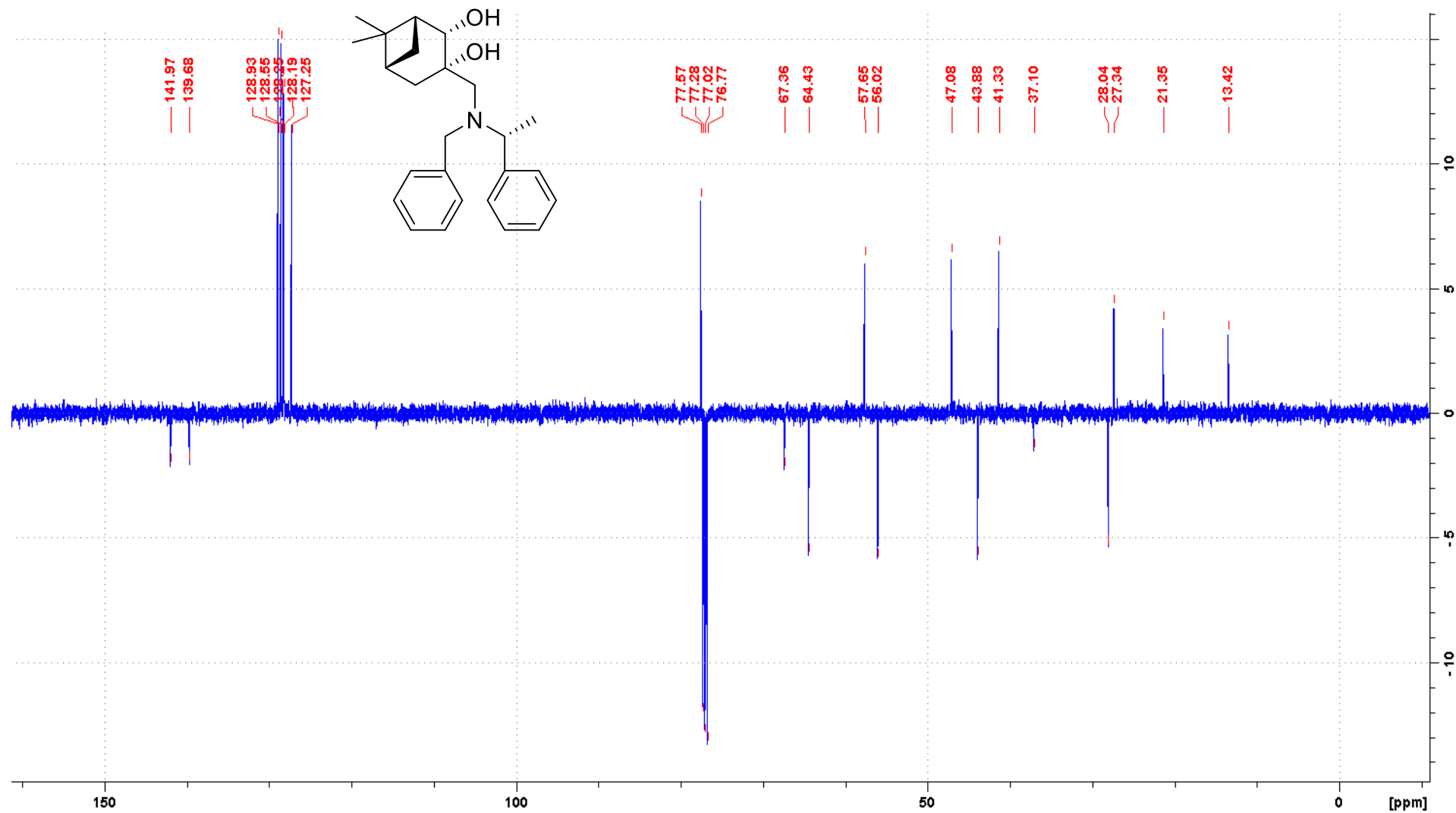
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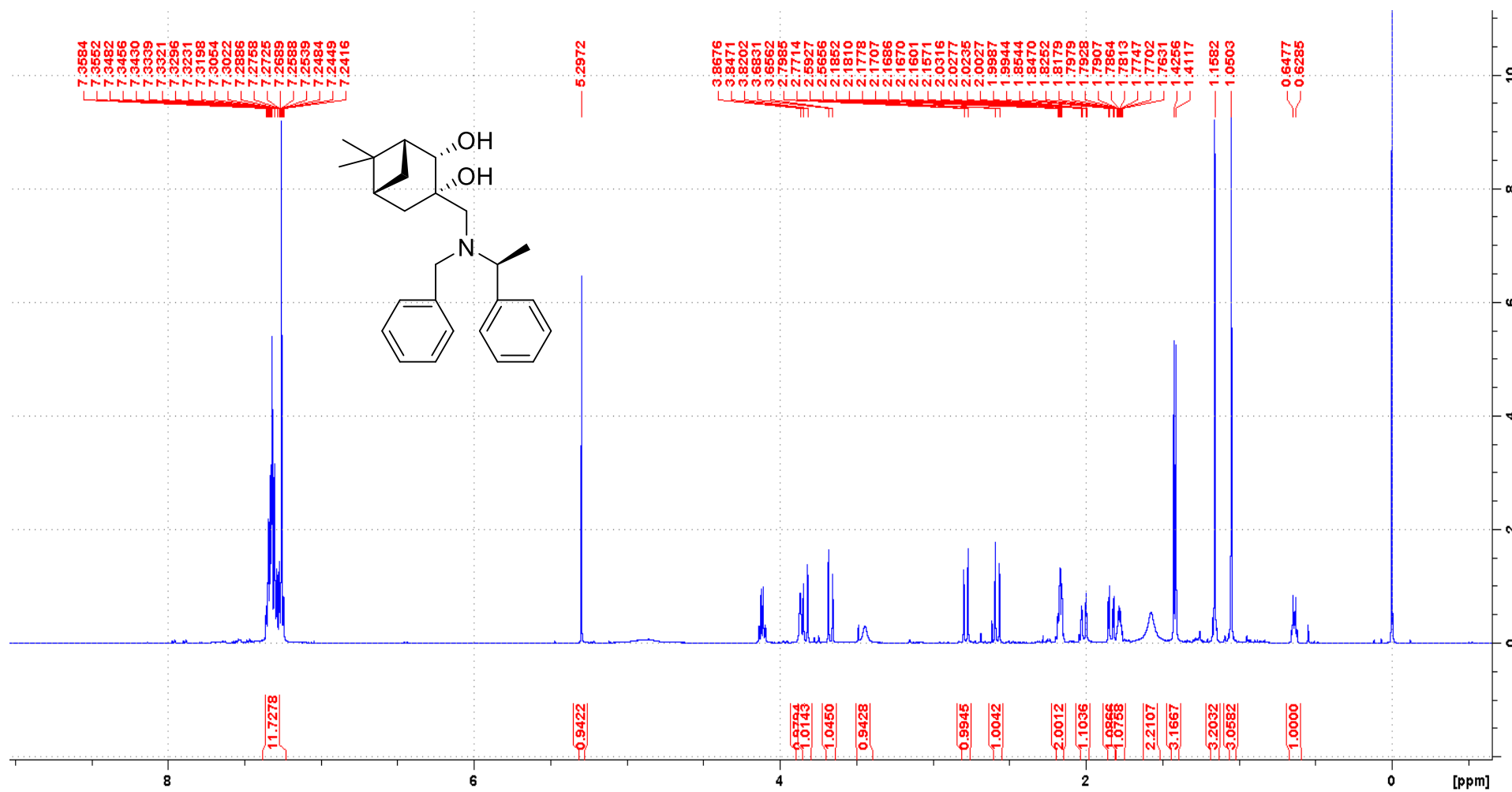
<sup>1</sup>H-NMR for compound **11**



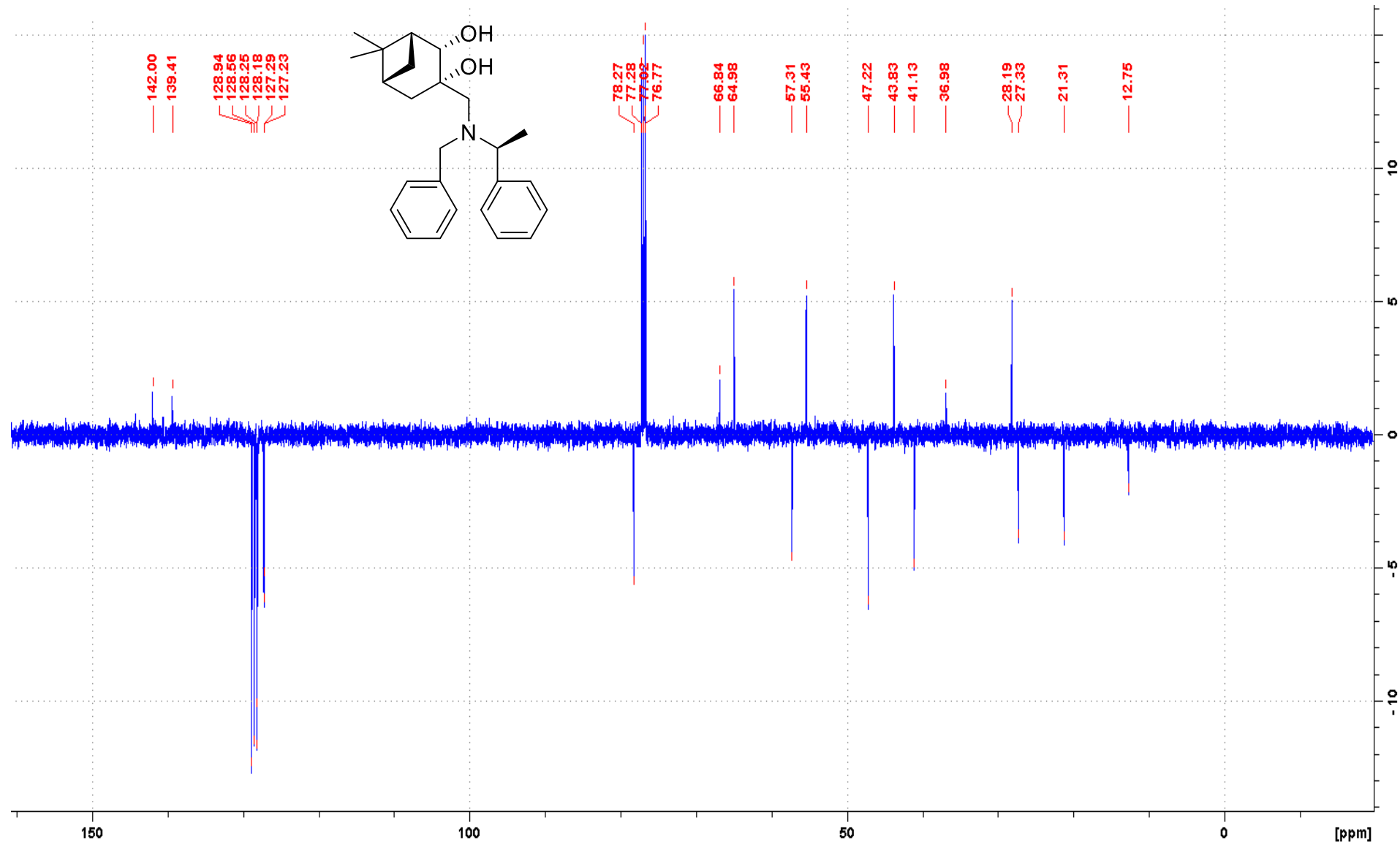
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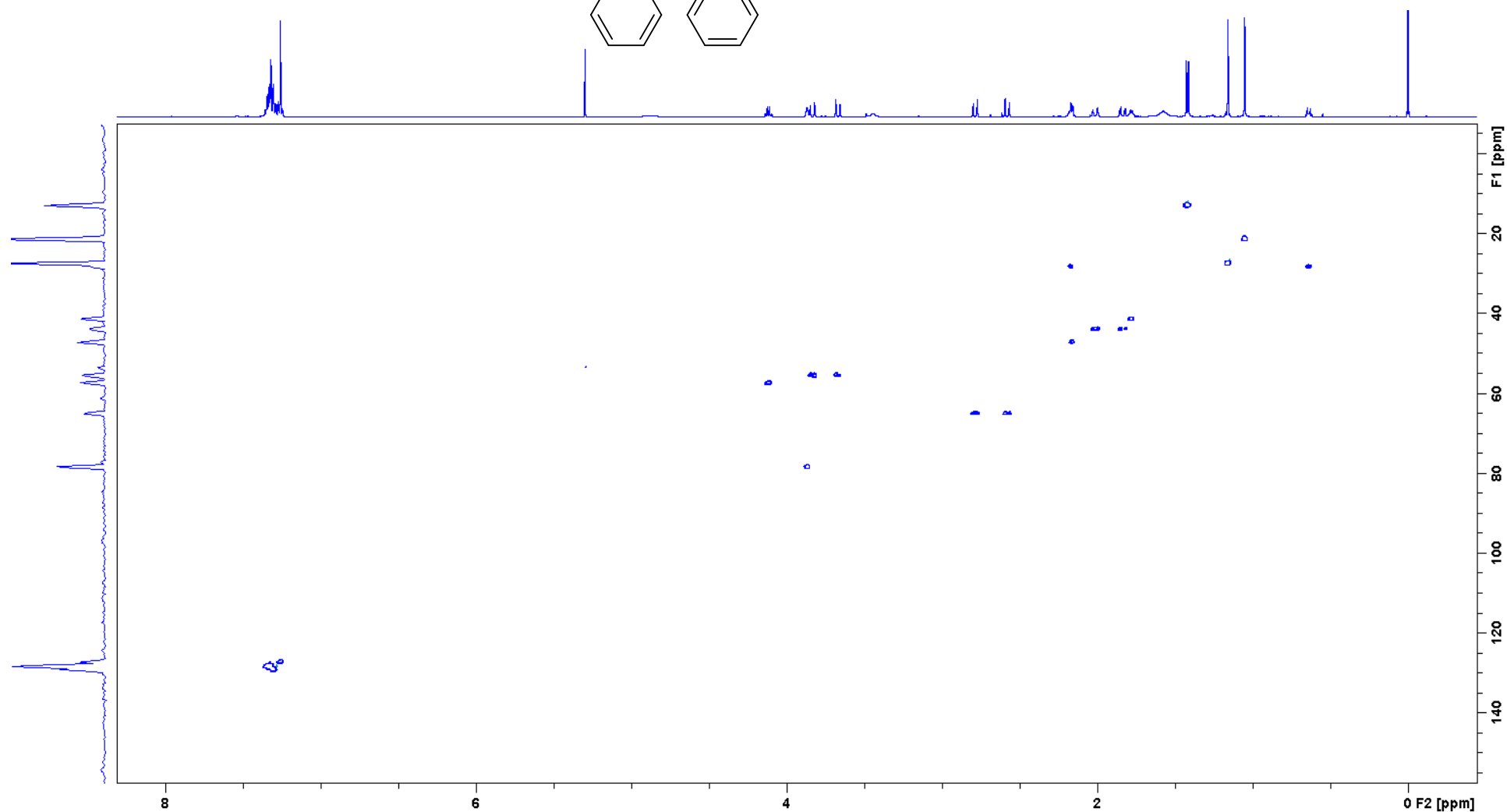
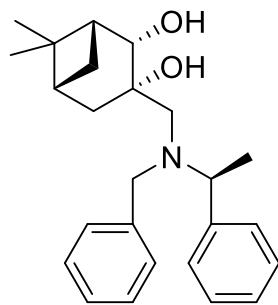
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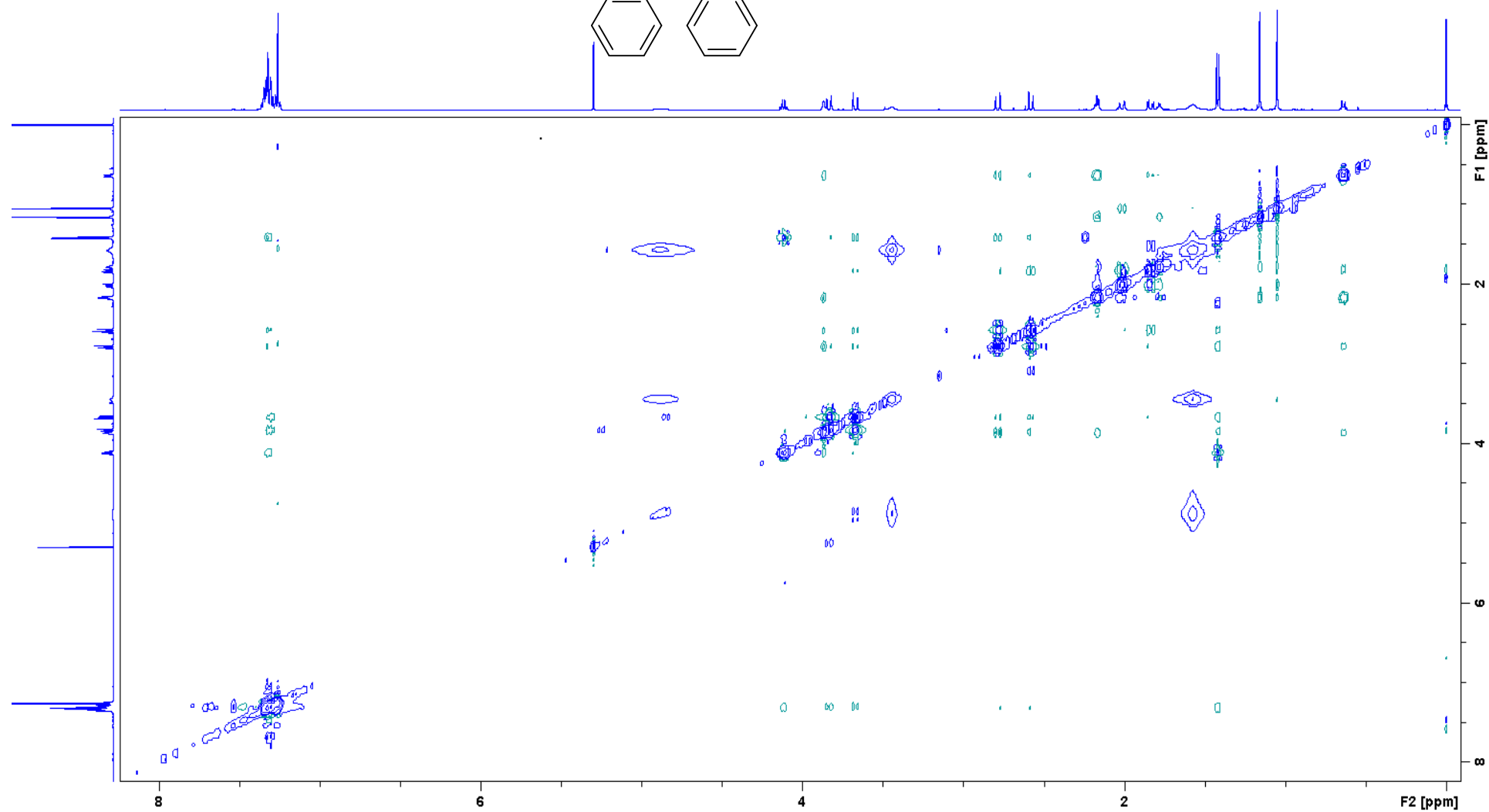
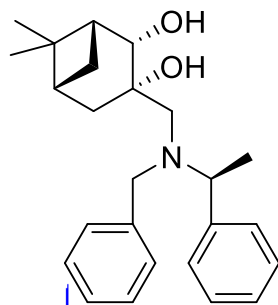
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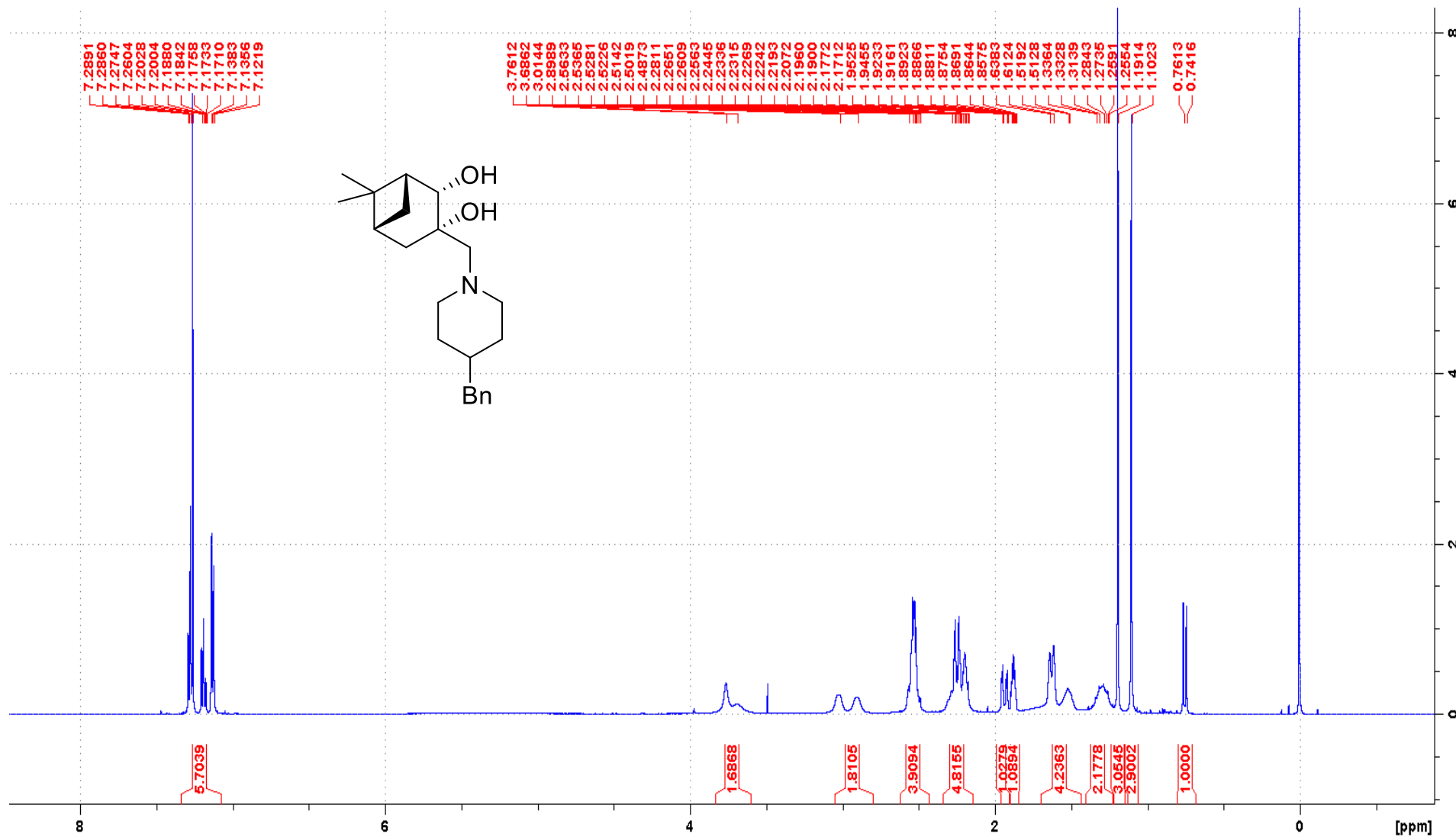
HSQC for compound **12**



NOESY for compound **12**

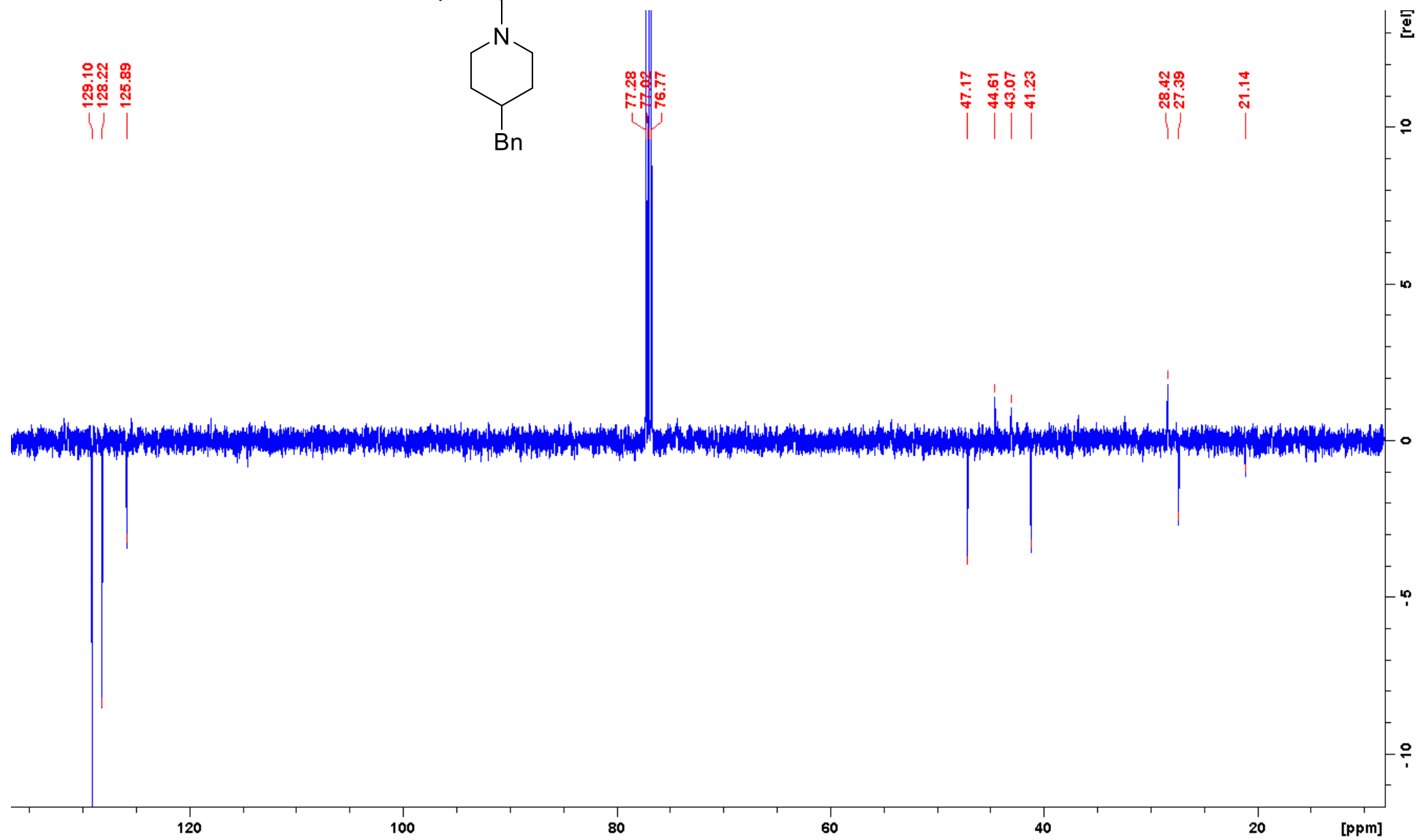
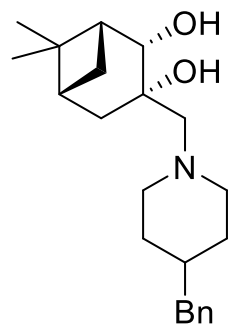


<sup>1</sup>H-NMR for compound **13**

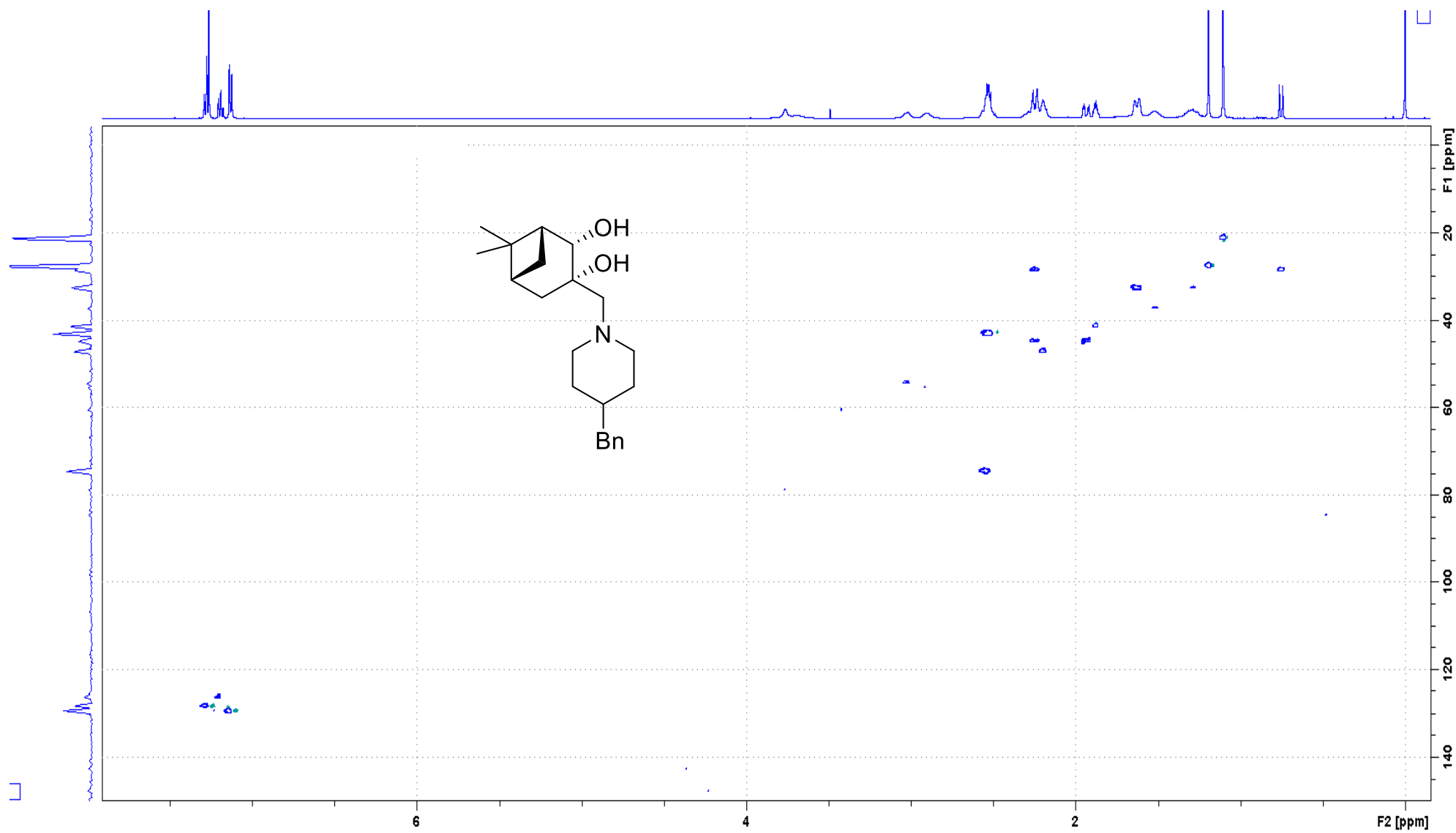




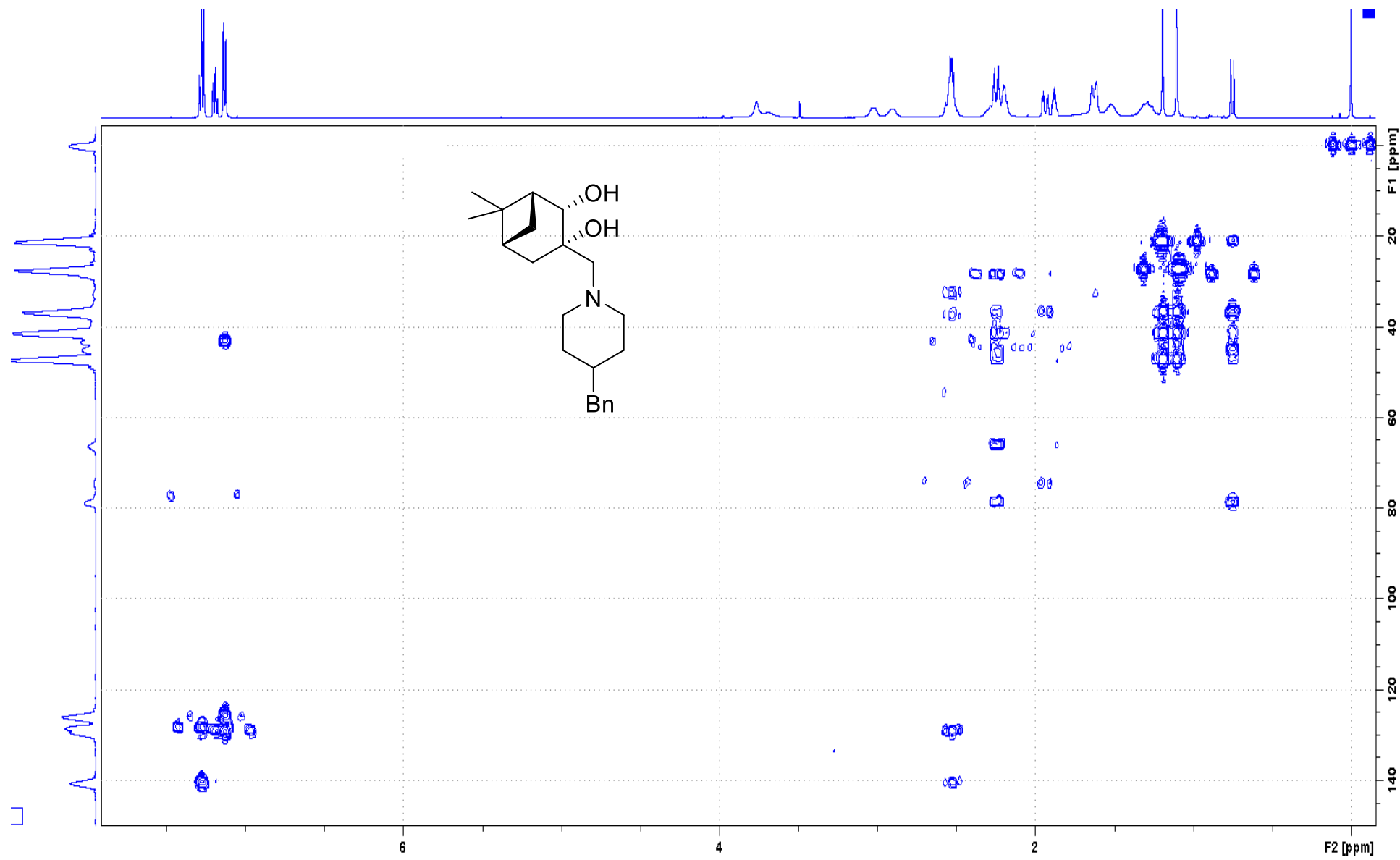
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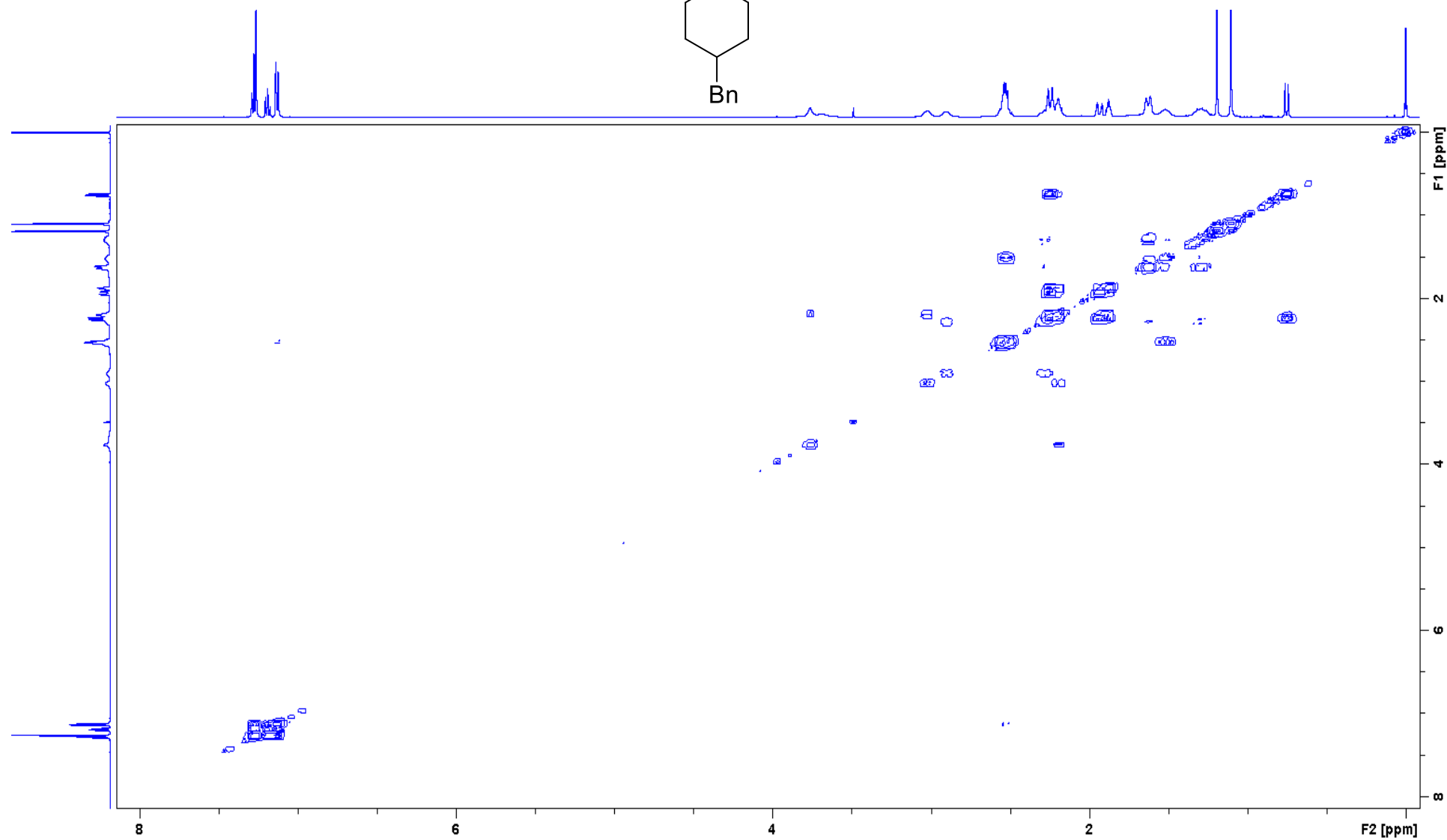
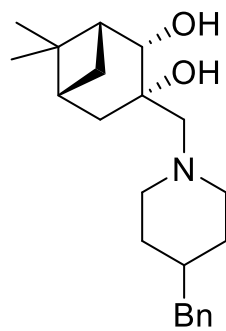
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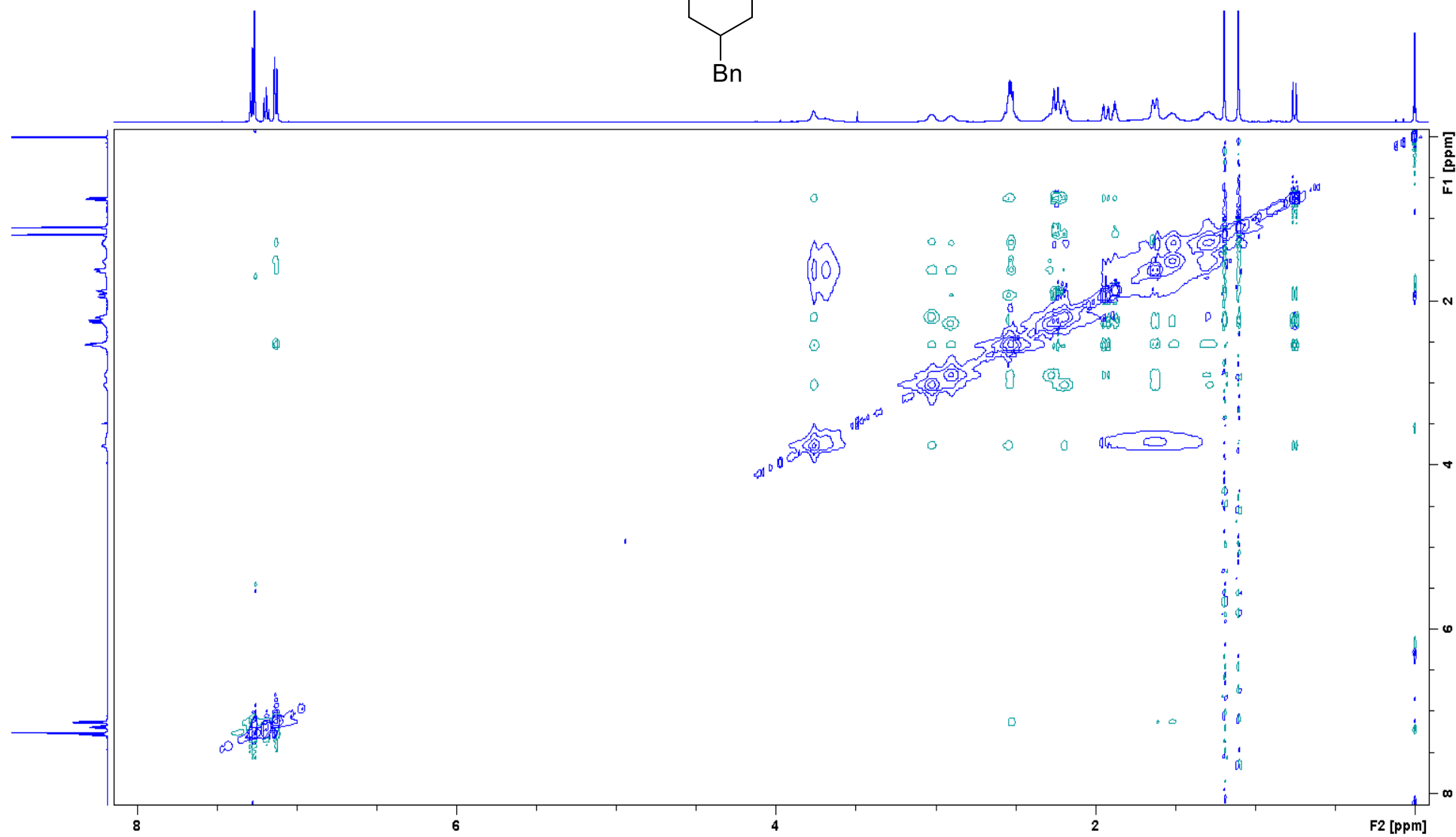
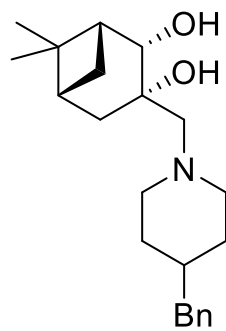
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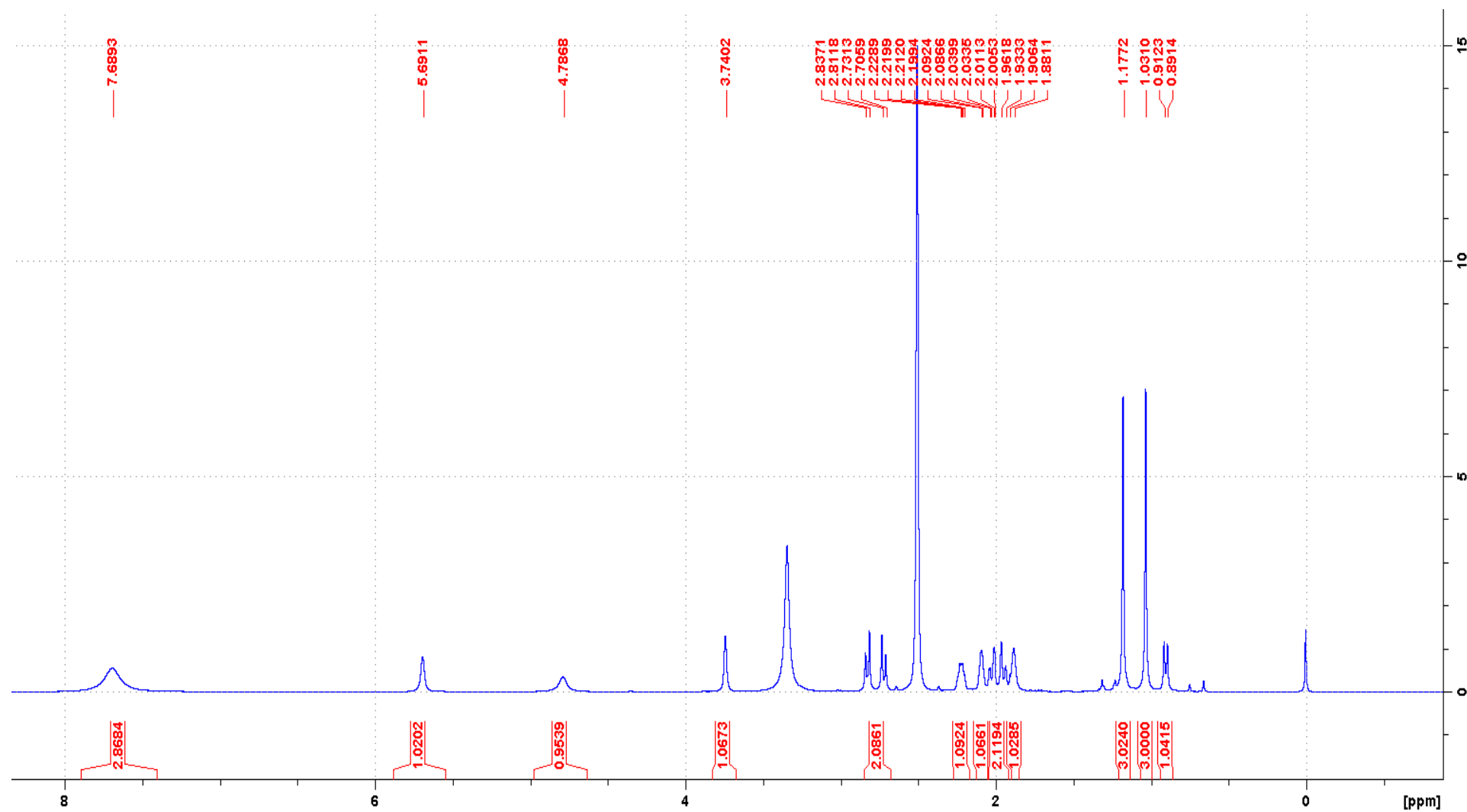
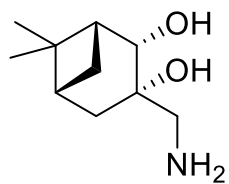
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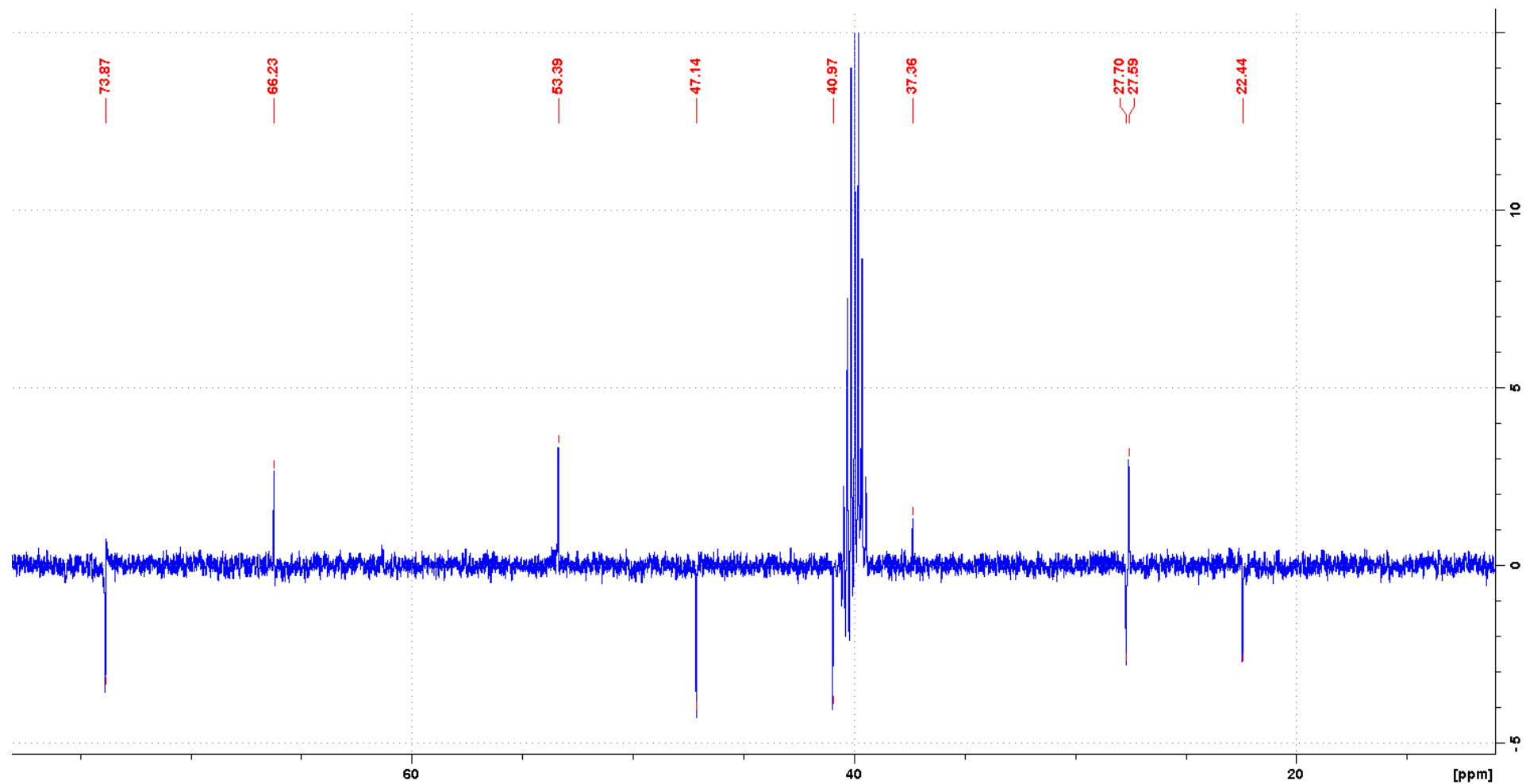
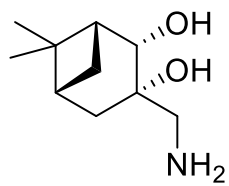
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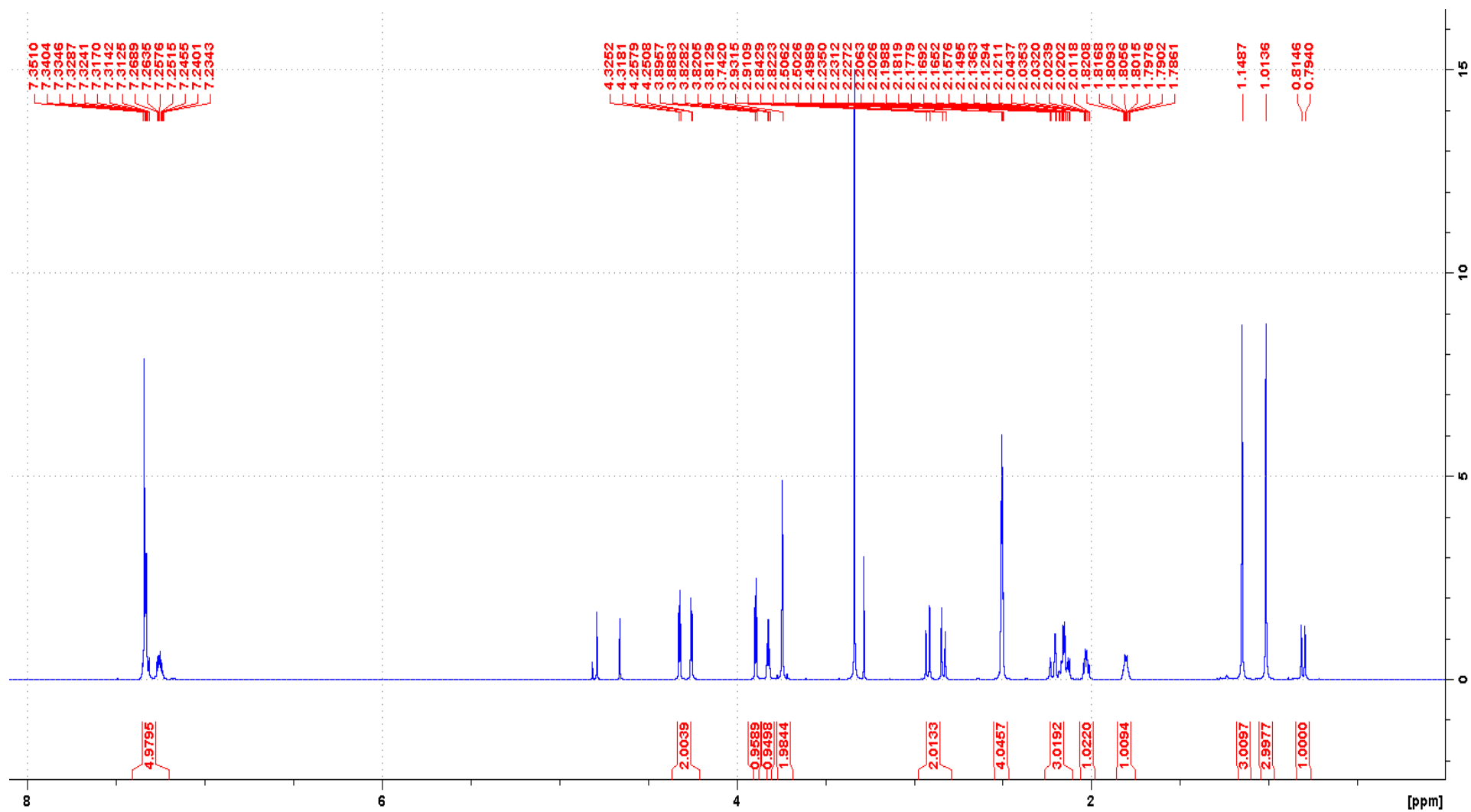
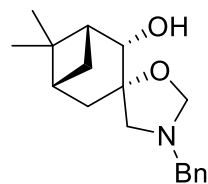
<sup>1</sup>H-NMR for compound **14**



$^{13}\text{C}$ -NMR for compound **14**

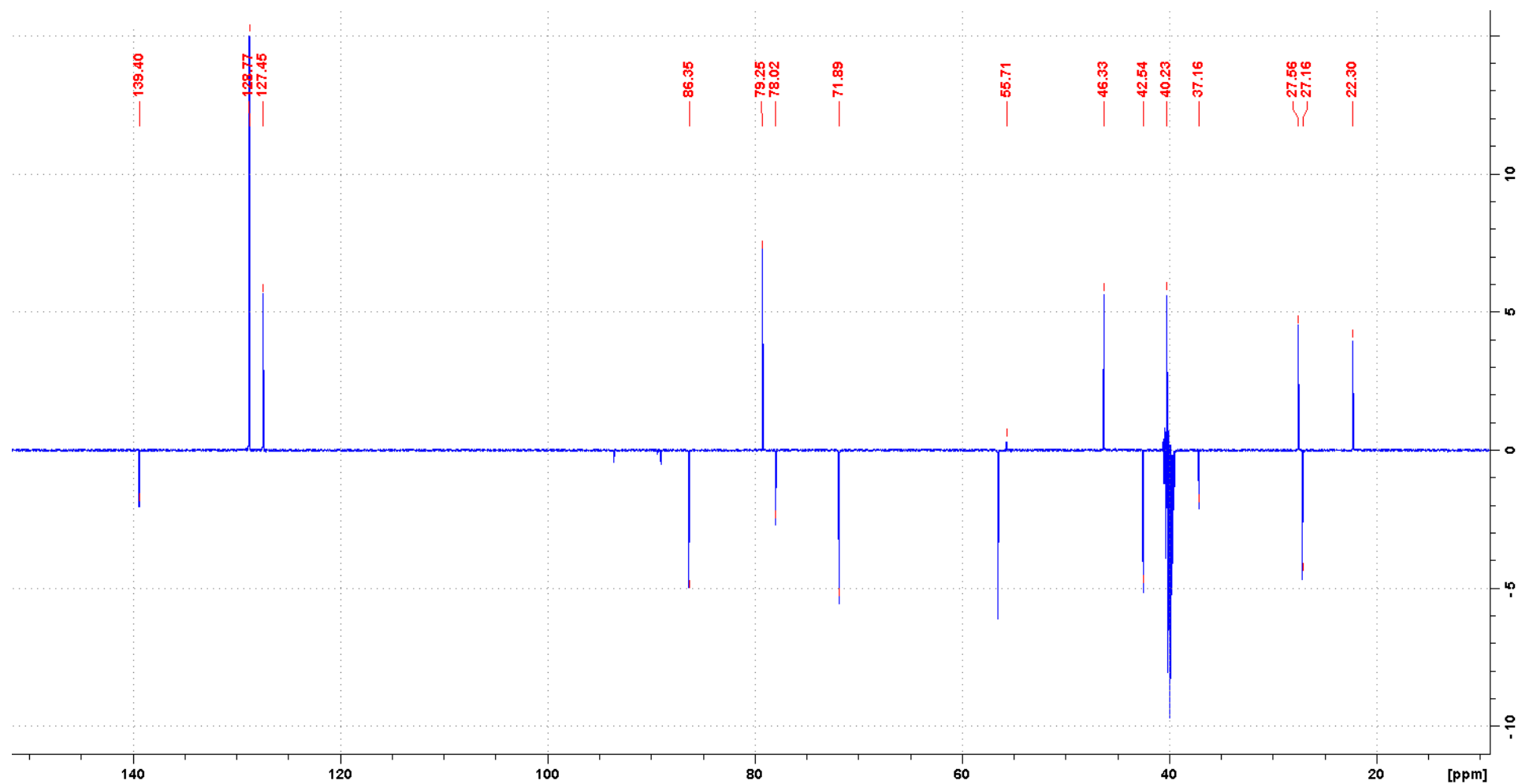
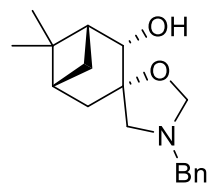


<sup>1</sup>H-NMR for compound **15**

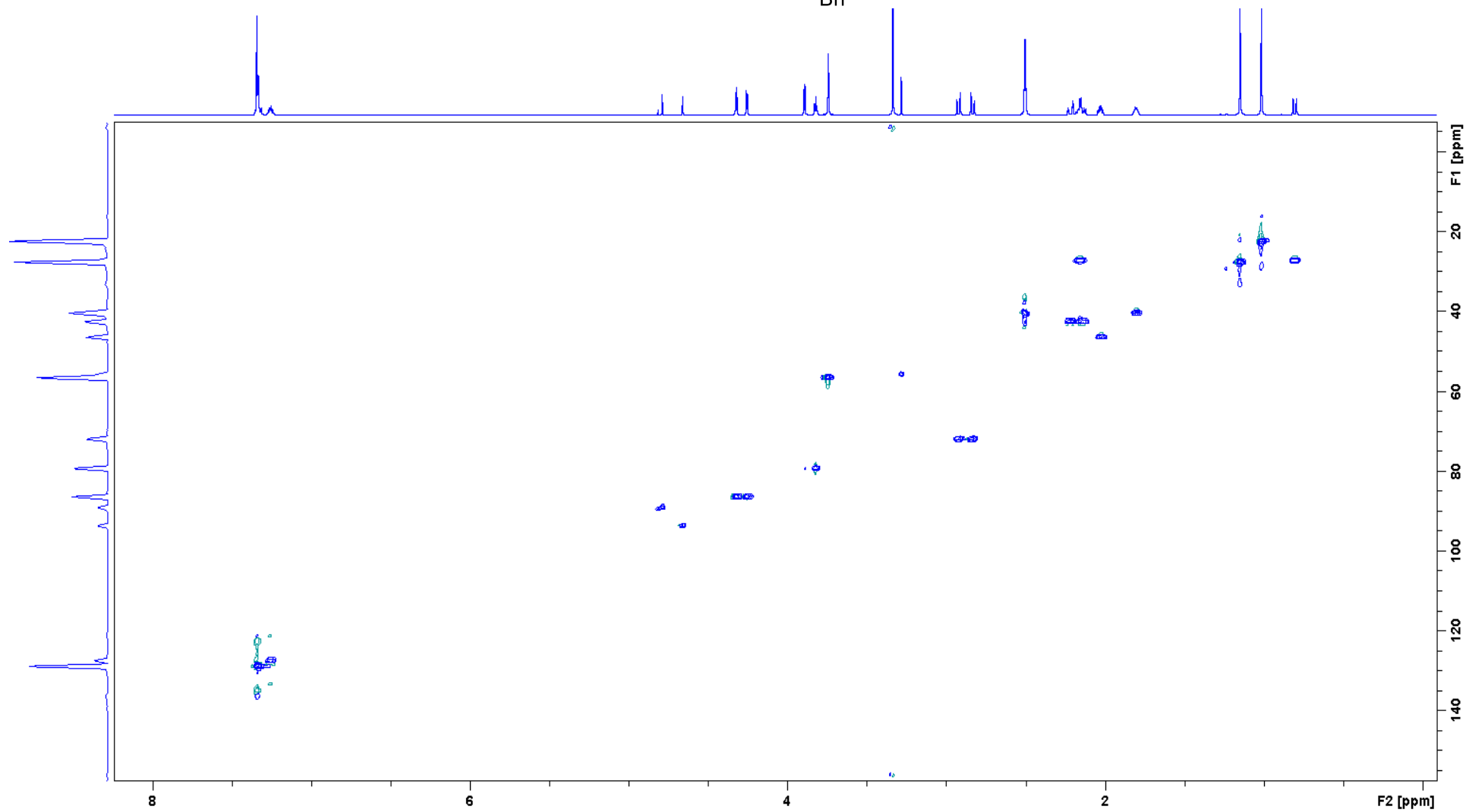
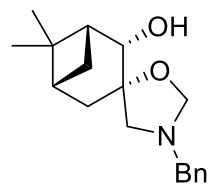




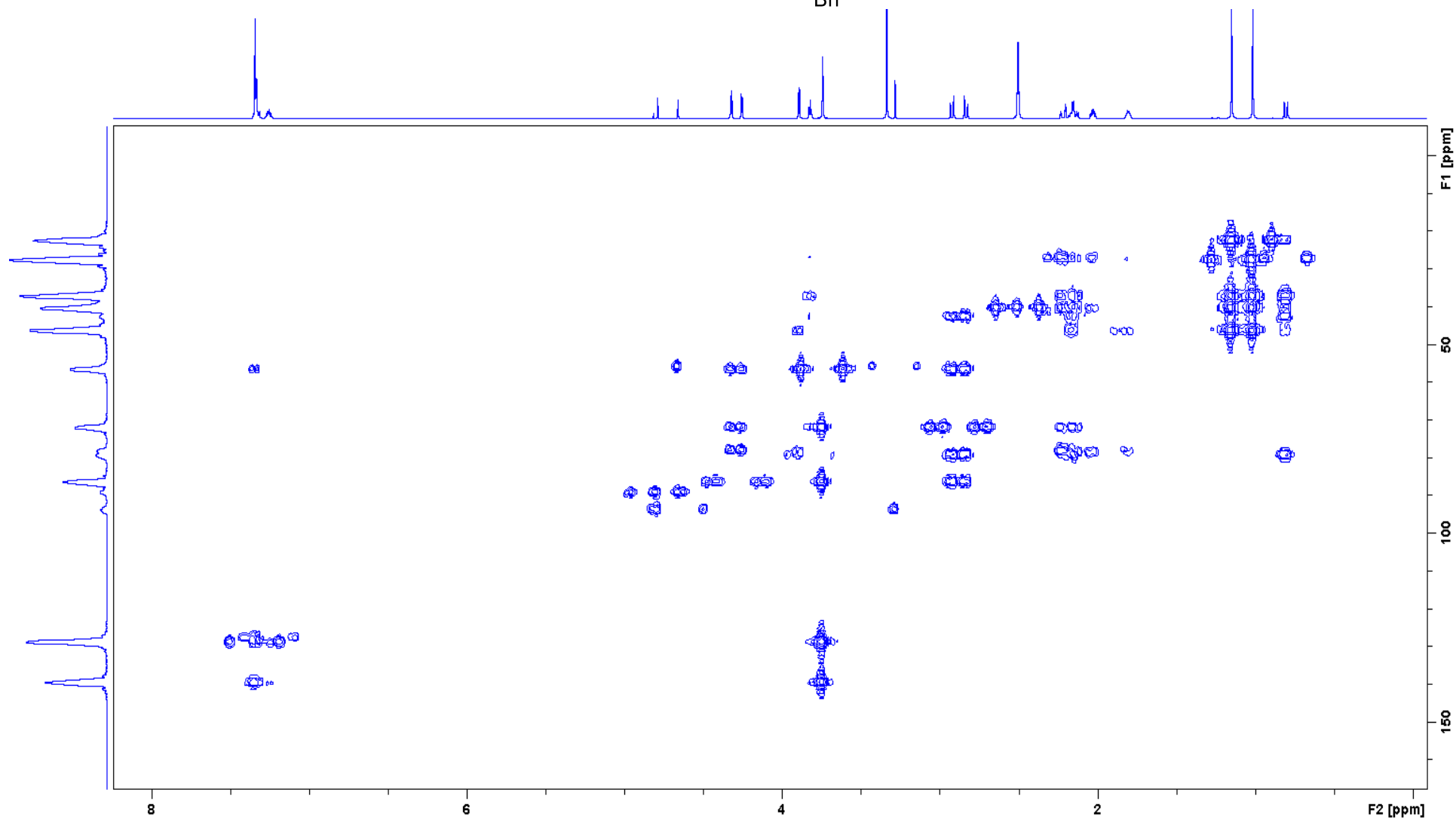
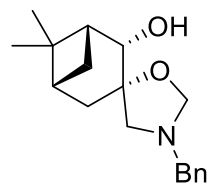
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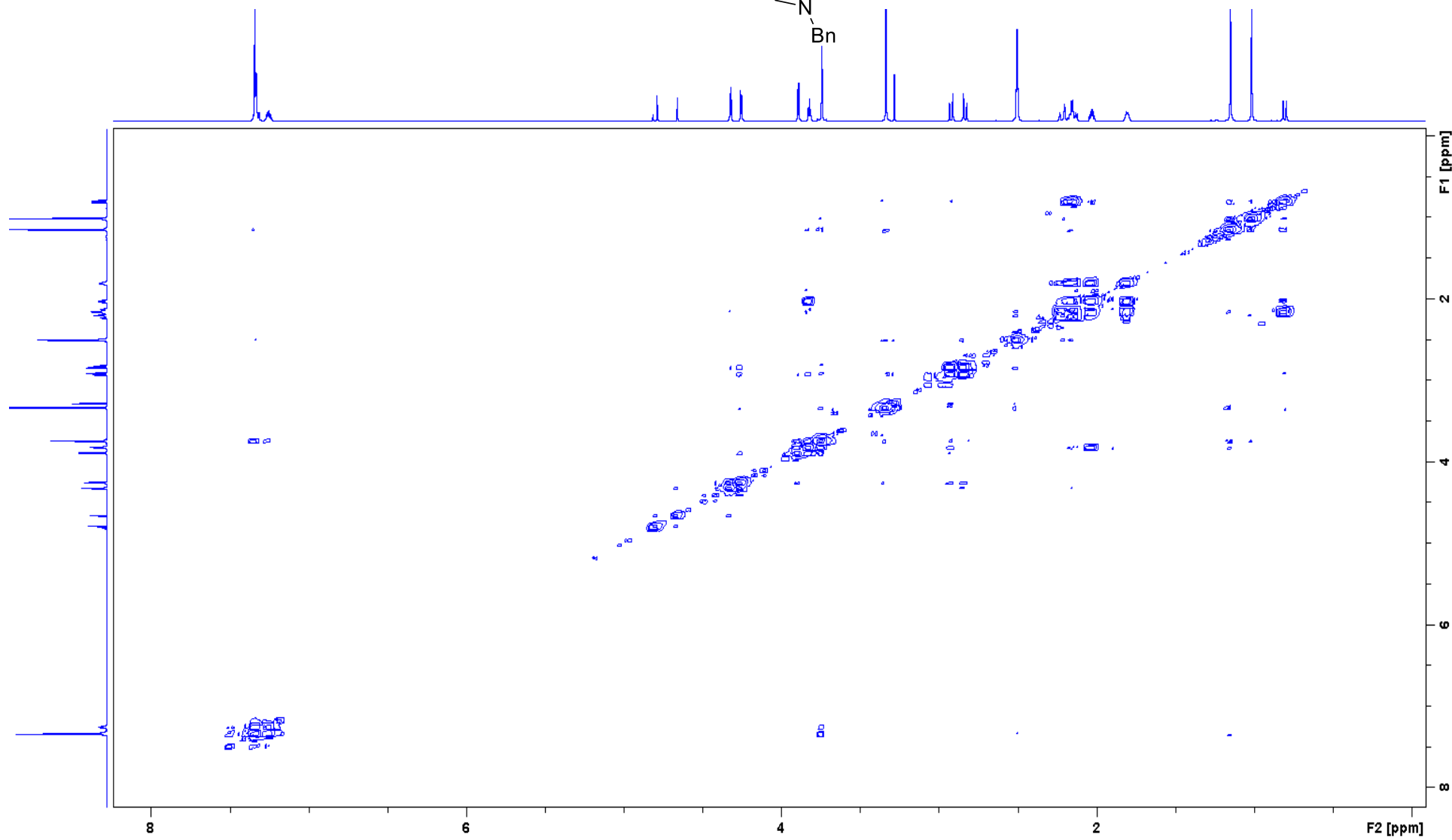
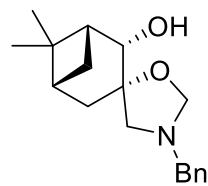
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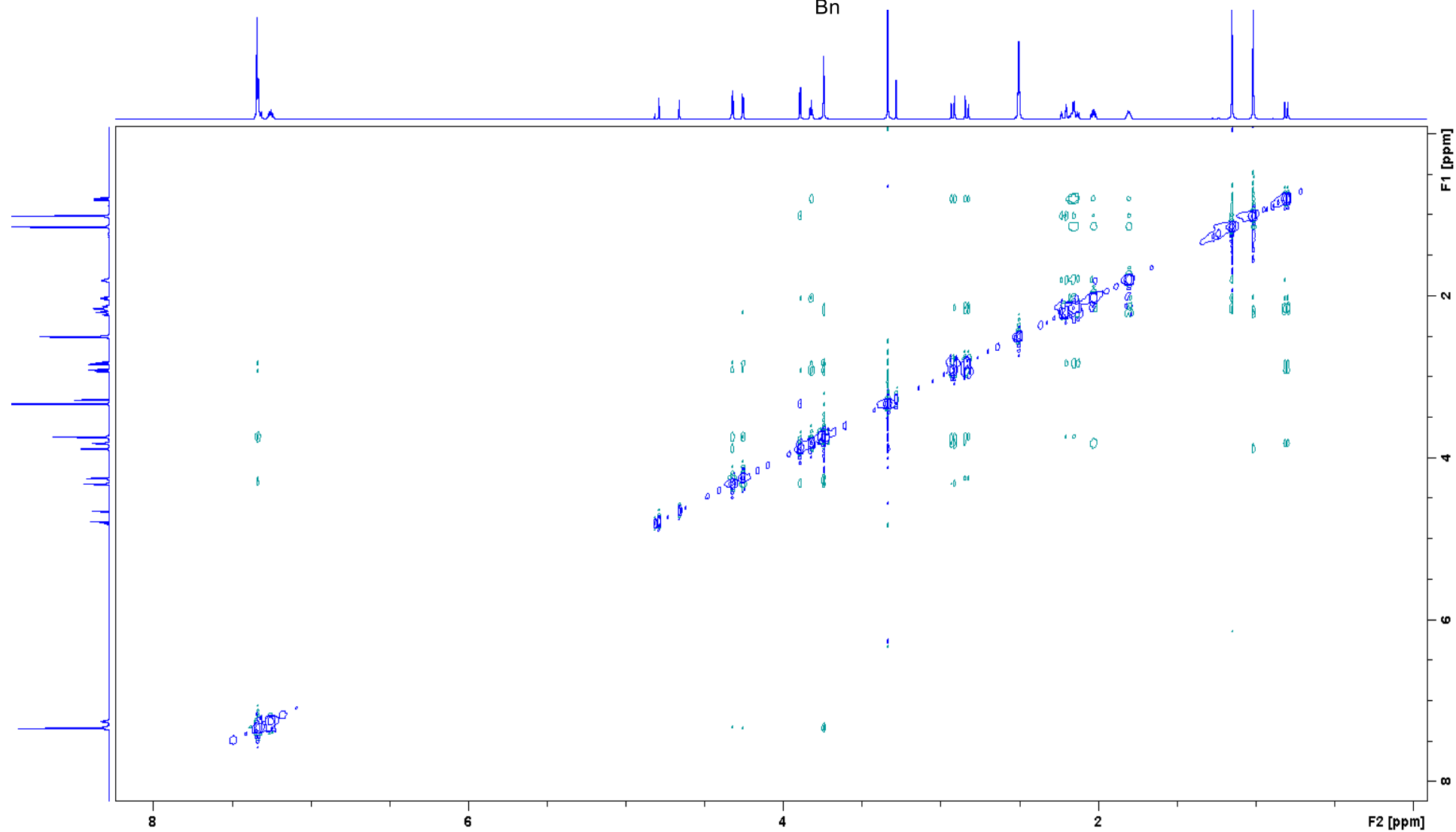
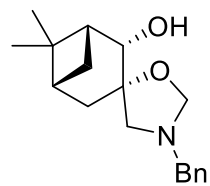
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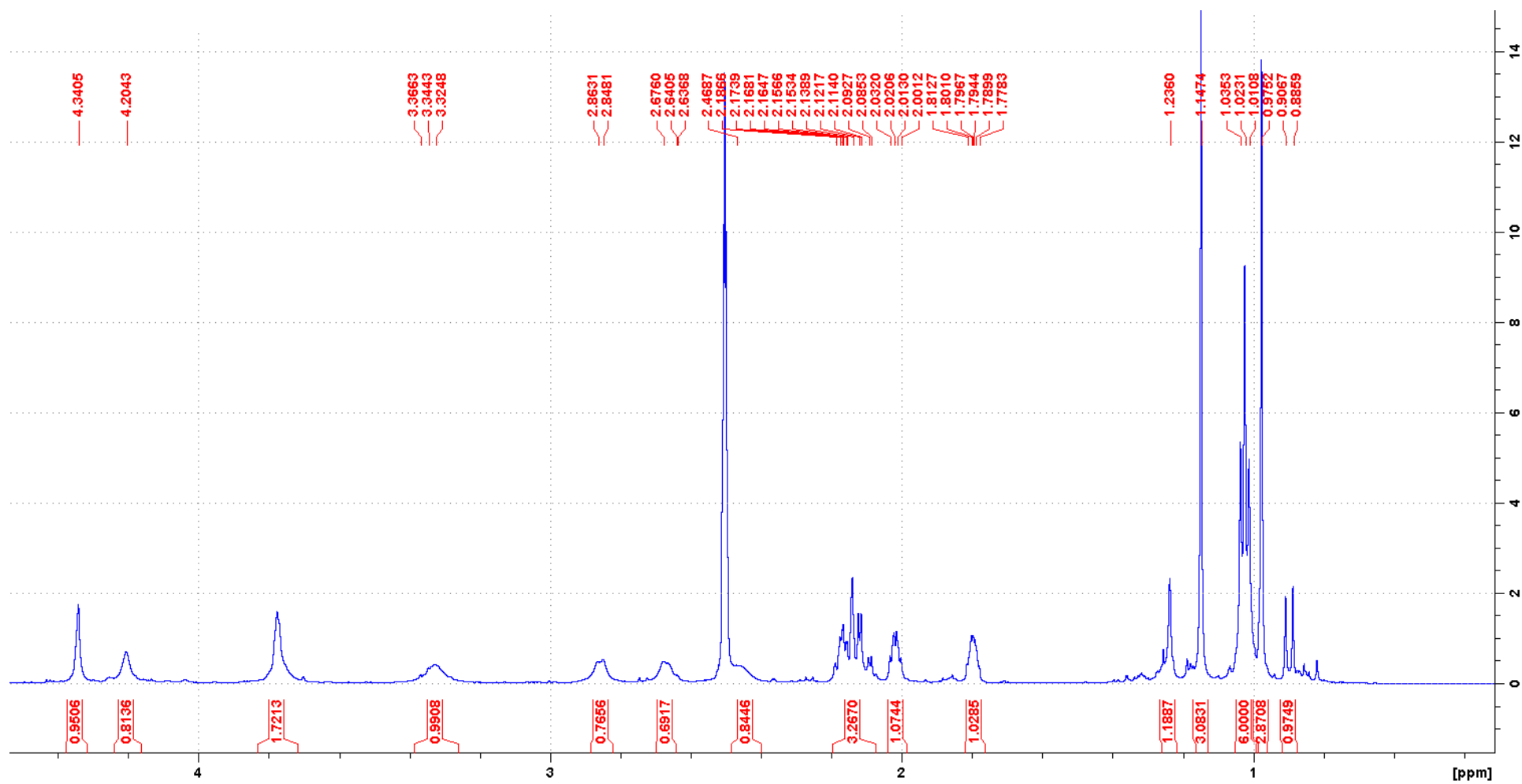
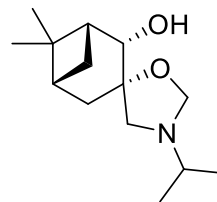
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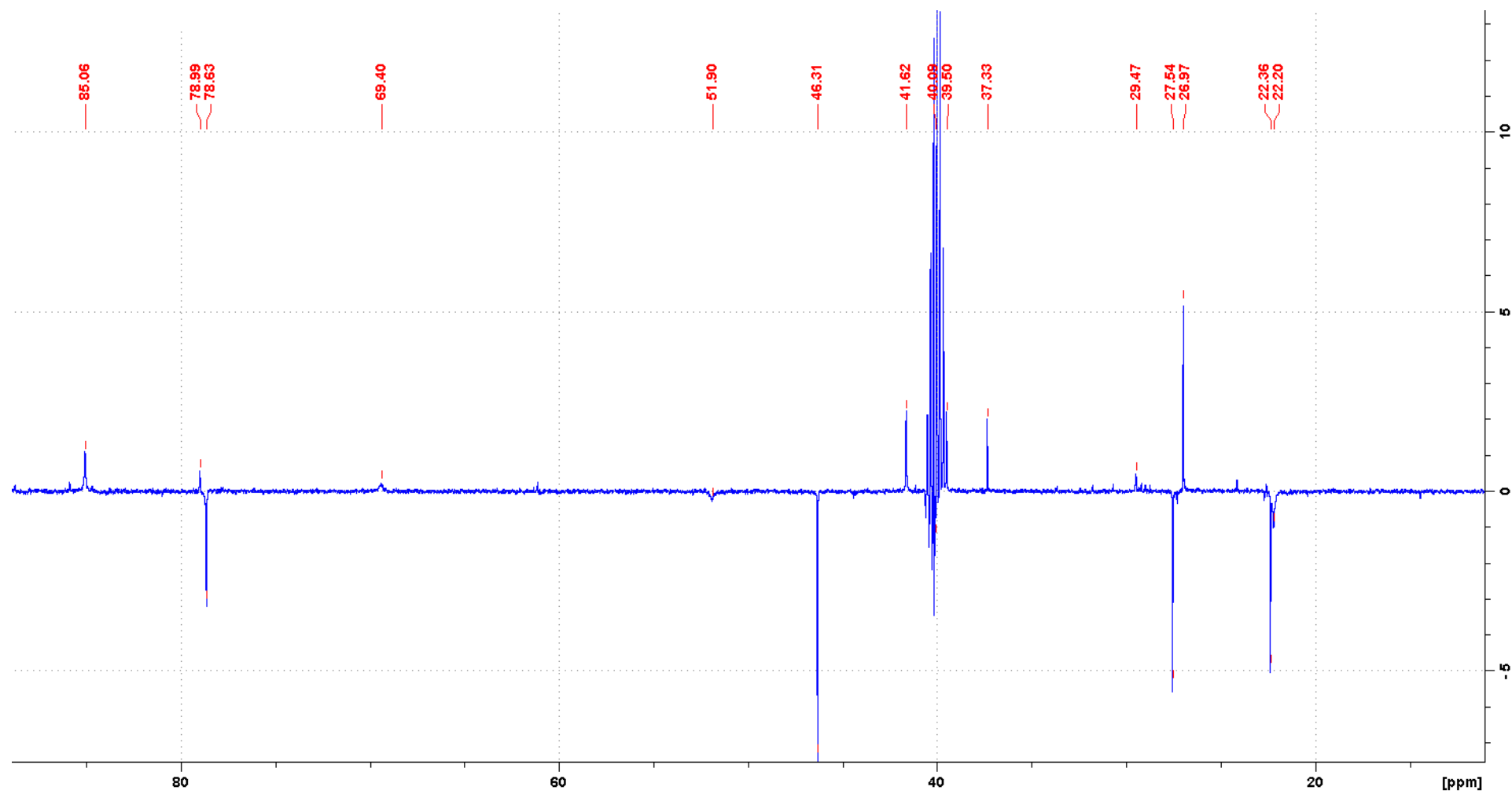
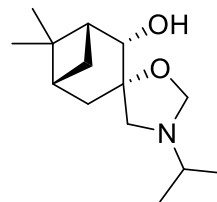
NOESY for compound **15**



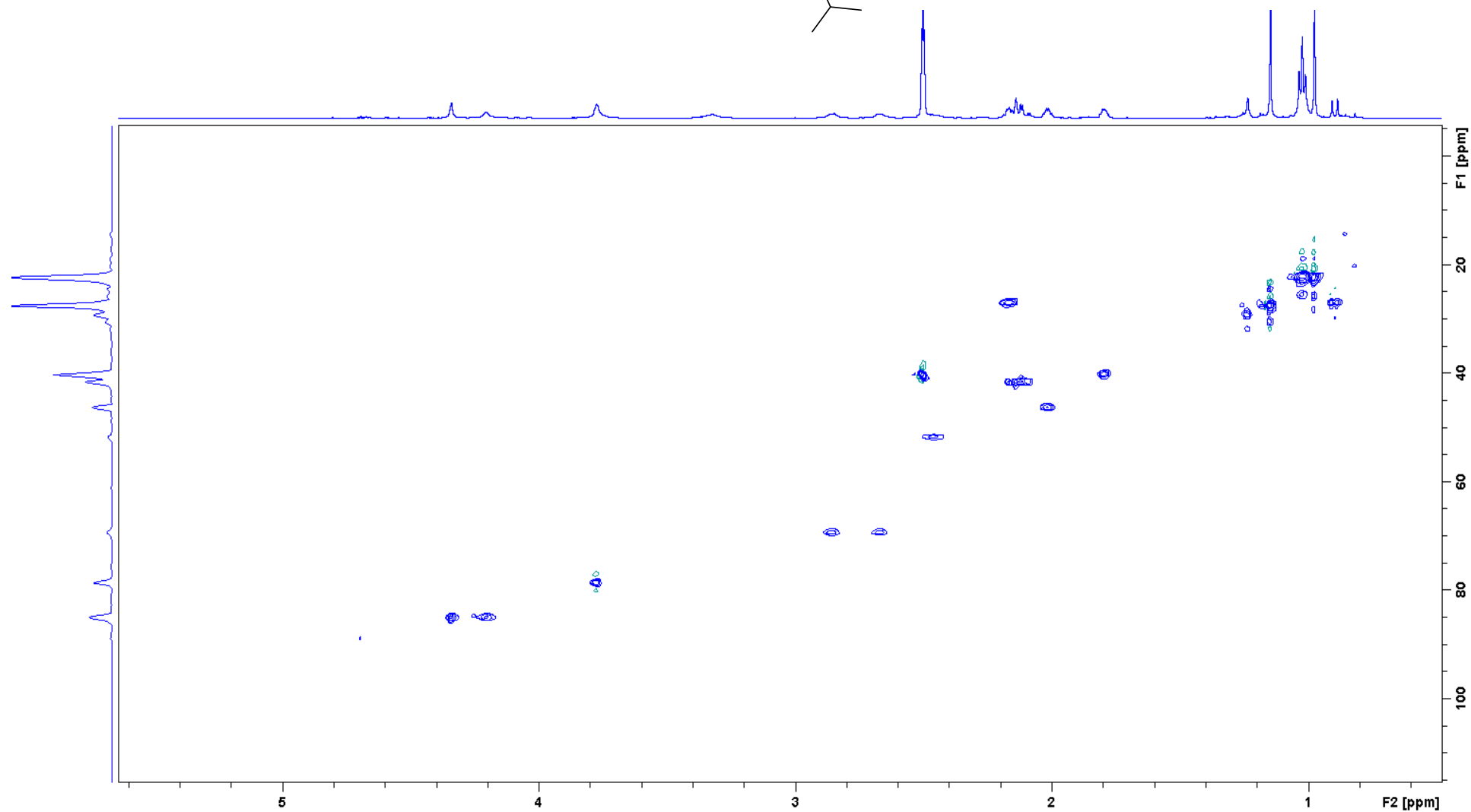
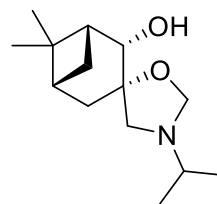
<sup>1</sup>H-NMR for compound **16**



$^{13}\text{C}$ -NMR for compound **16**

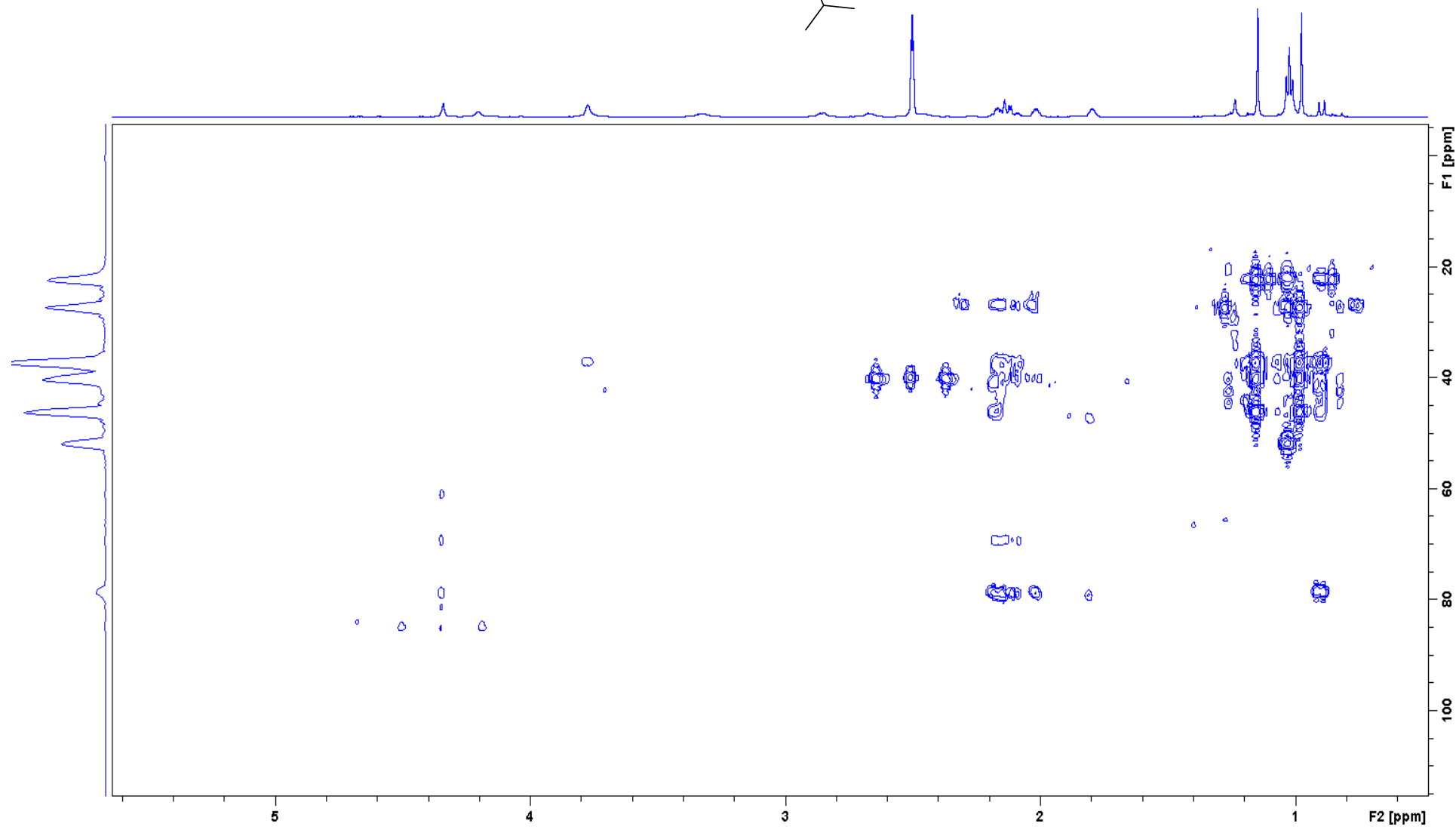
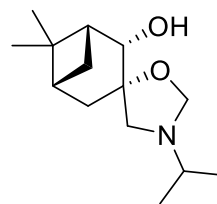


HSQC for compound **16**

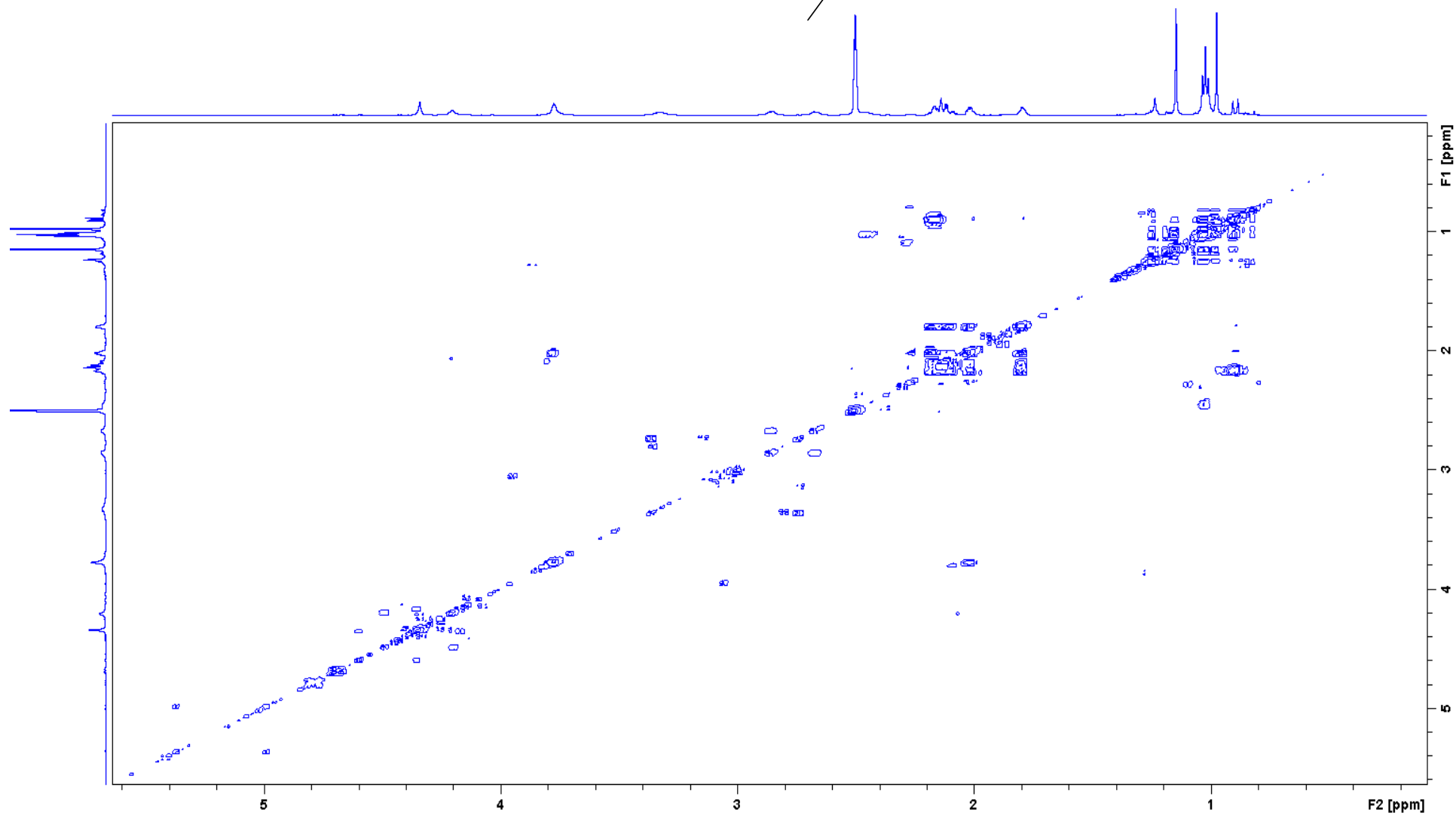
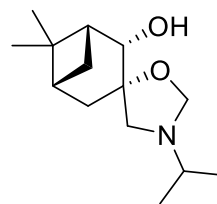




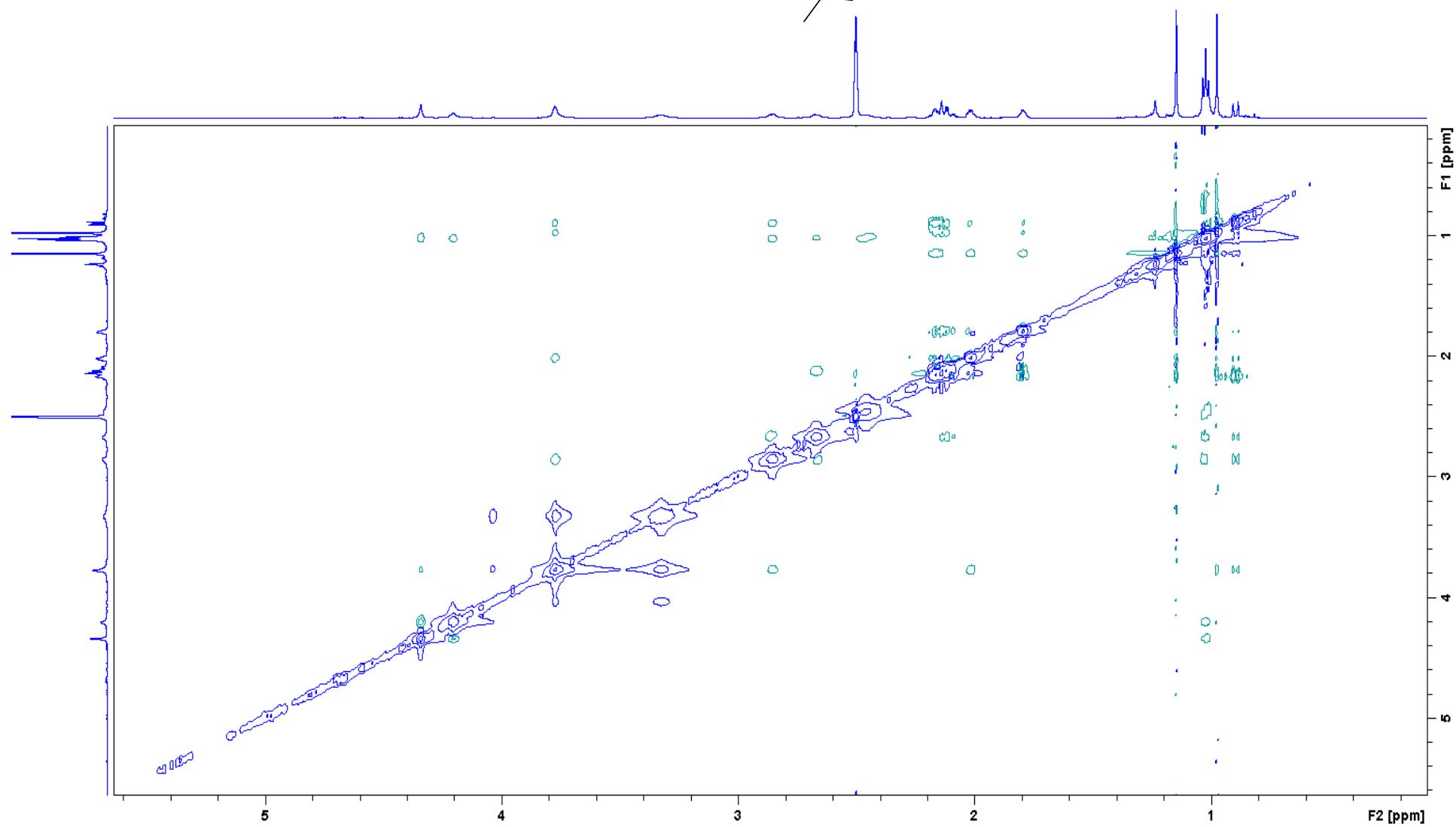
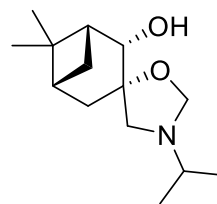
HMBC for compound **16**



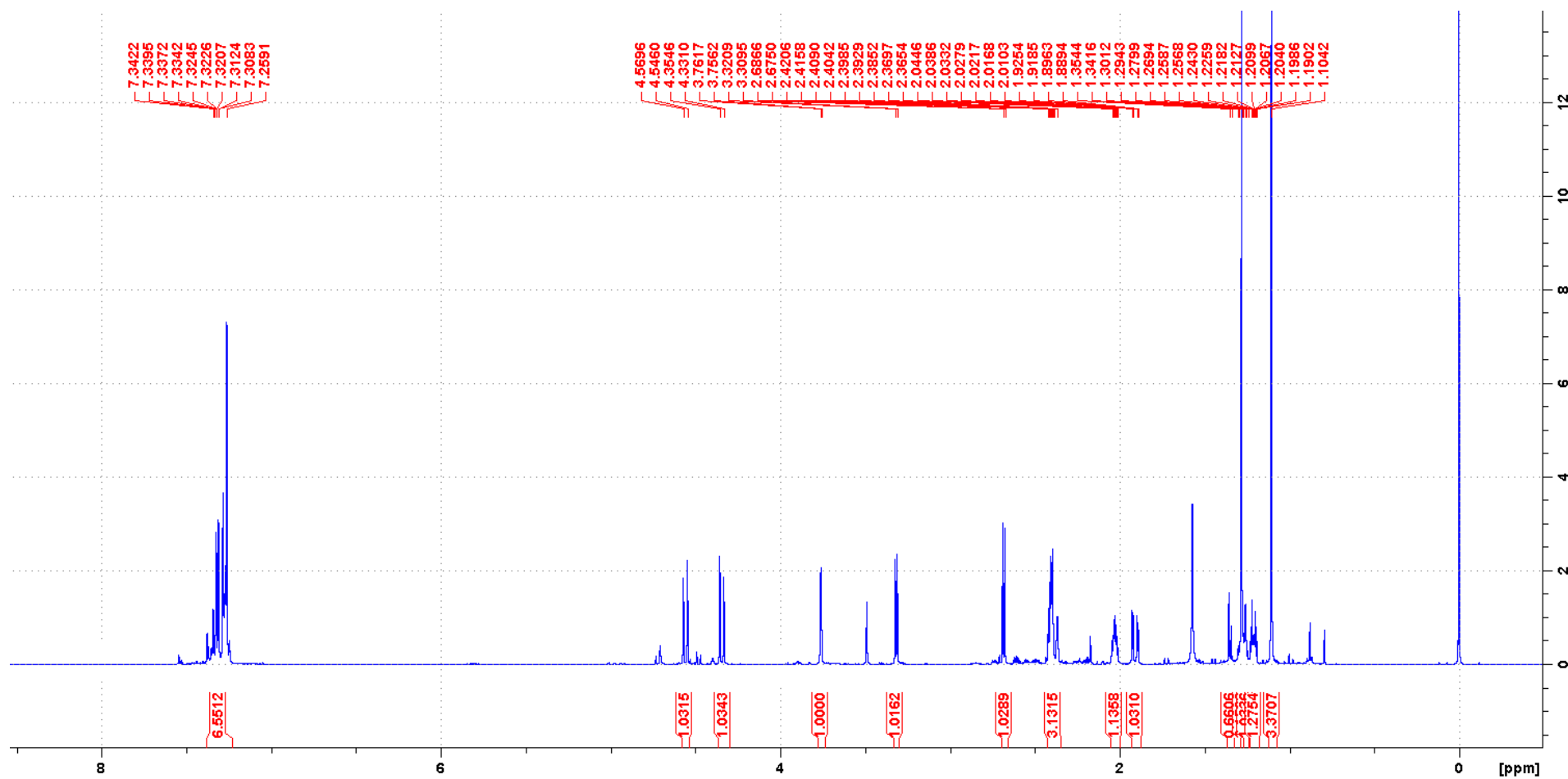
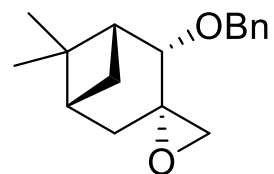
COSY for compound **16**



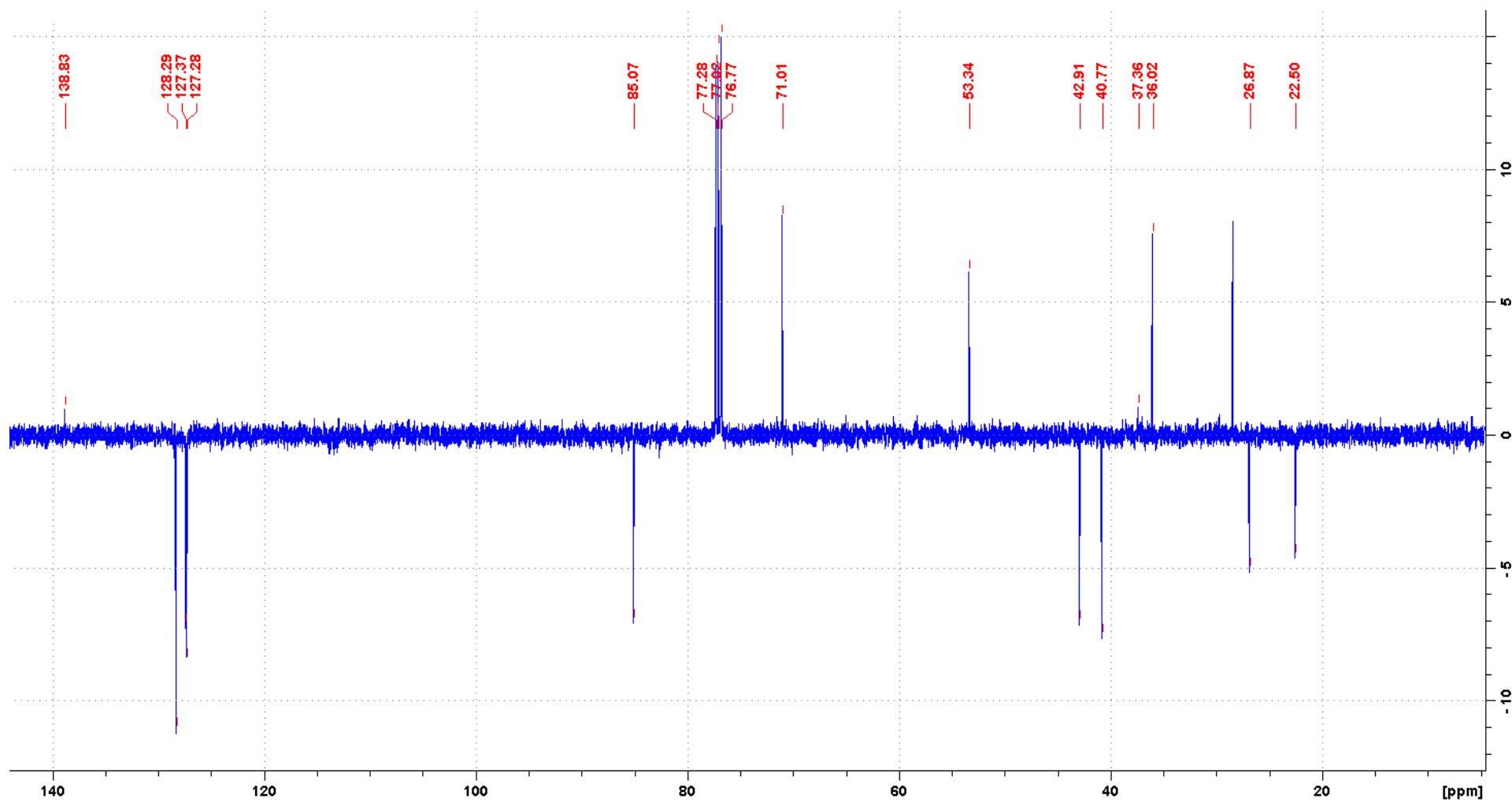
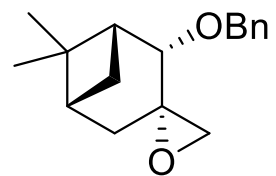
NOESY for compound **16**



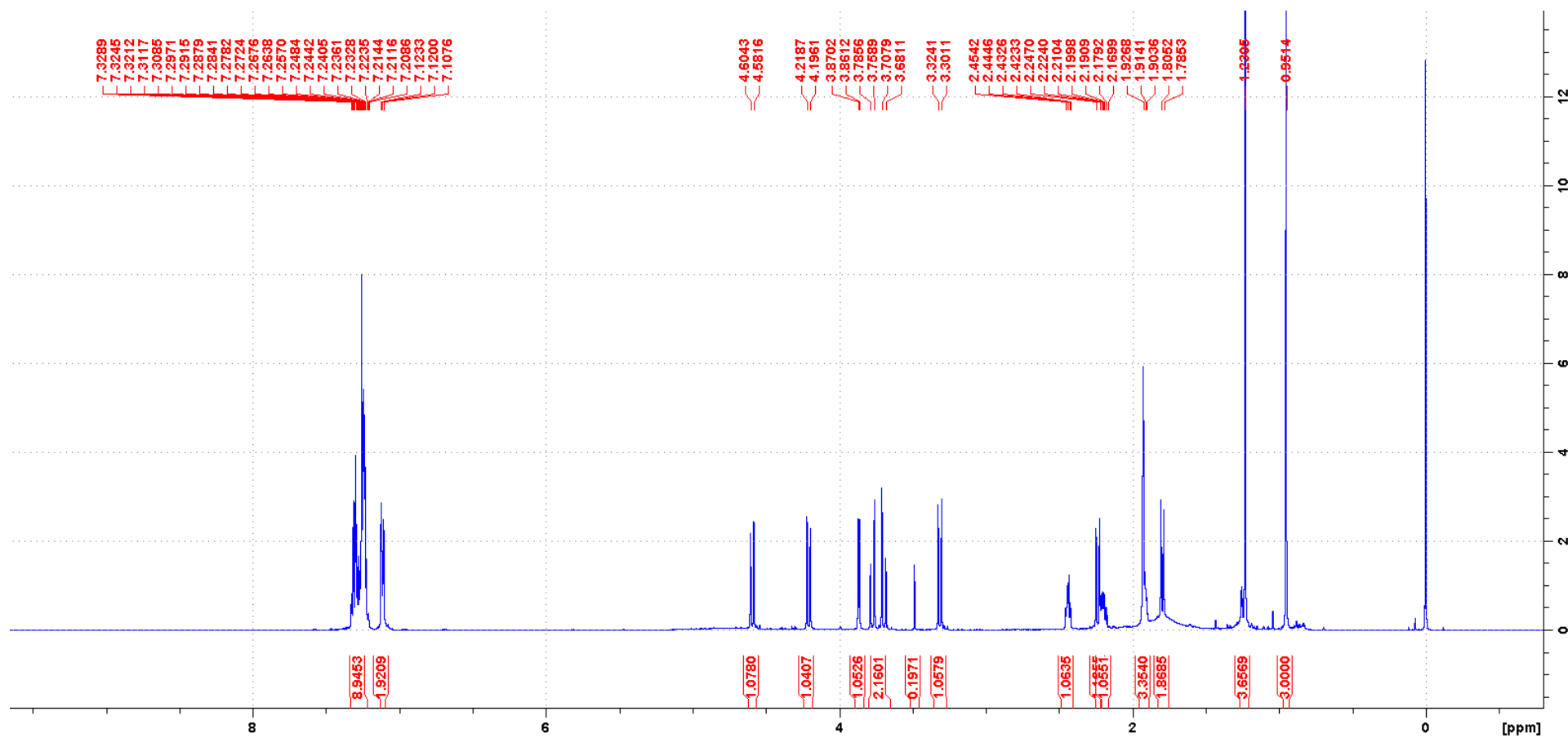
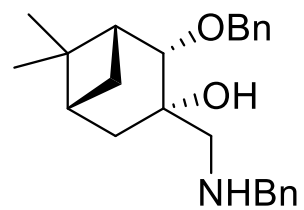
<sup>1</sup>H-NMR for compound **18**



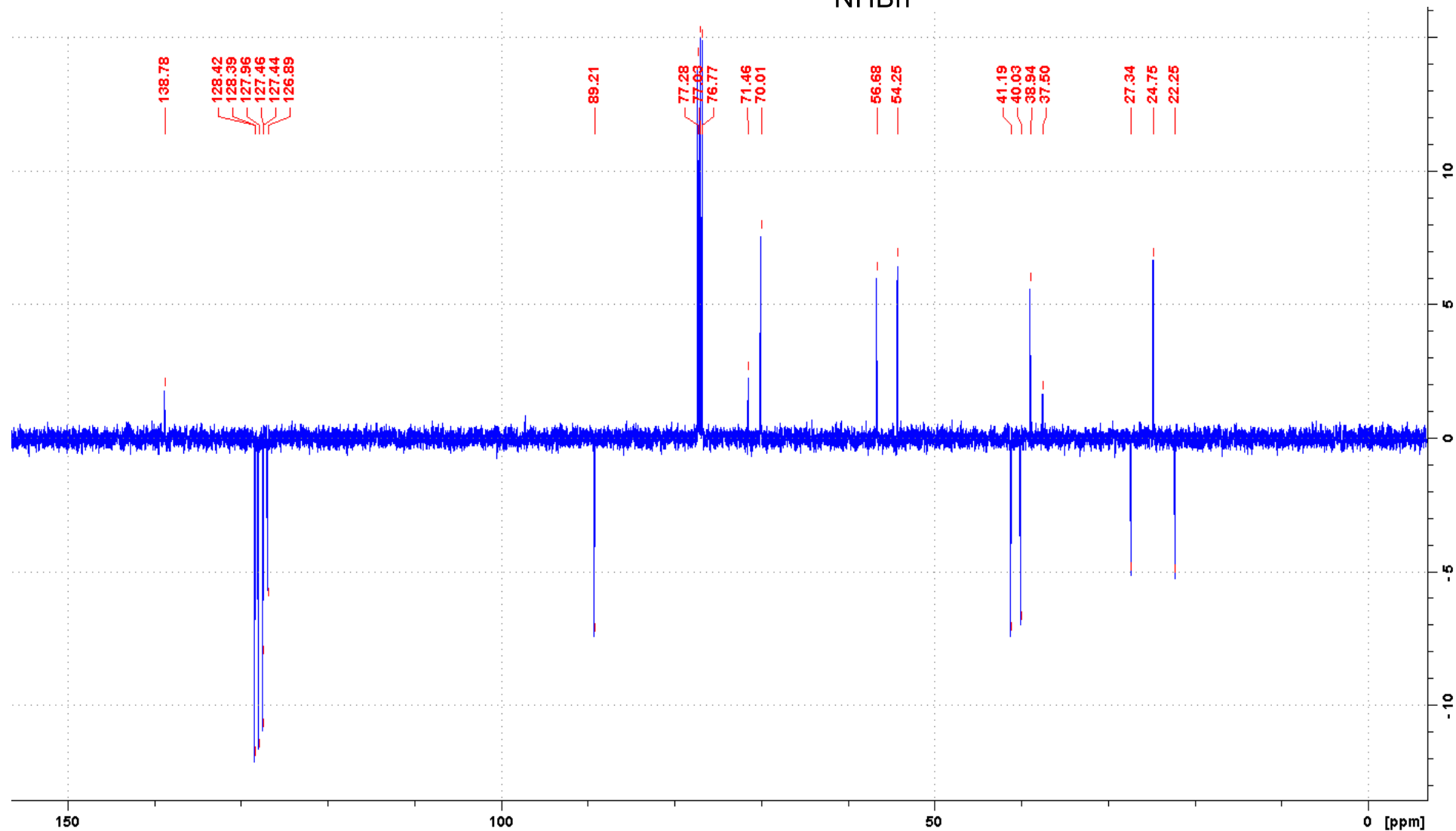
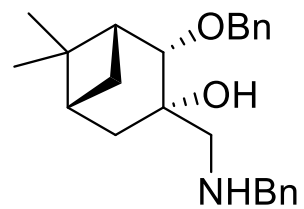
$^{13}\text{C}$ -NMR for compound **18**



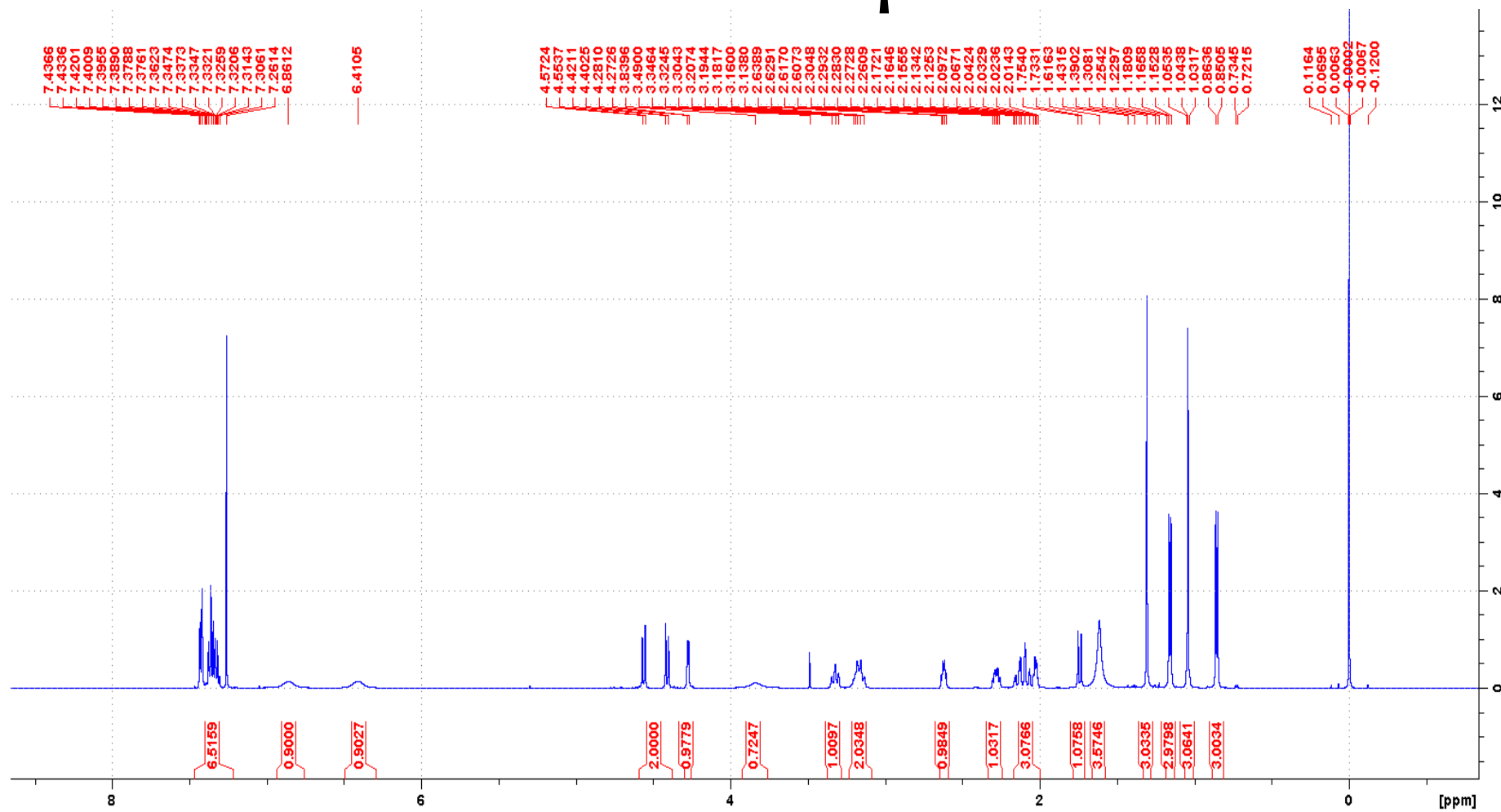
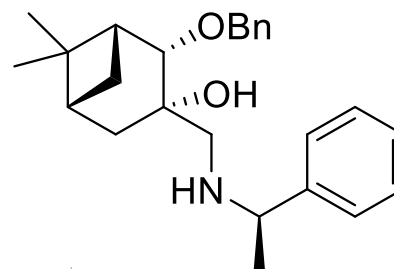
<sup>1</sup>H-NMR for compound **19**



$^{13}\text{C}$ -NMR for compound **19**

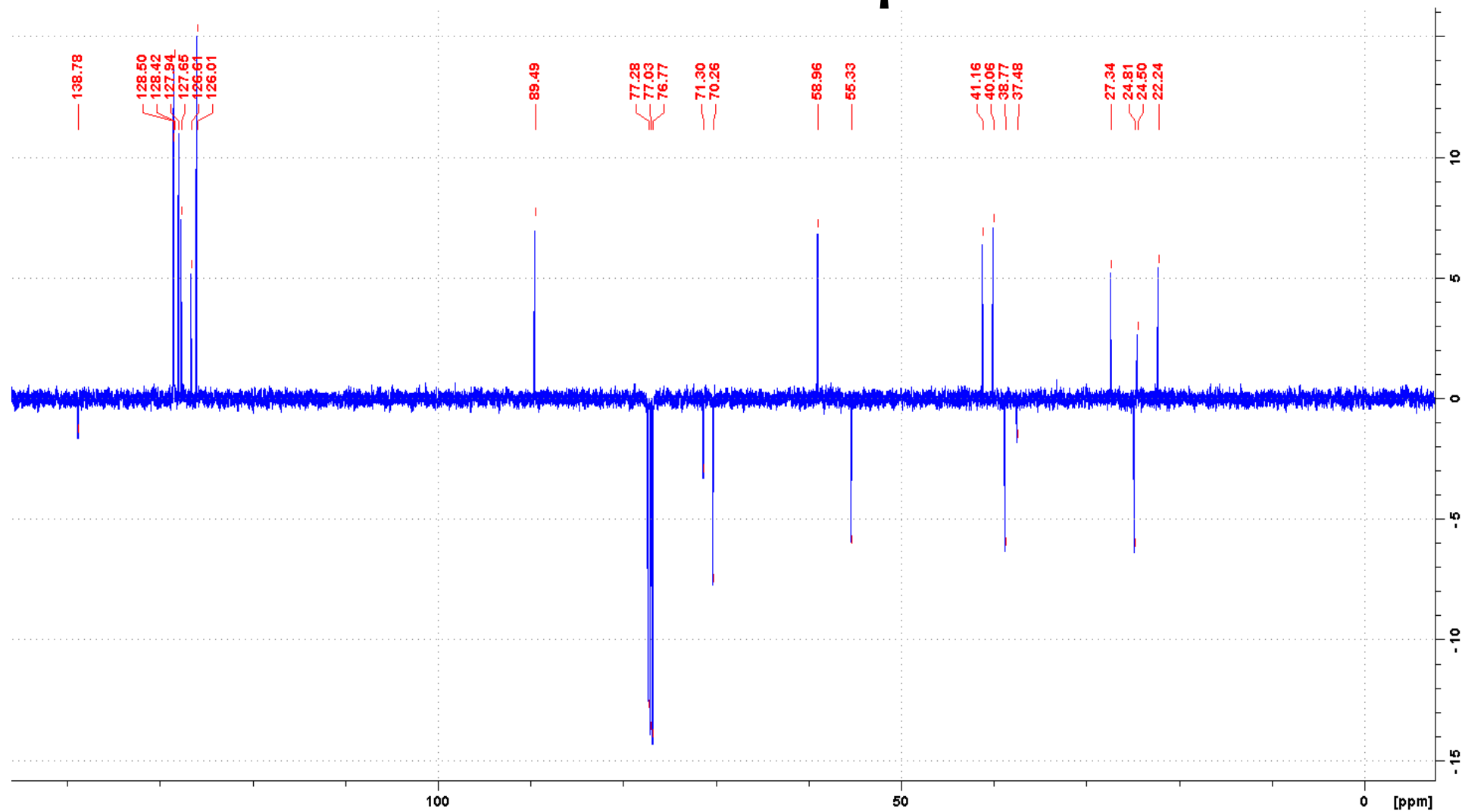
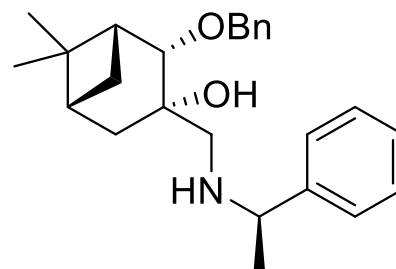


<sup>1</sup>H-NMR for compound **20**

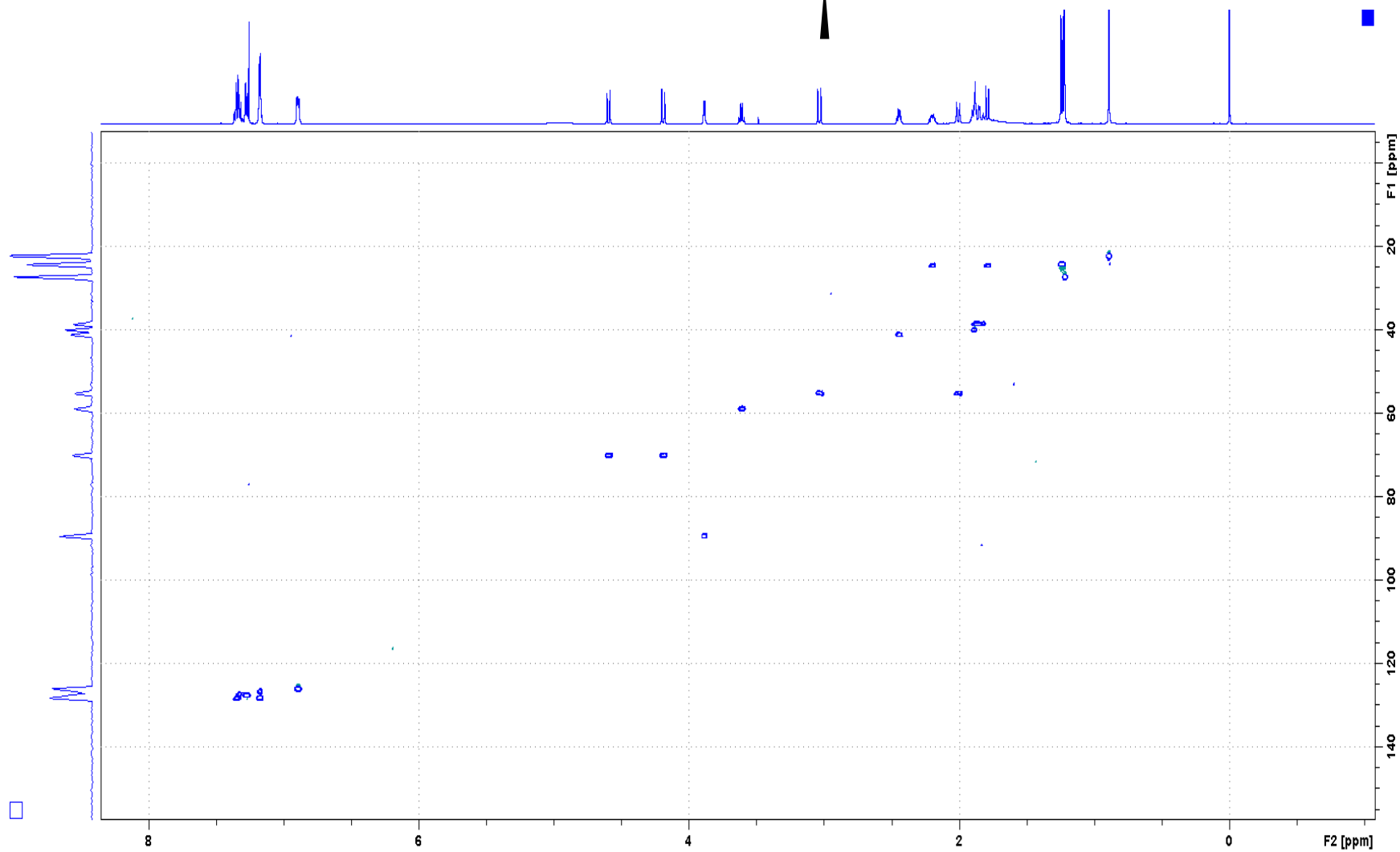
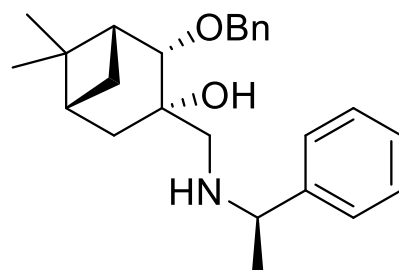




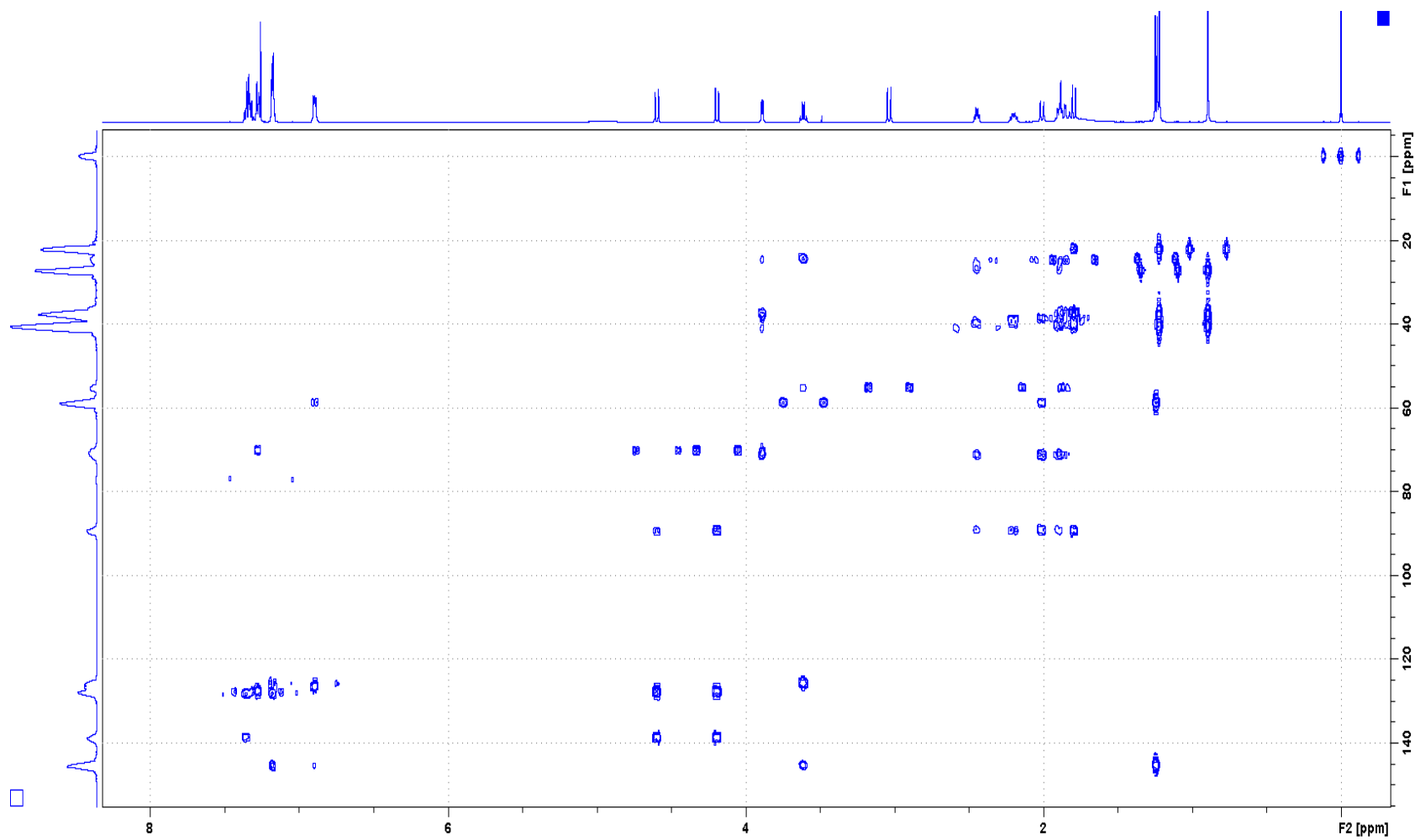
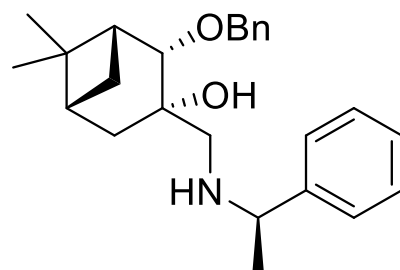
$^{13}\text{C}$ -NMR for compound **20**



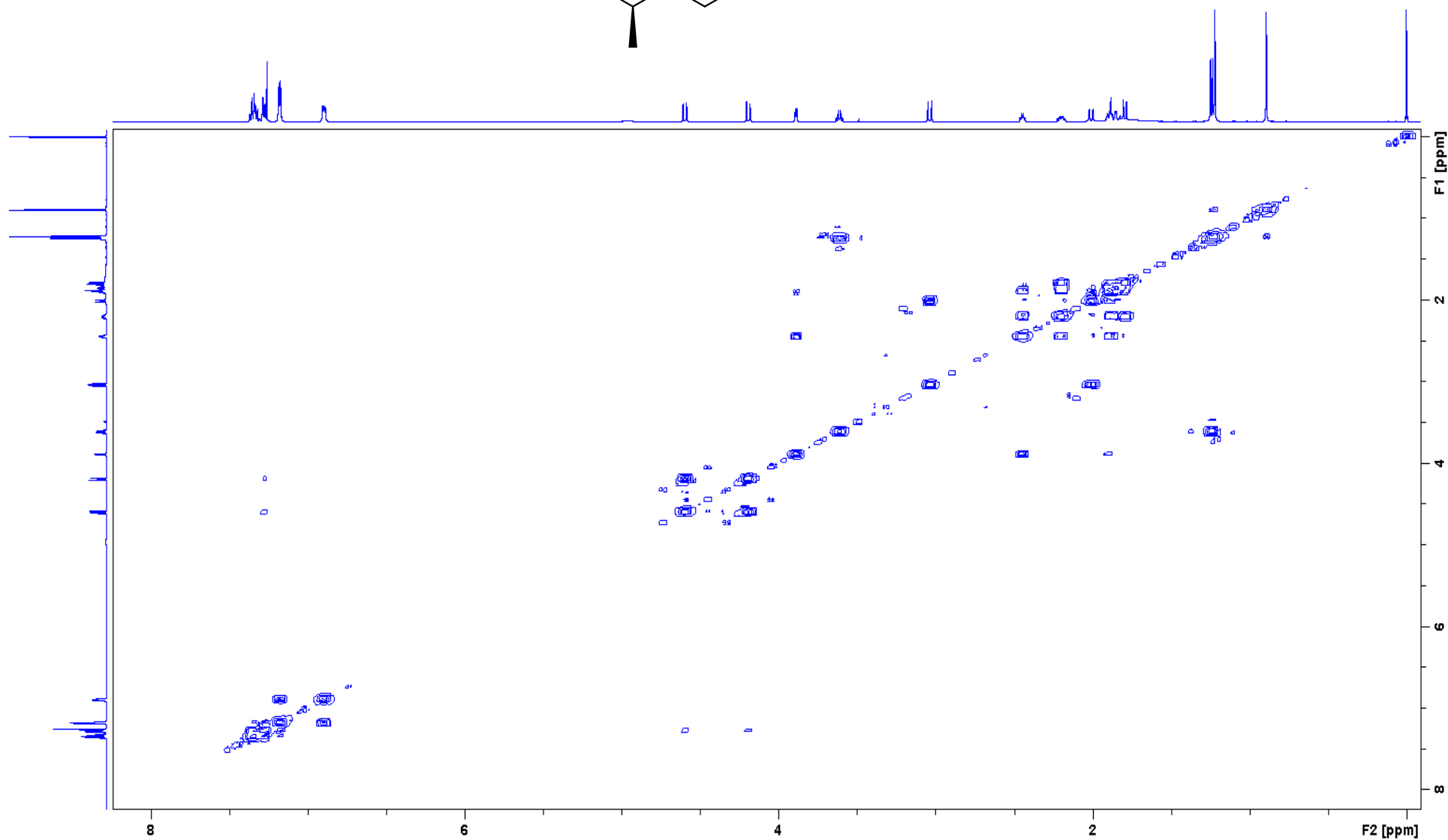
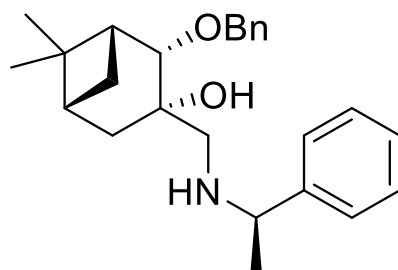
HSQC for compound **20**



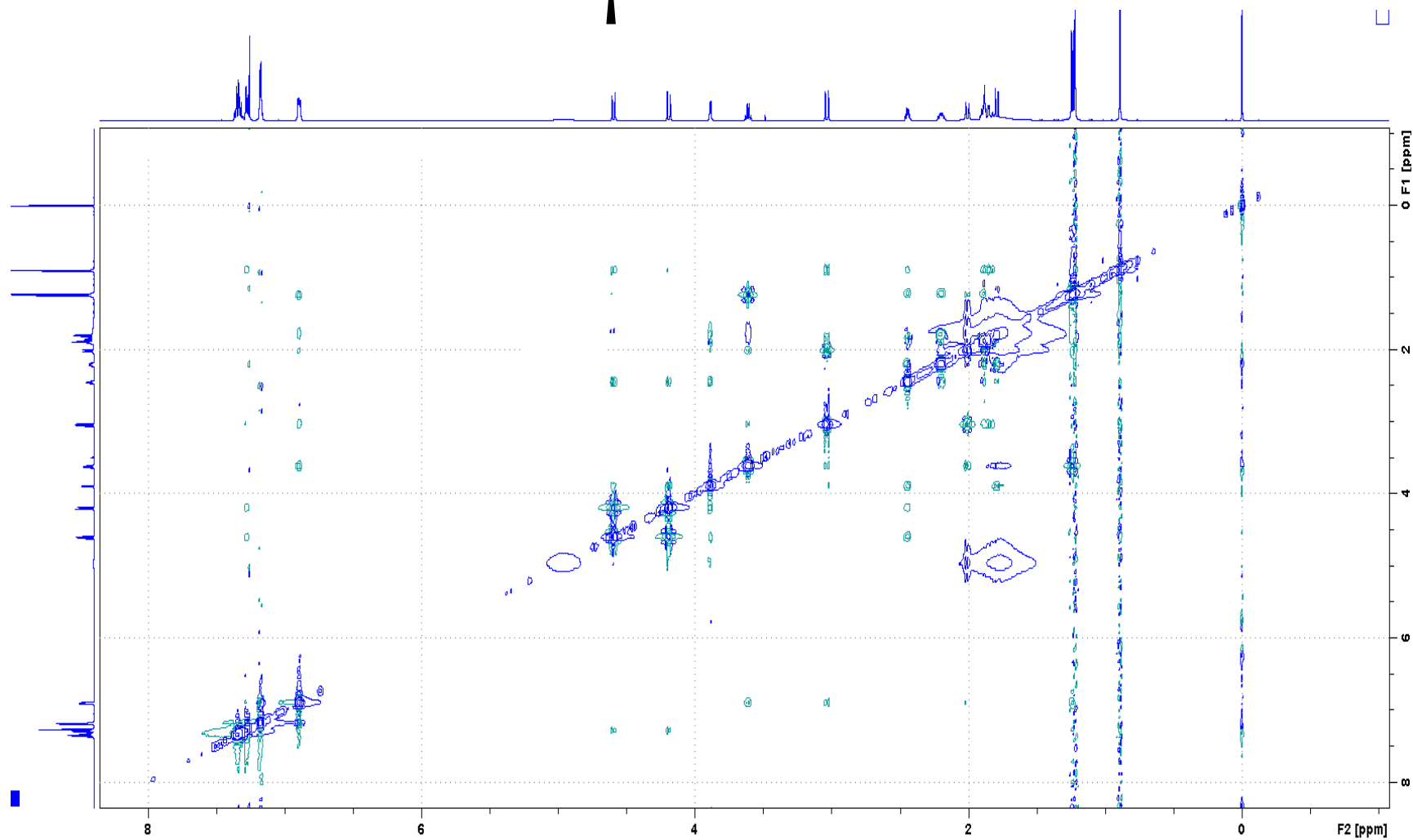
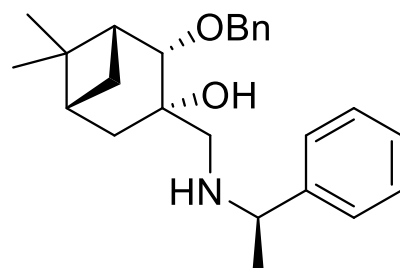
HMBC for compound **20**



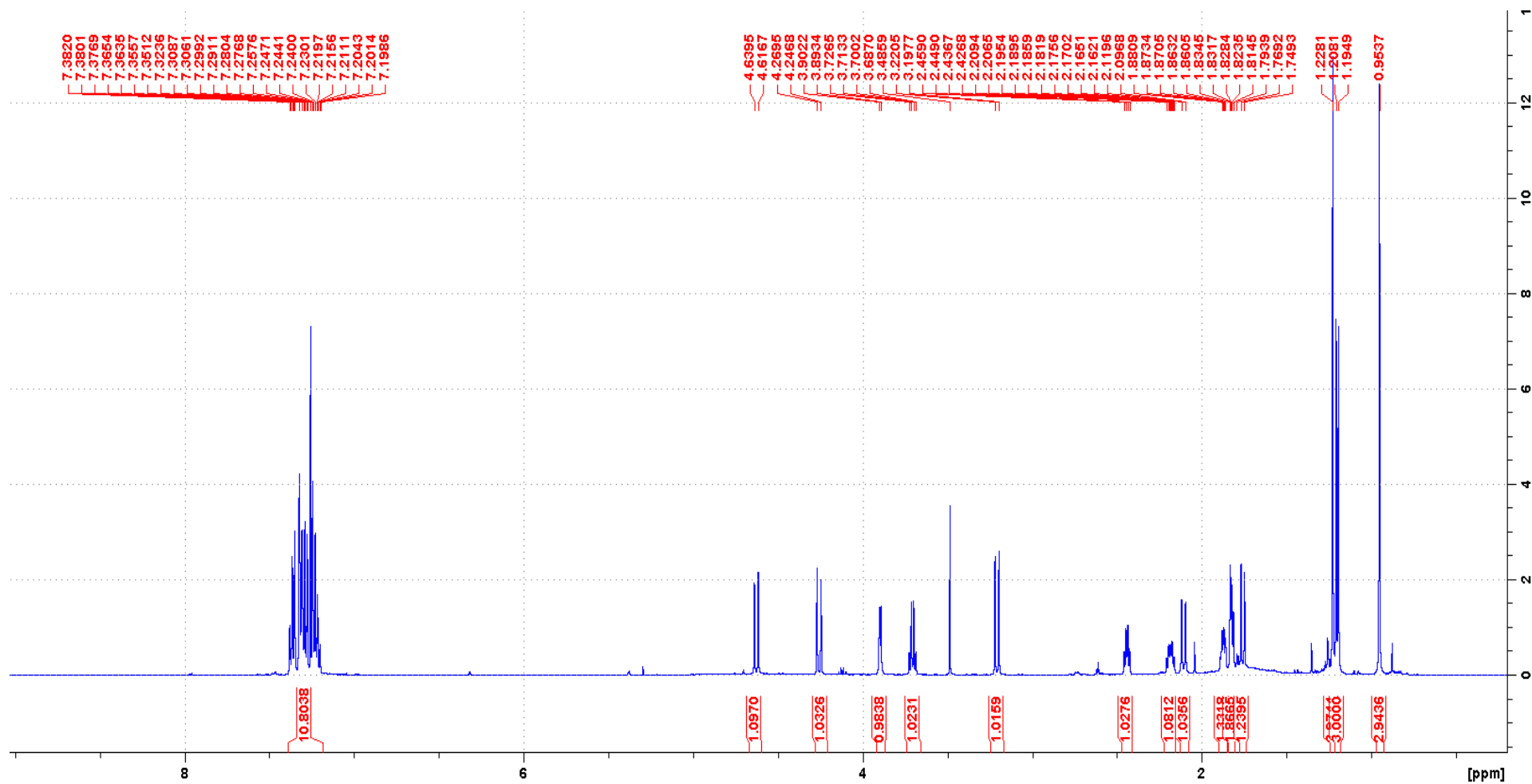
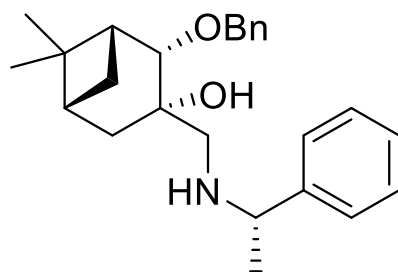
COSY for compound **20**



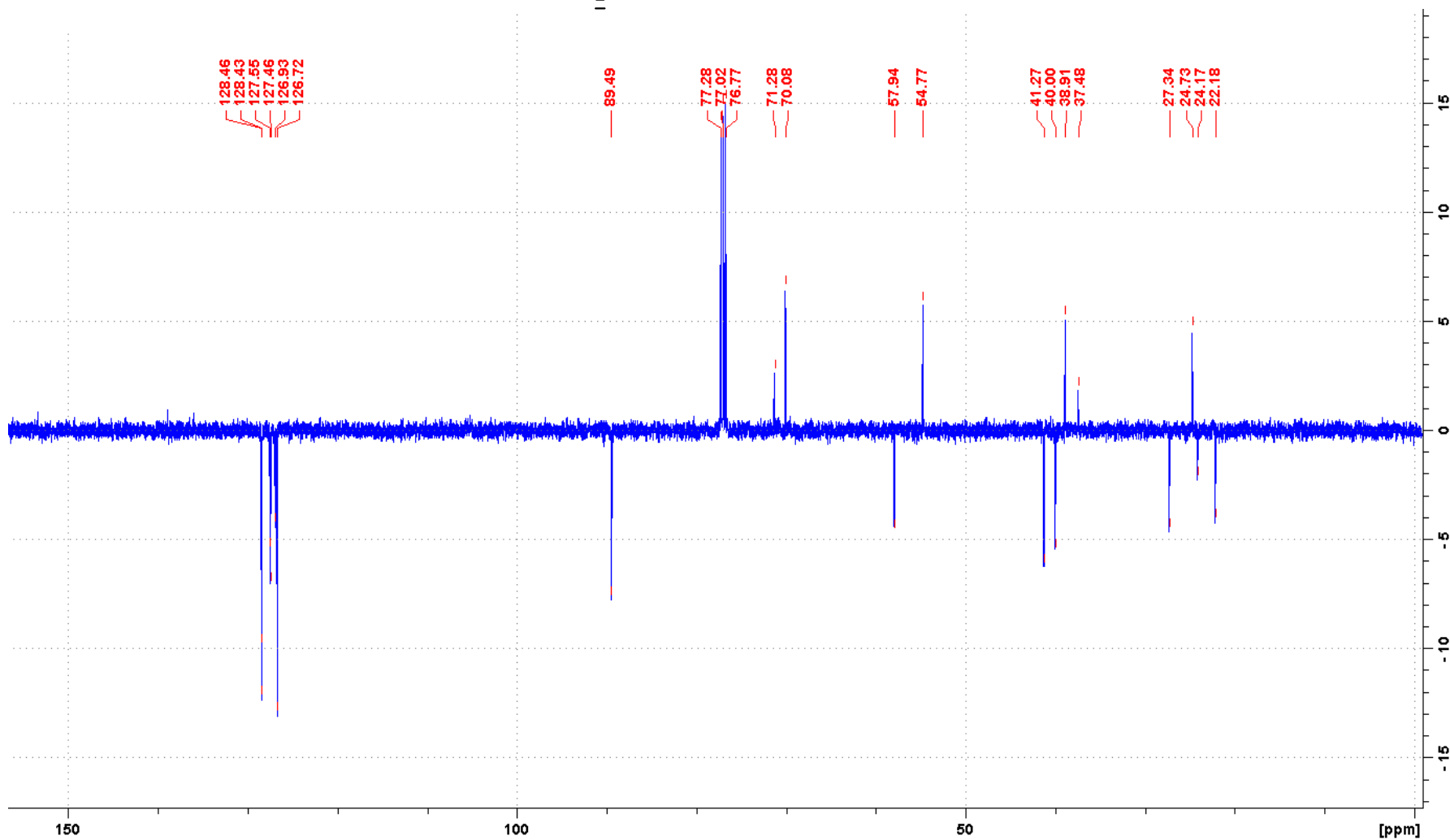
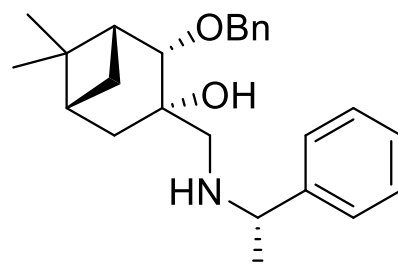
NOESY for compound **20**



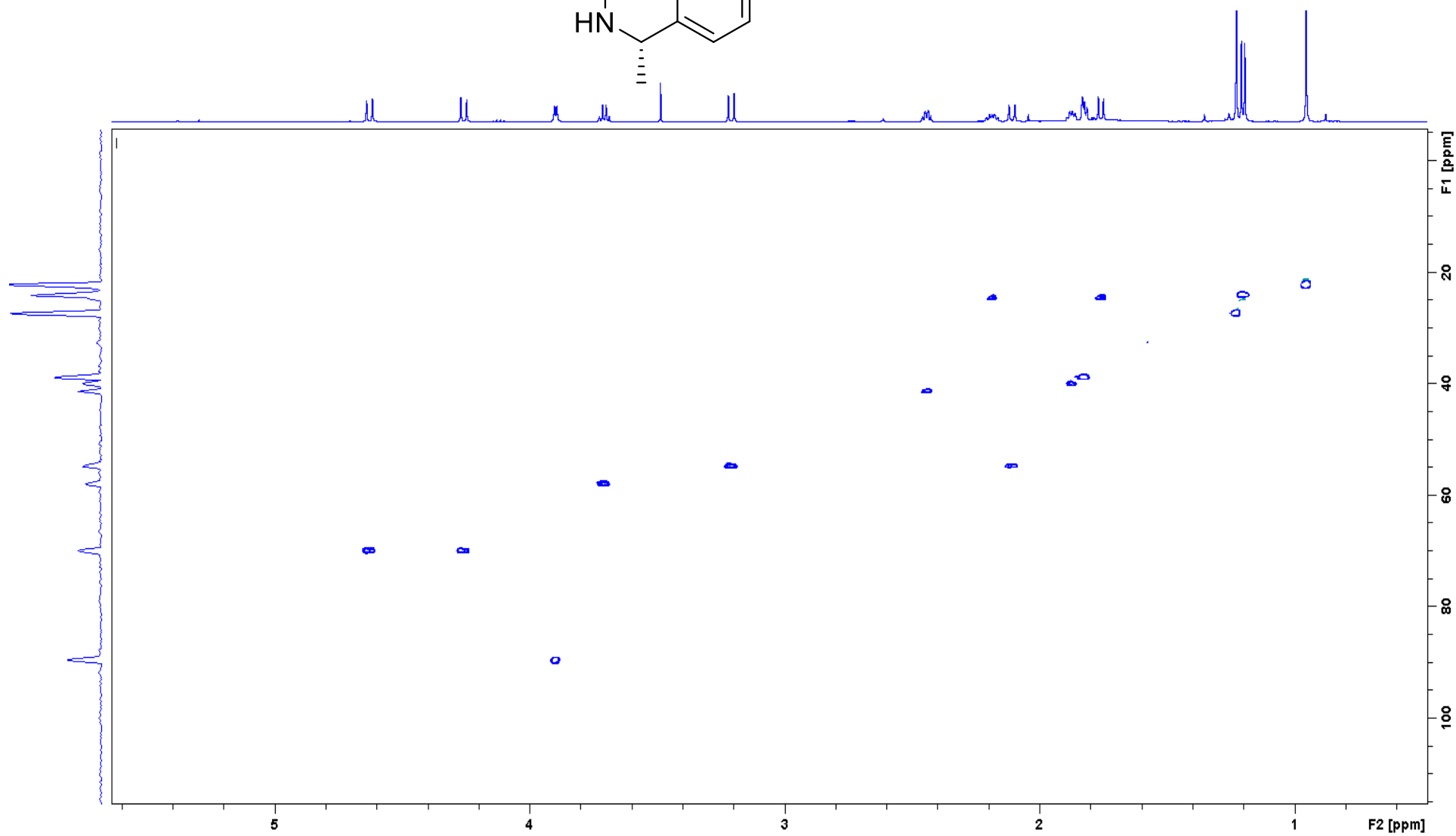
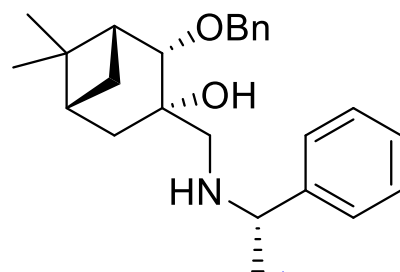
<sup>1</sup>H-NMR for compound **21**



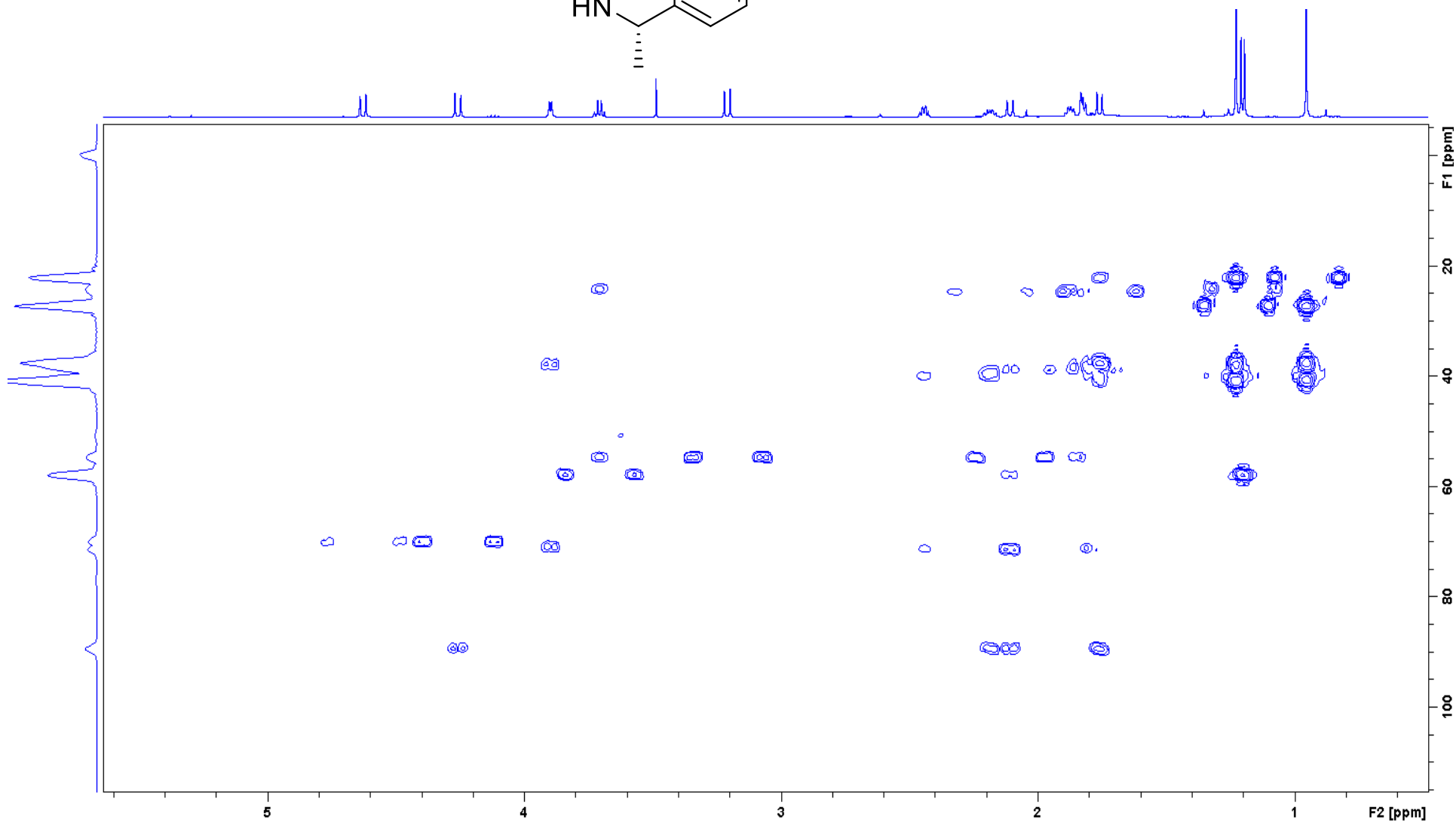
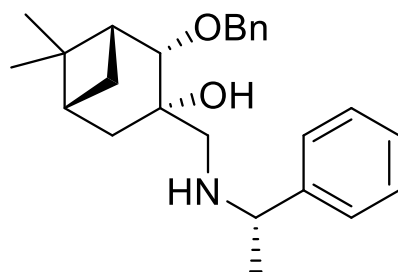
$^{13}\text{C}$ -NMR for compound **21**



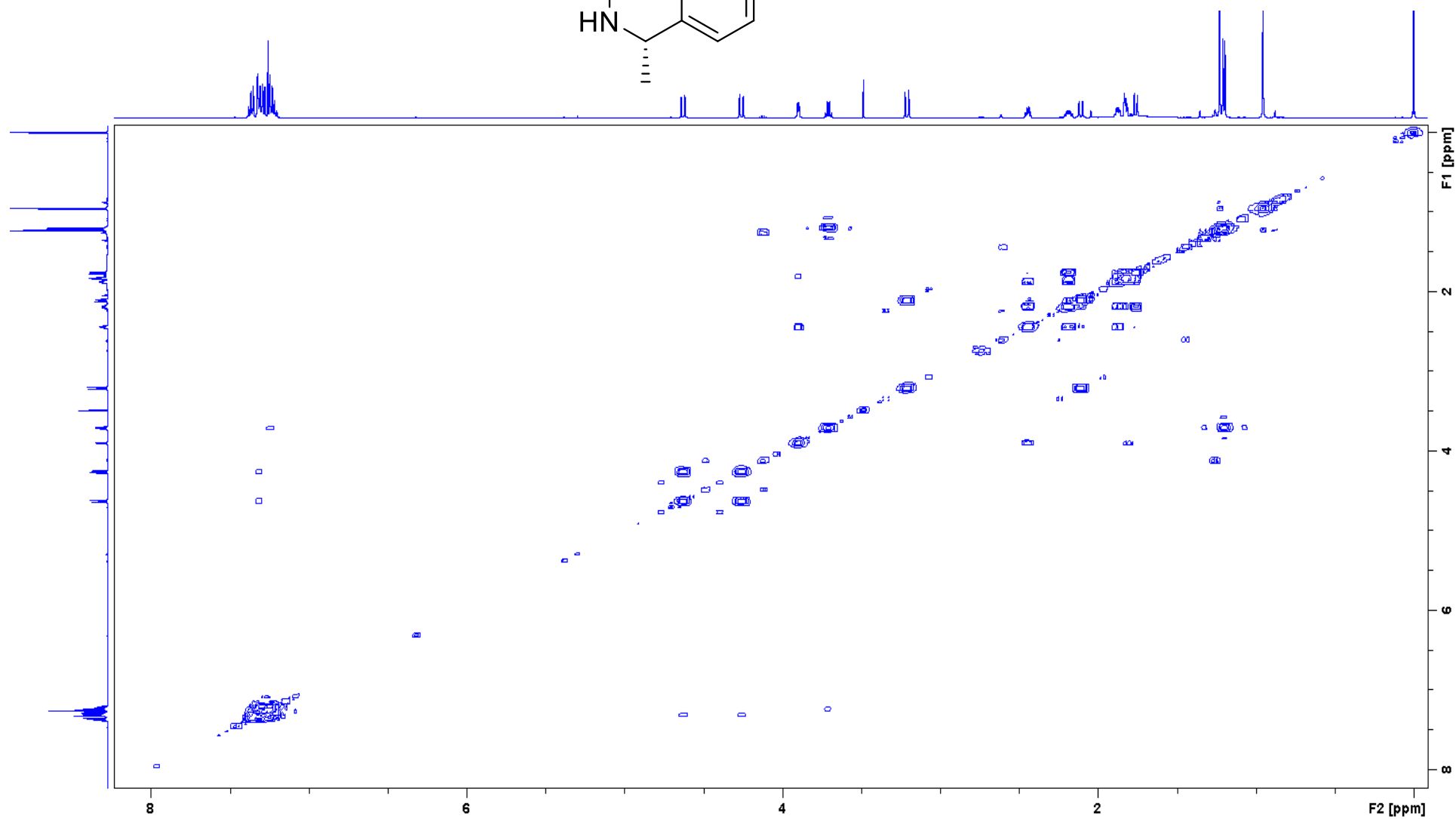
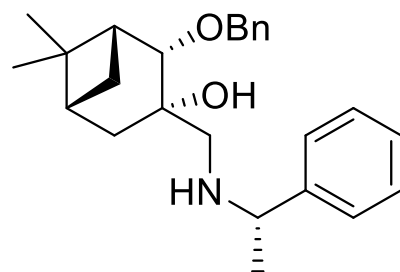
HSQC for compound **21**



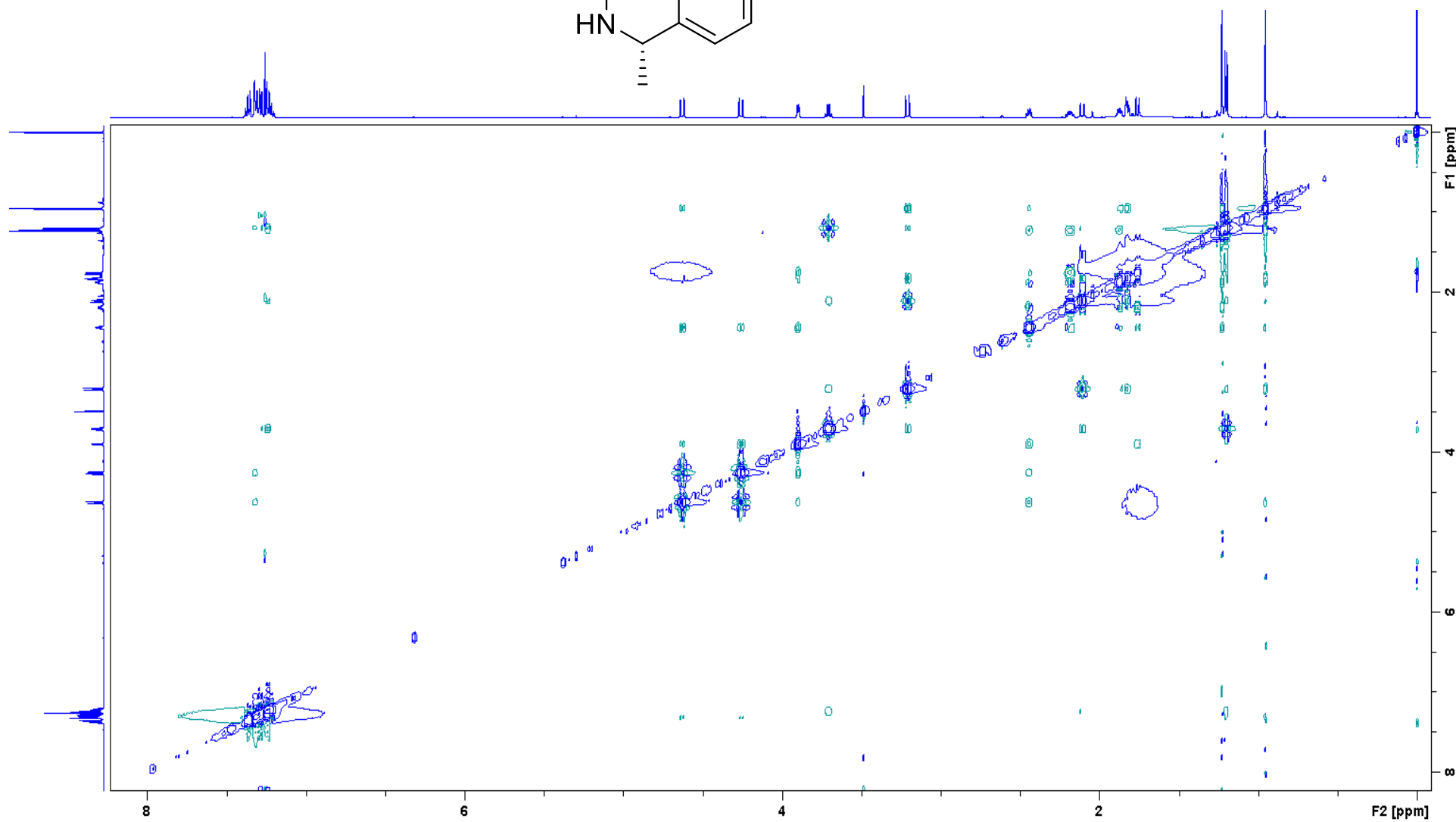
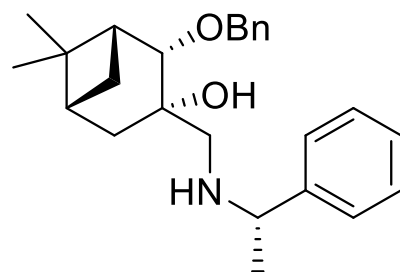


HMBC for compound **21**

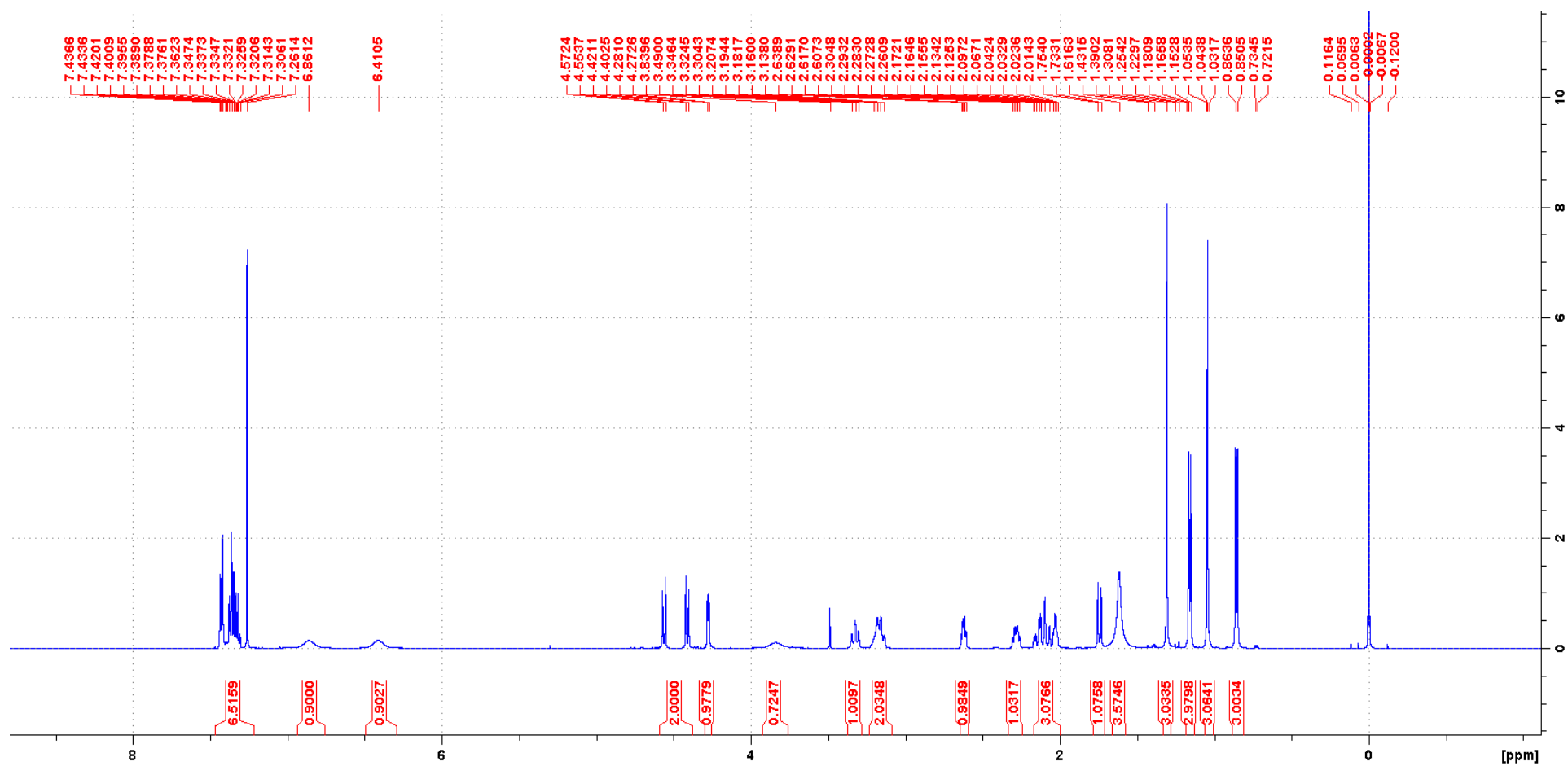
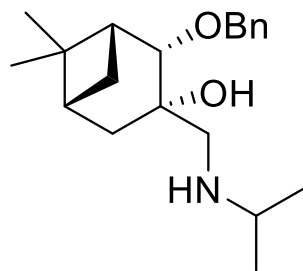
COSY for compound **21**



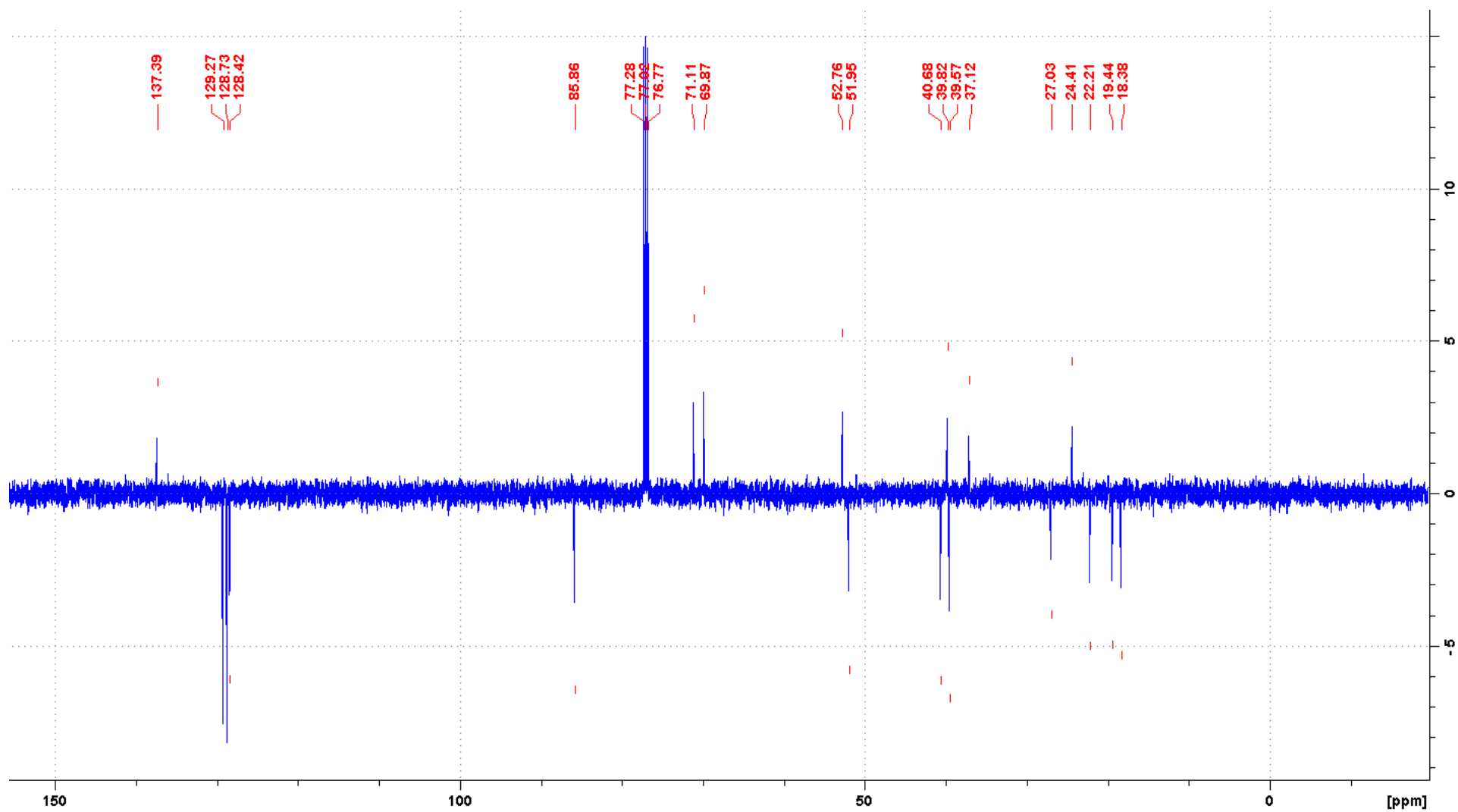
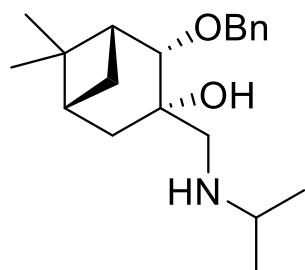
NOESY for compound **21**



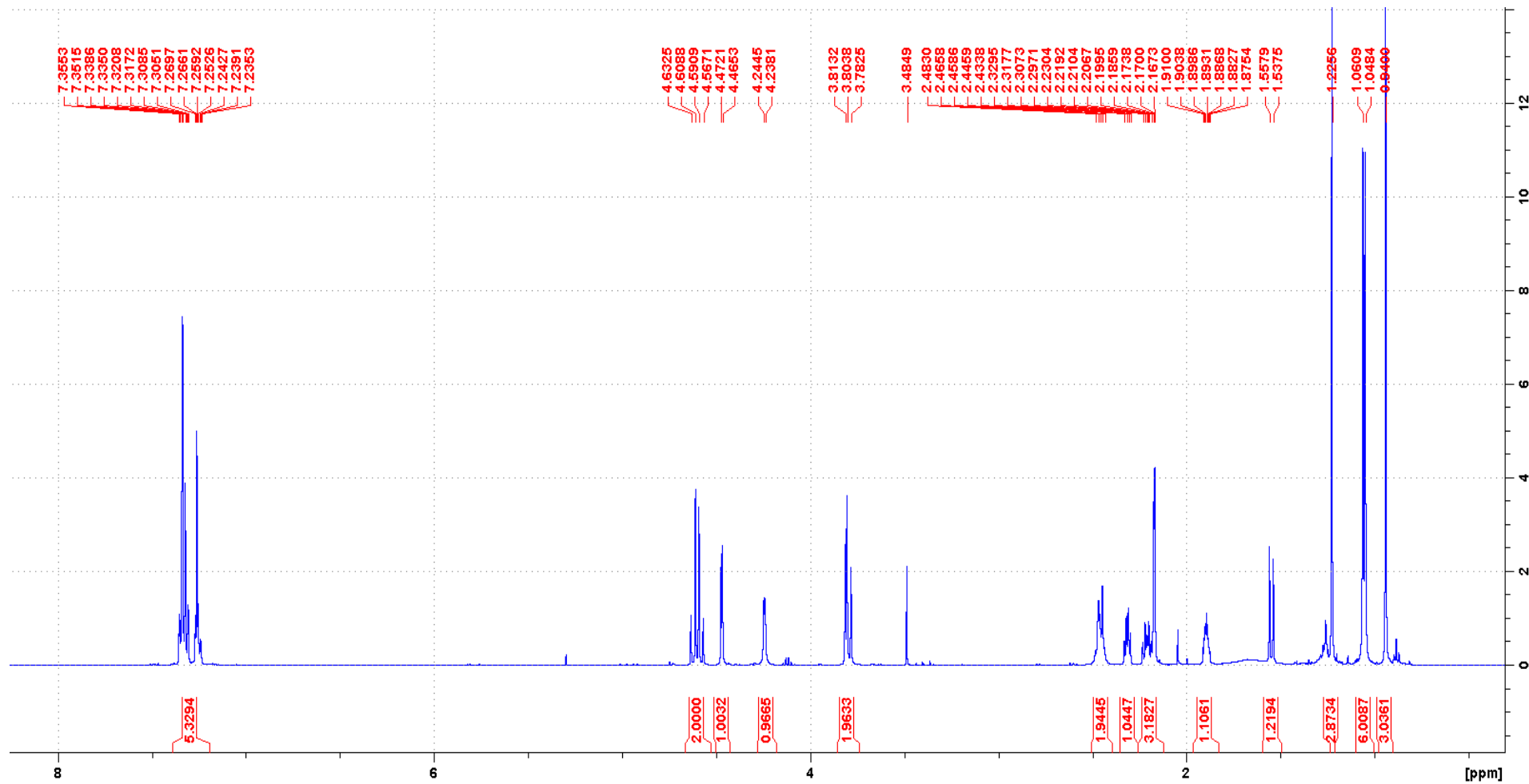
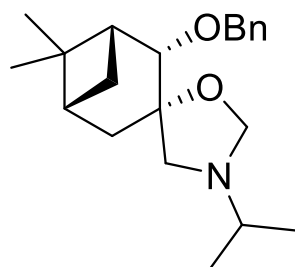
<sup>1</sup>H-NMR for compound **22**



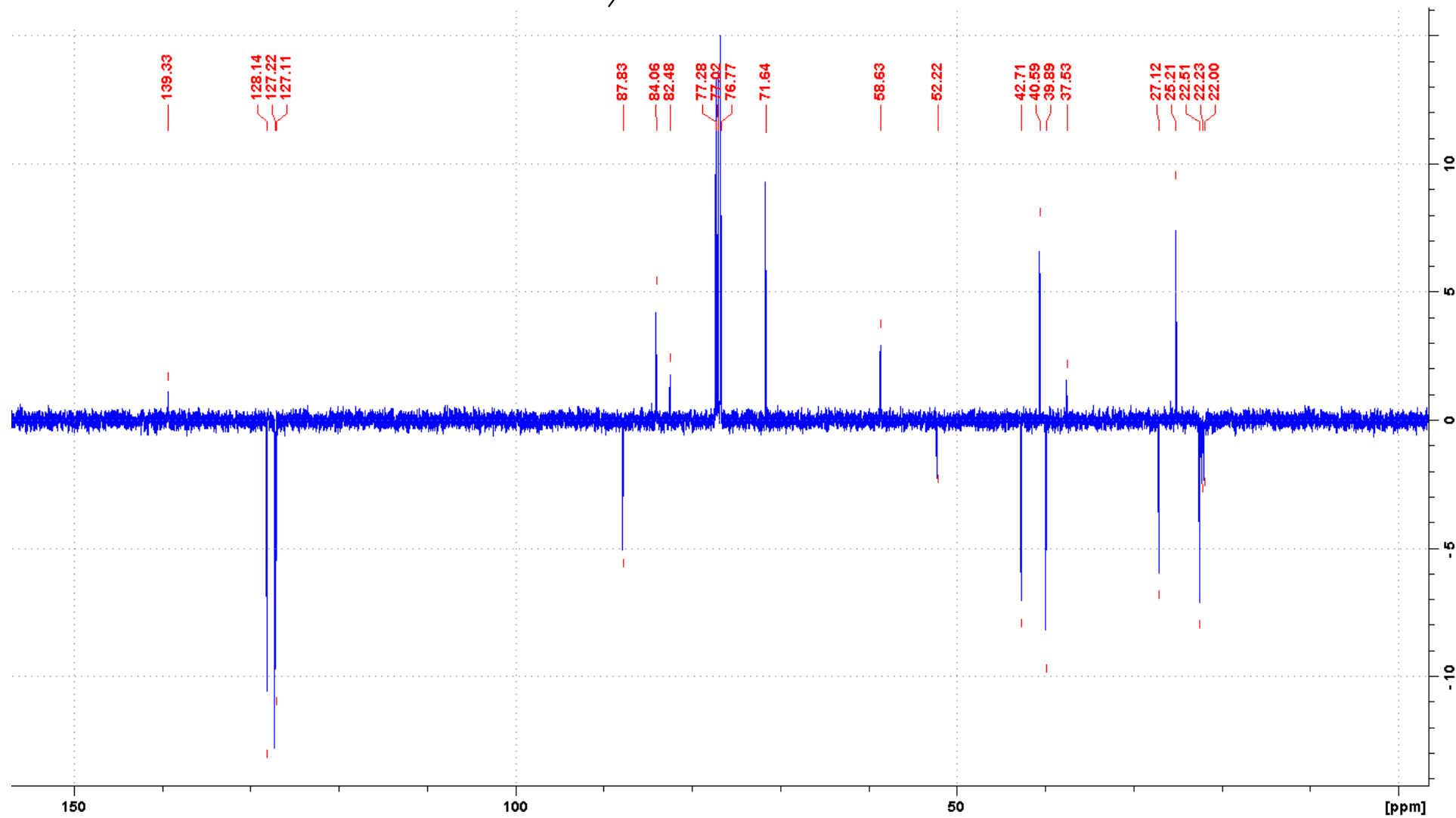
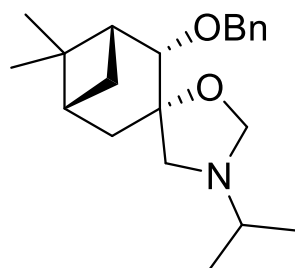
$^{13}\text{C}$ -NMR for compound **22**



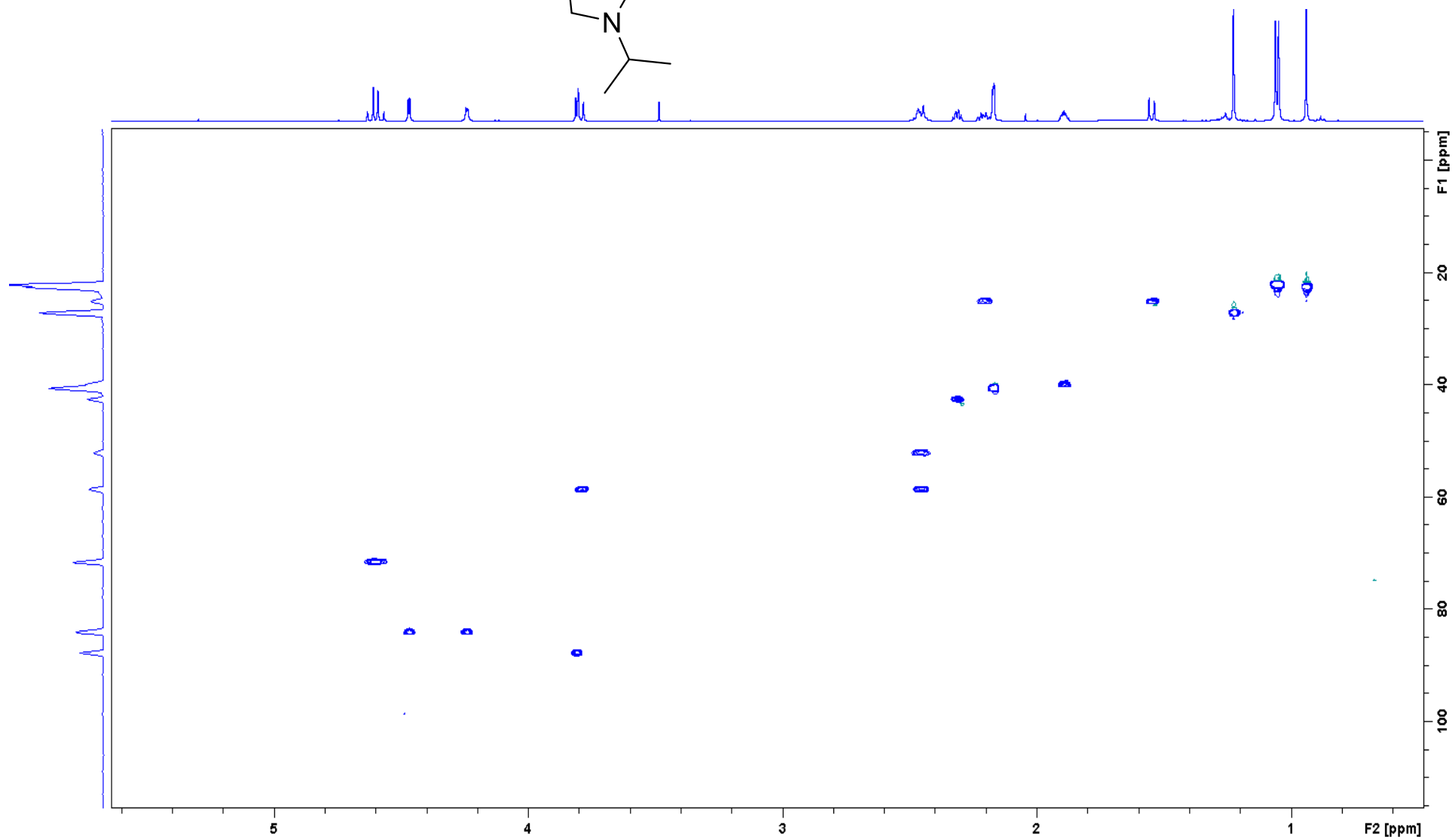
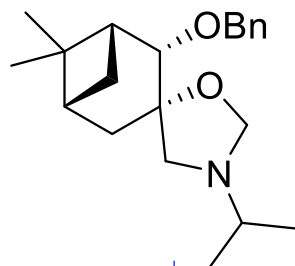
<sup>1</sup>H-NMR for compound **23**



$^{13}\text{C}$ -NMR for compound **23**

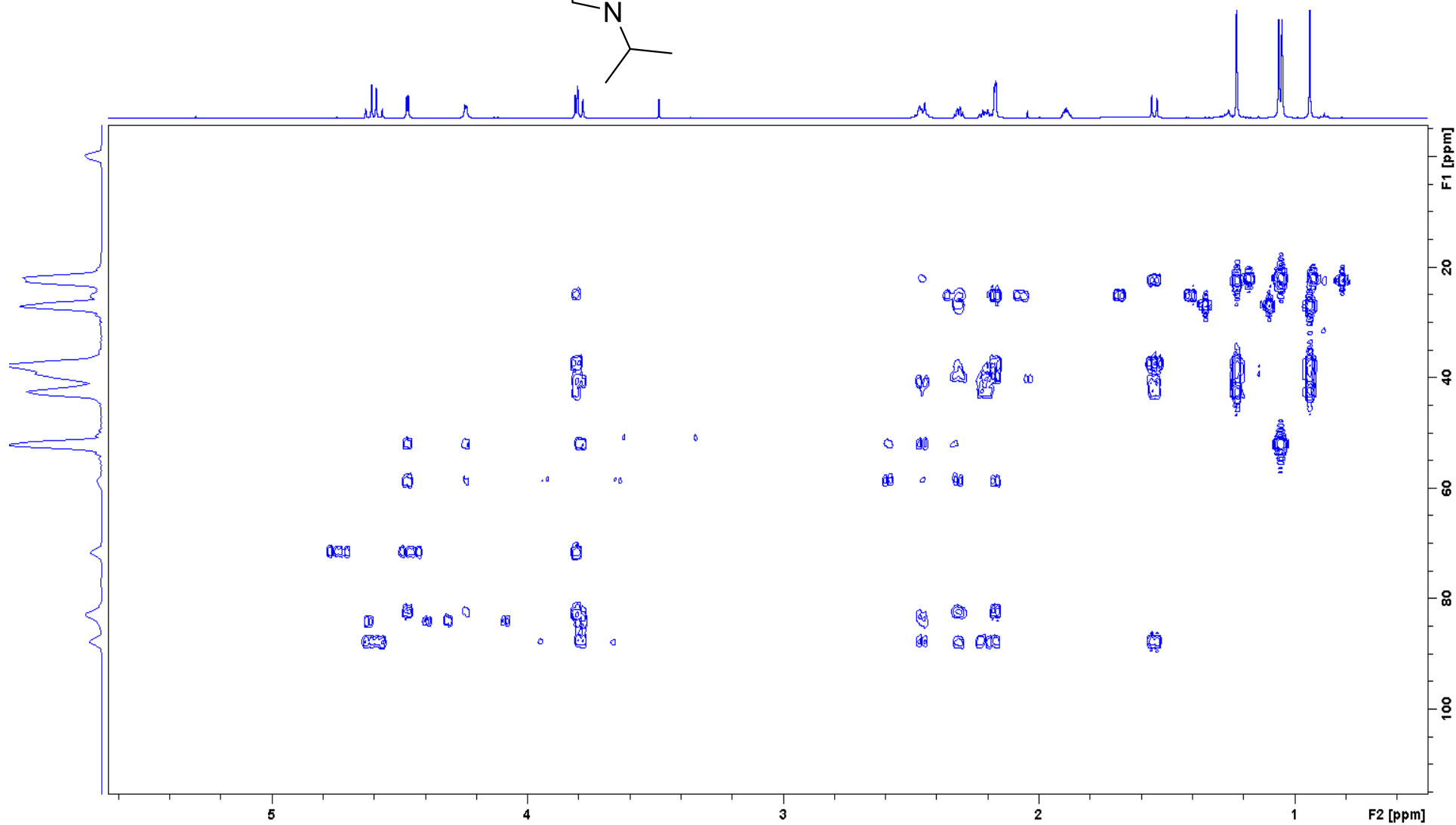
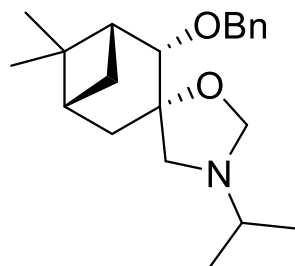


HSQC for compound **23**

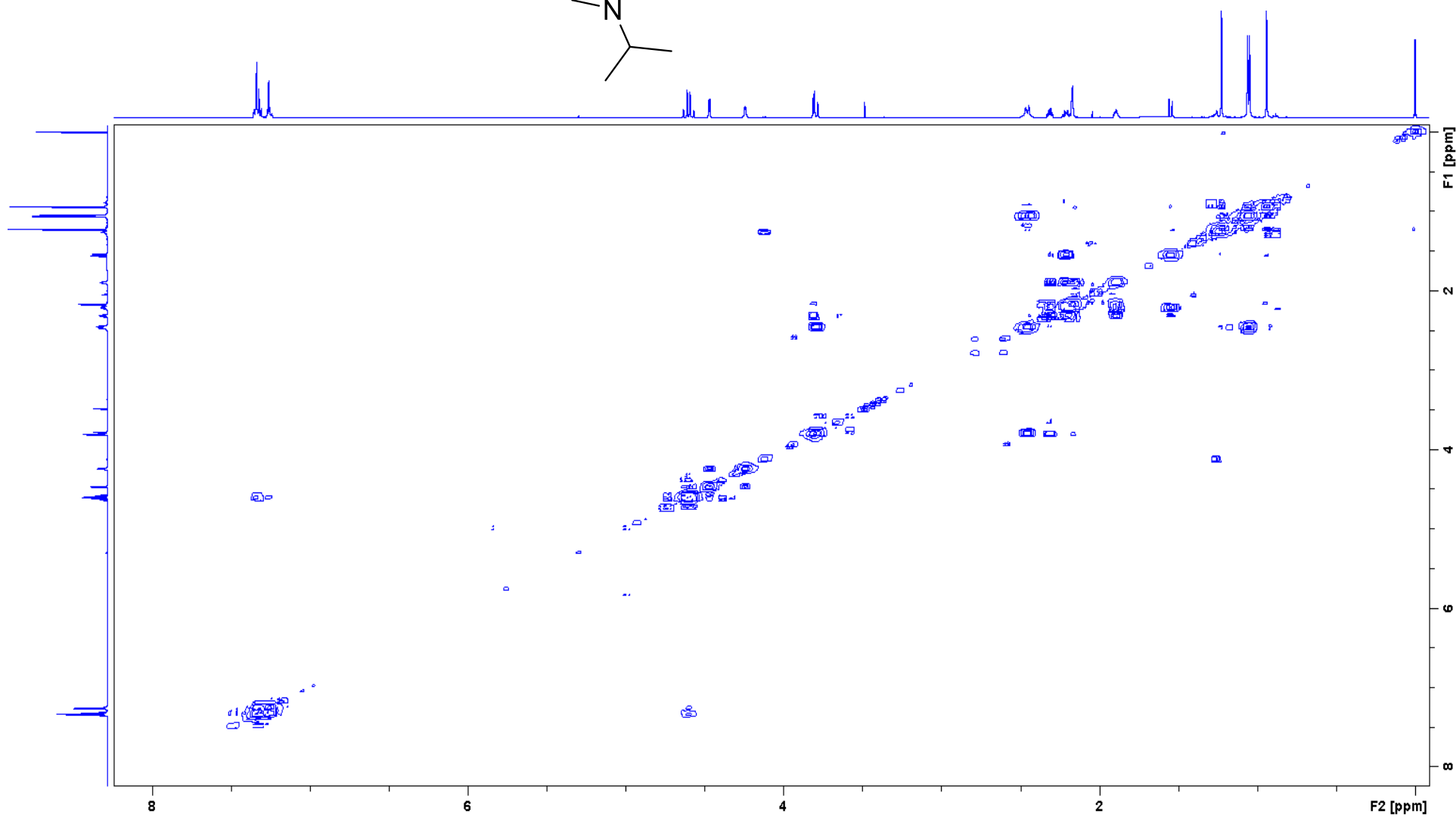
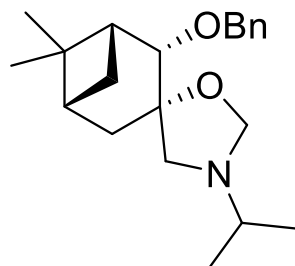




HMBC for compound **23**



COSY for compound **23**



NOESY for compound **23**

