

# Stereoselective synthesis and biological evaluation of D-fagomine, D-3-*epi*-fagomine and D-3,4-*epi*-fagomine analogs from D-glyceraldehyde acetonide as a common building block

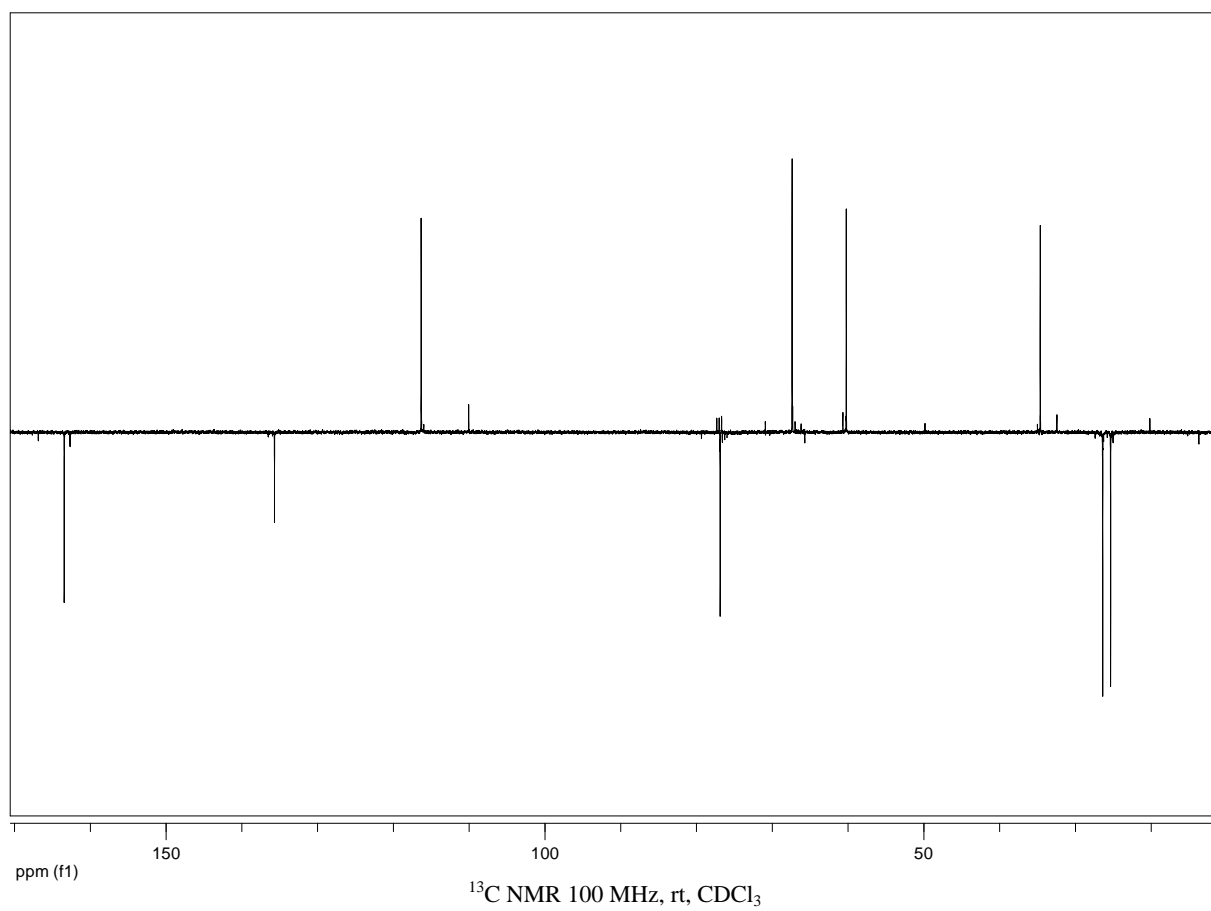
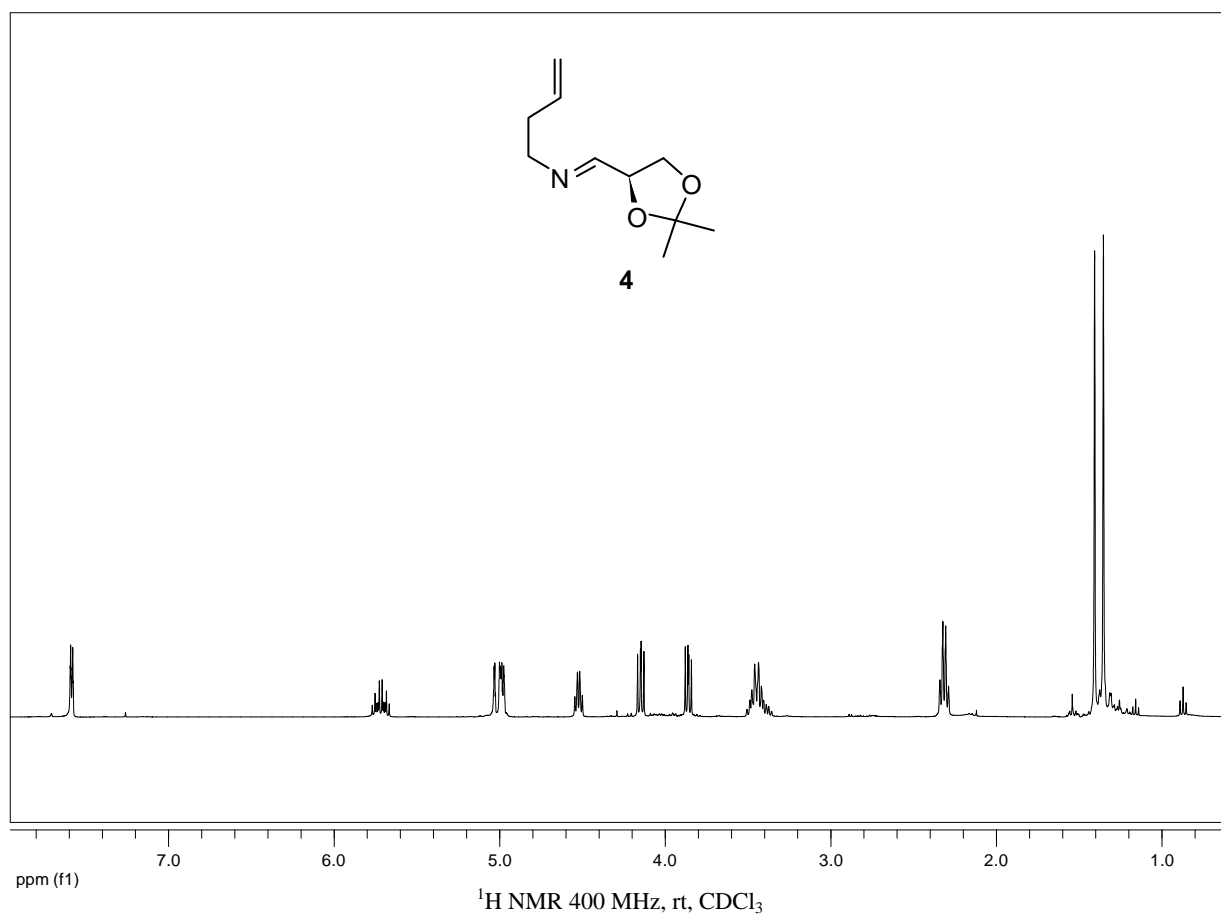
J. Alberto Díez,<sup>a</sup> José A. Gálvez,<sup>a\*</sup> María D. Díaz de Villegas,<sup>a\*</sup> Ramón Badorrey,<sup>a</sup> Barbara Bartholomew,<sup>b</sup> and Robert J. Nash<sup>b</sup>

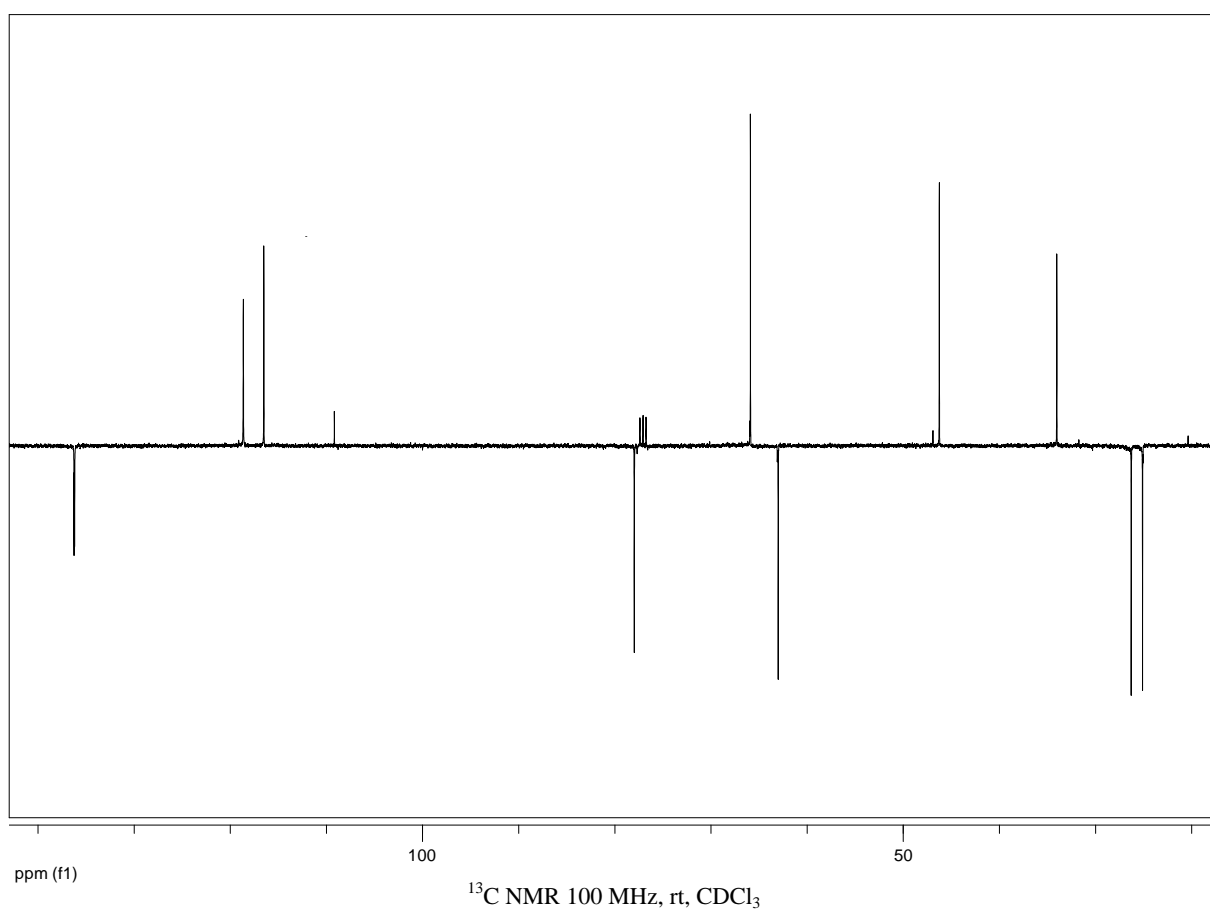
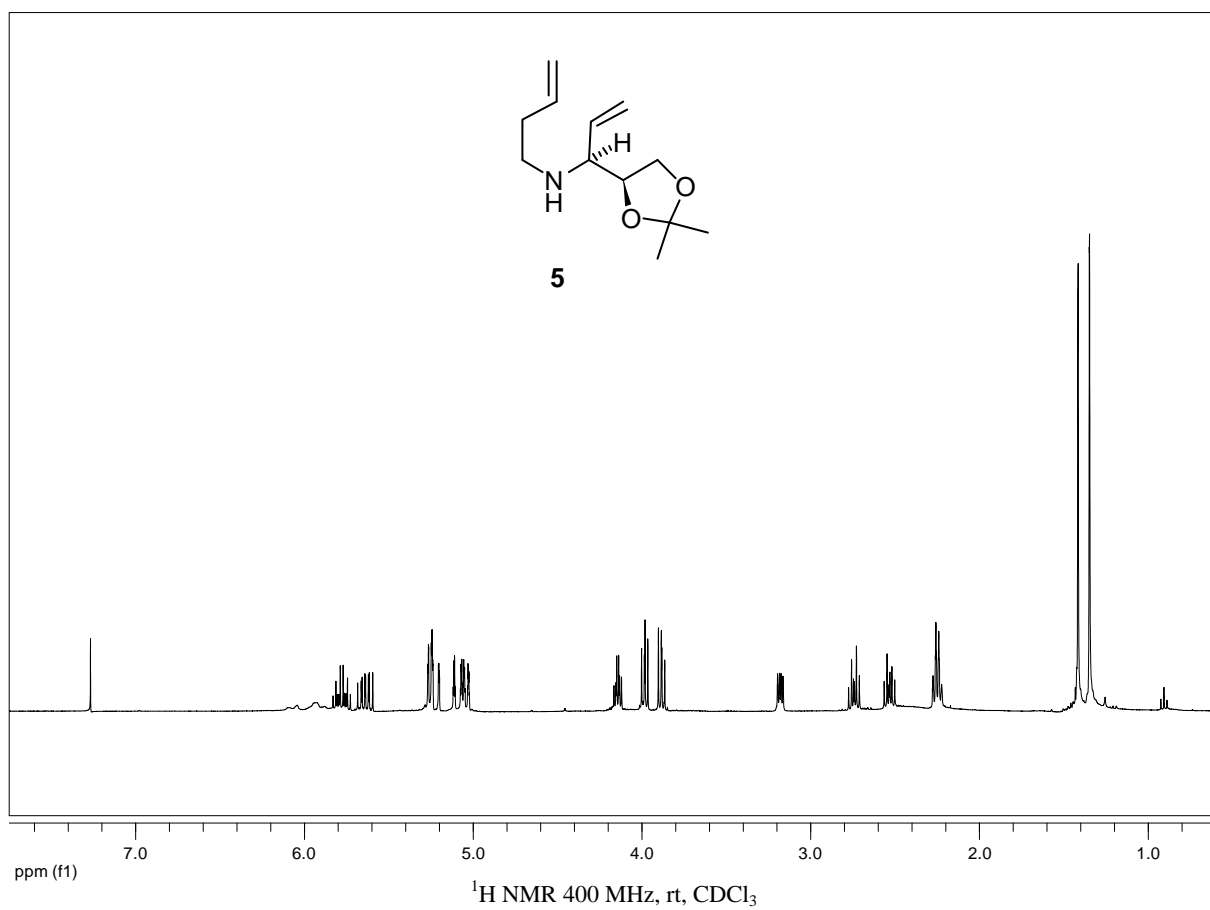
<sup>a</sup> Departamento de Catálisis y Procesos Catalíticos, Instituto de Síntesis Química y Catálisis Homogénea (ISQCH), CSIC - Universidad de Zaragoza, Pedro Cerbuna 12, E-50009 Zaragoza, Spain. Fax: +34976761202; Tel: +34976762274; E-mail: [loladiaz@unizar.es](mailto:loladiaz@unizar.es).

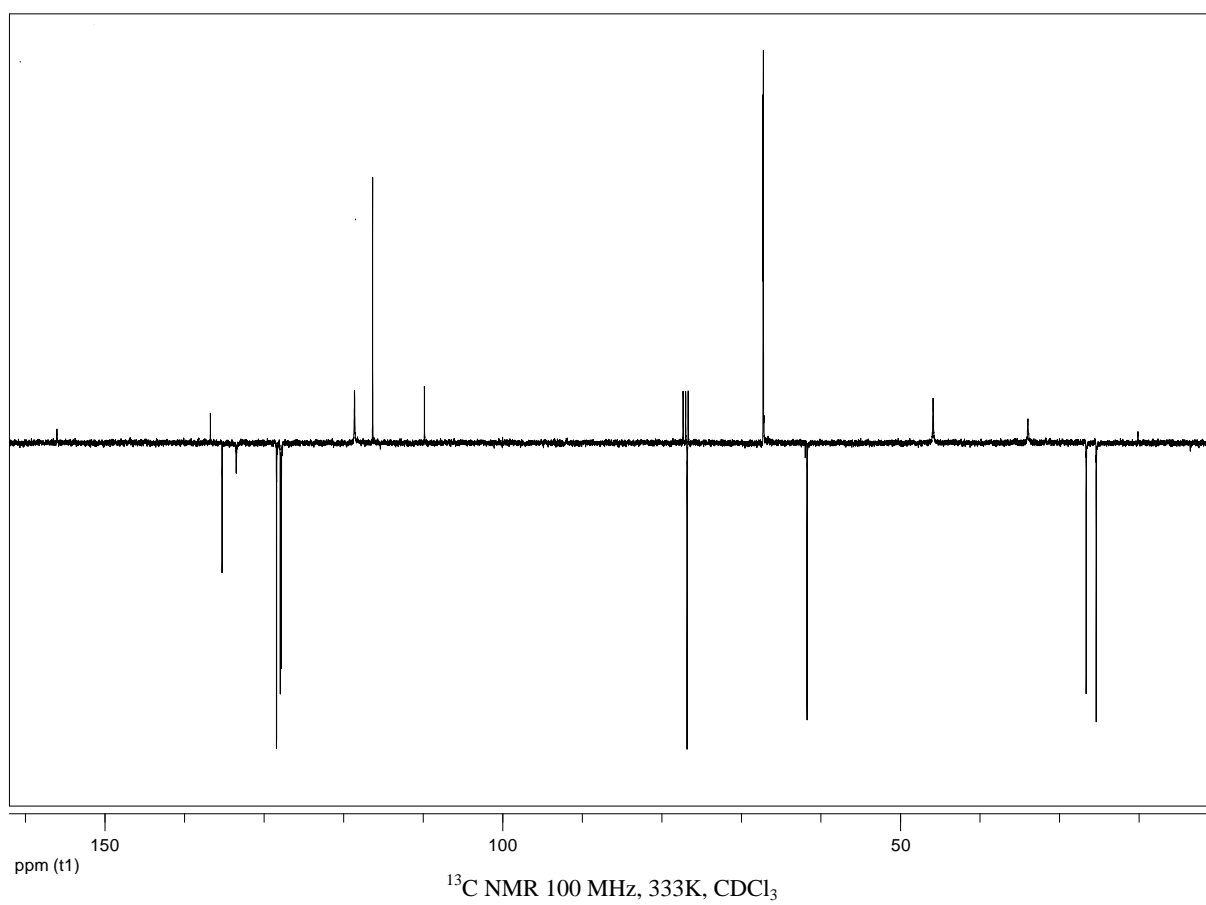
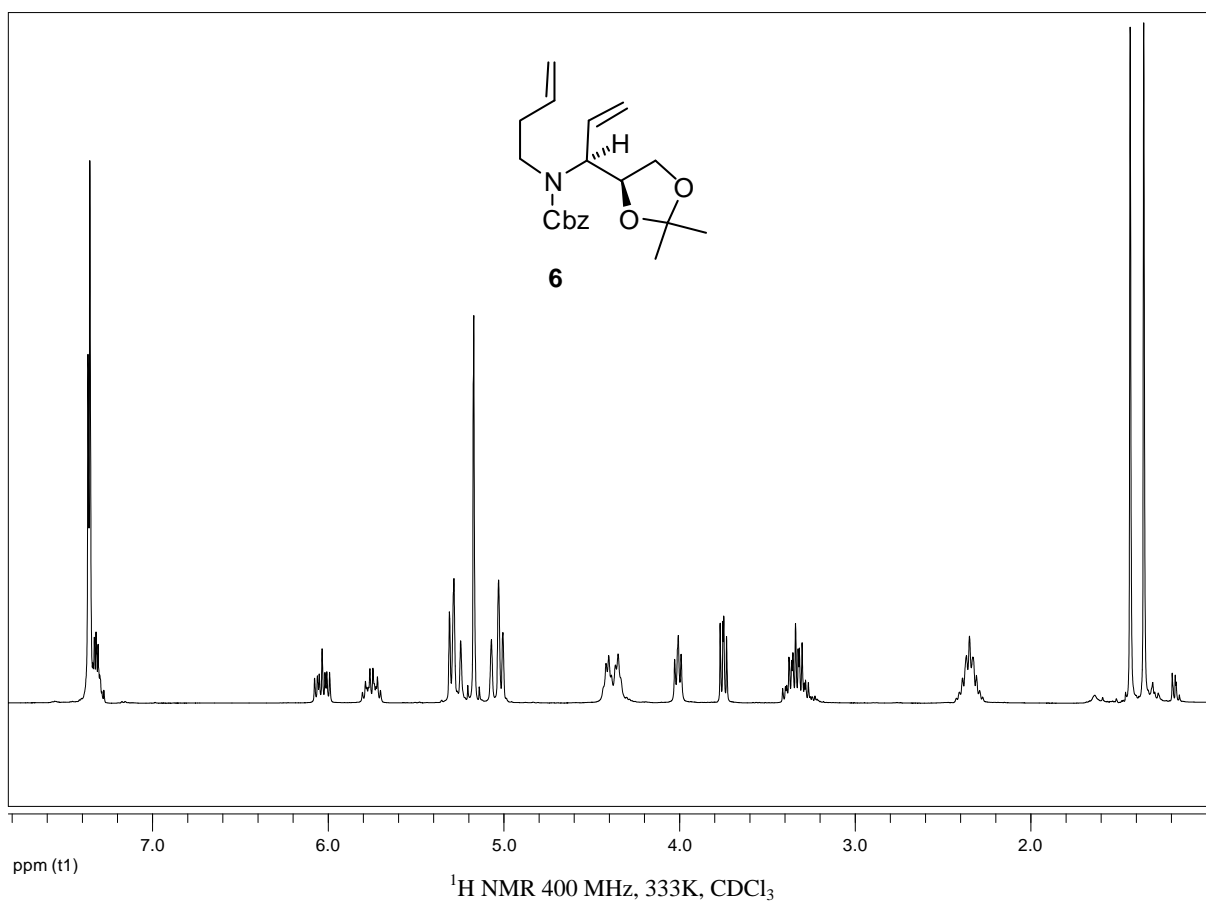
<sup>b</sup> Phytoquest Limited, Plas Gogerddan, Aberystwyth, Ceredigion, SY23 3EB, UK.

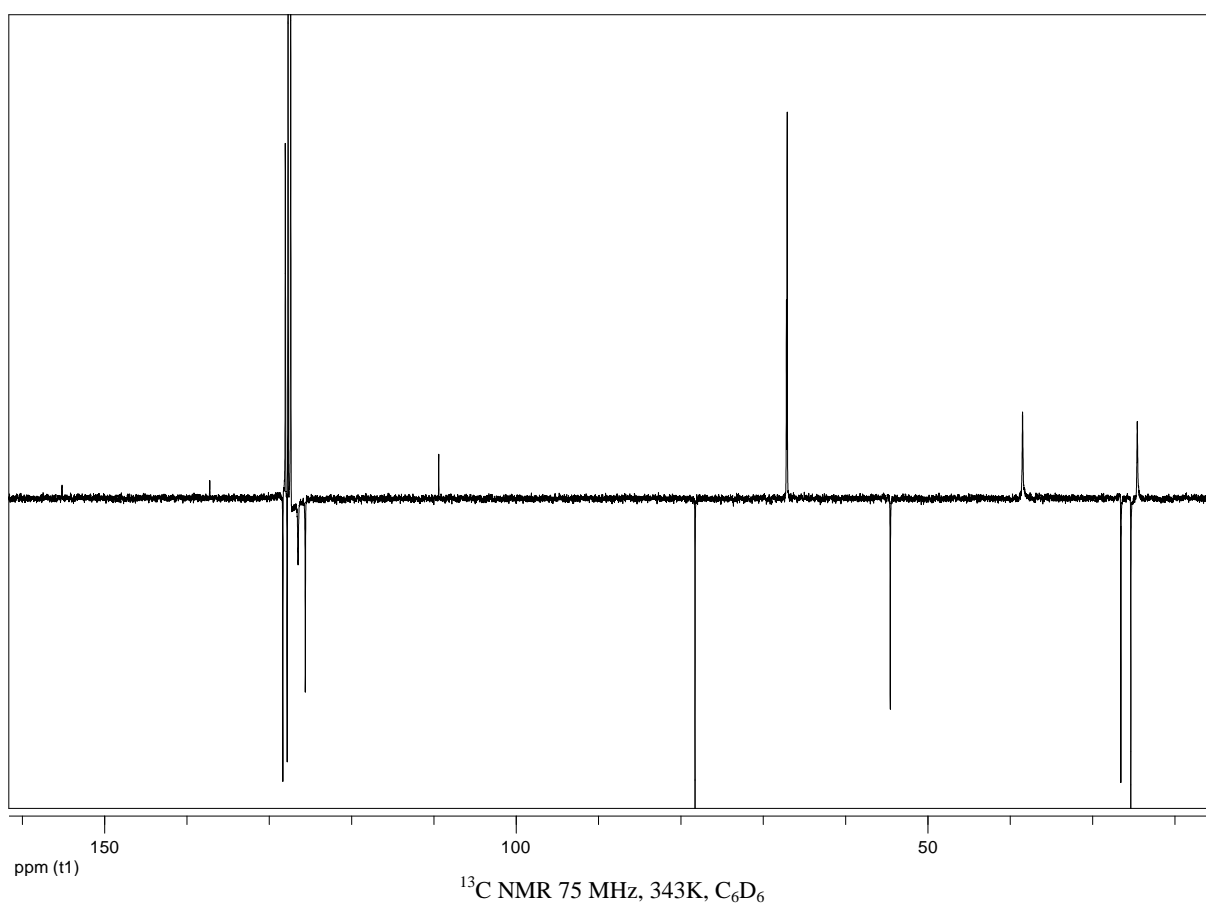
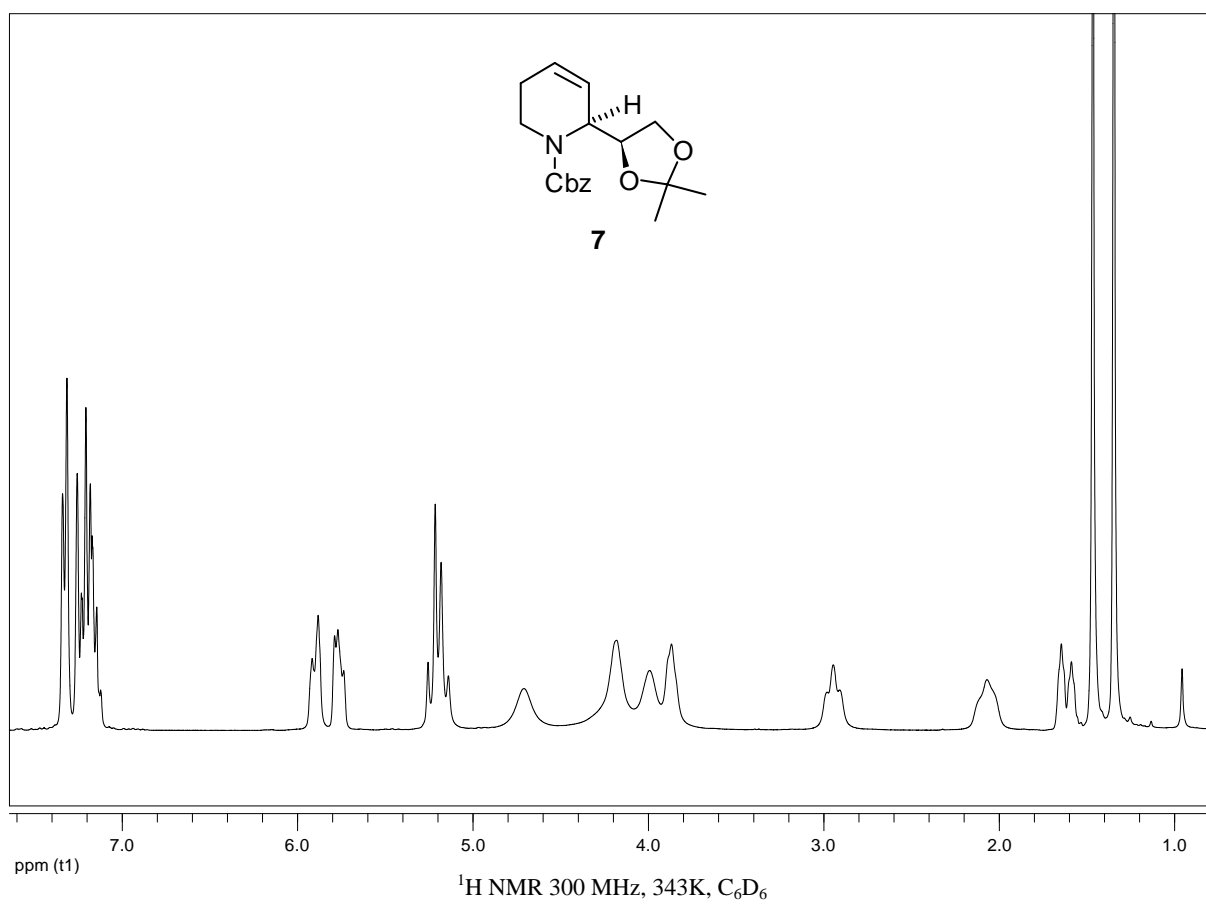
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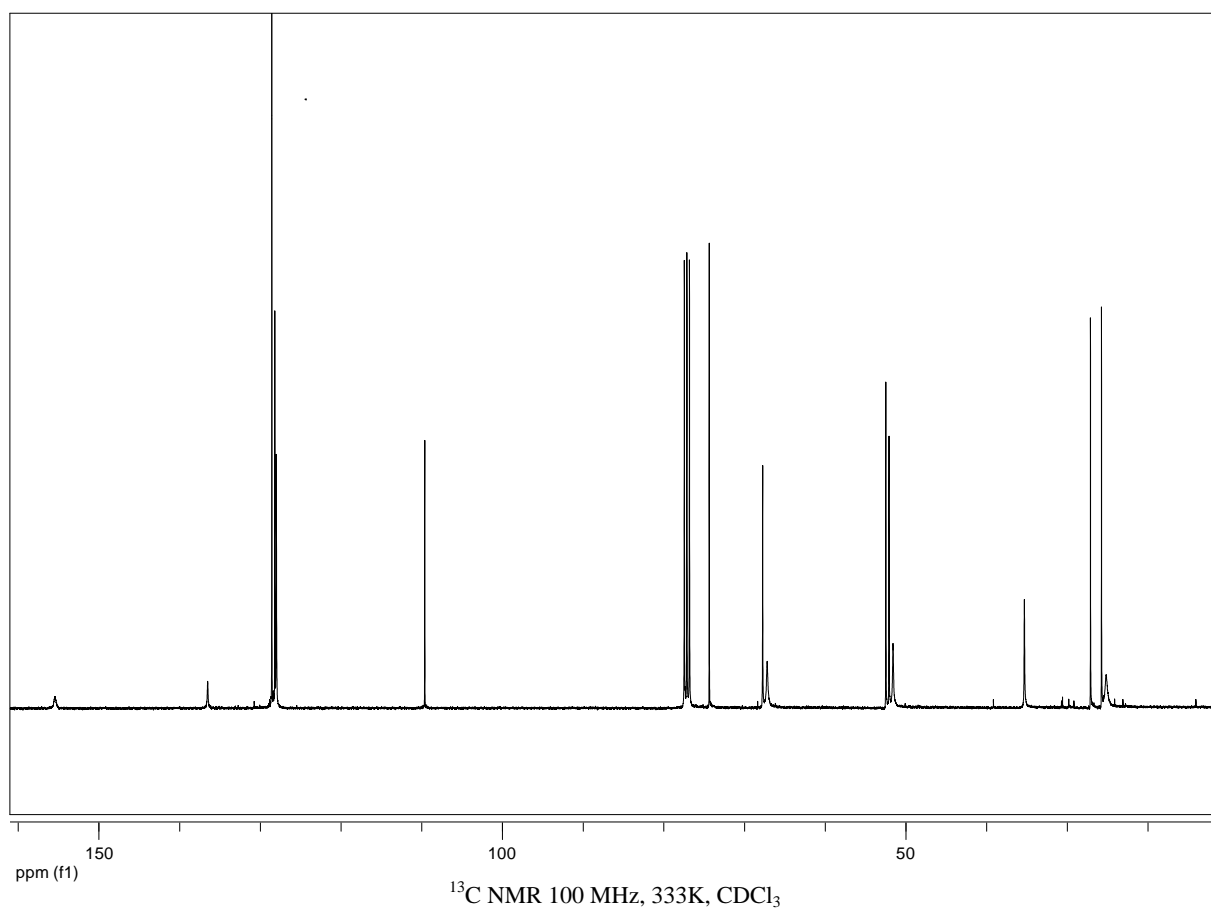
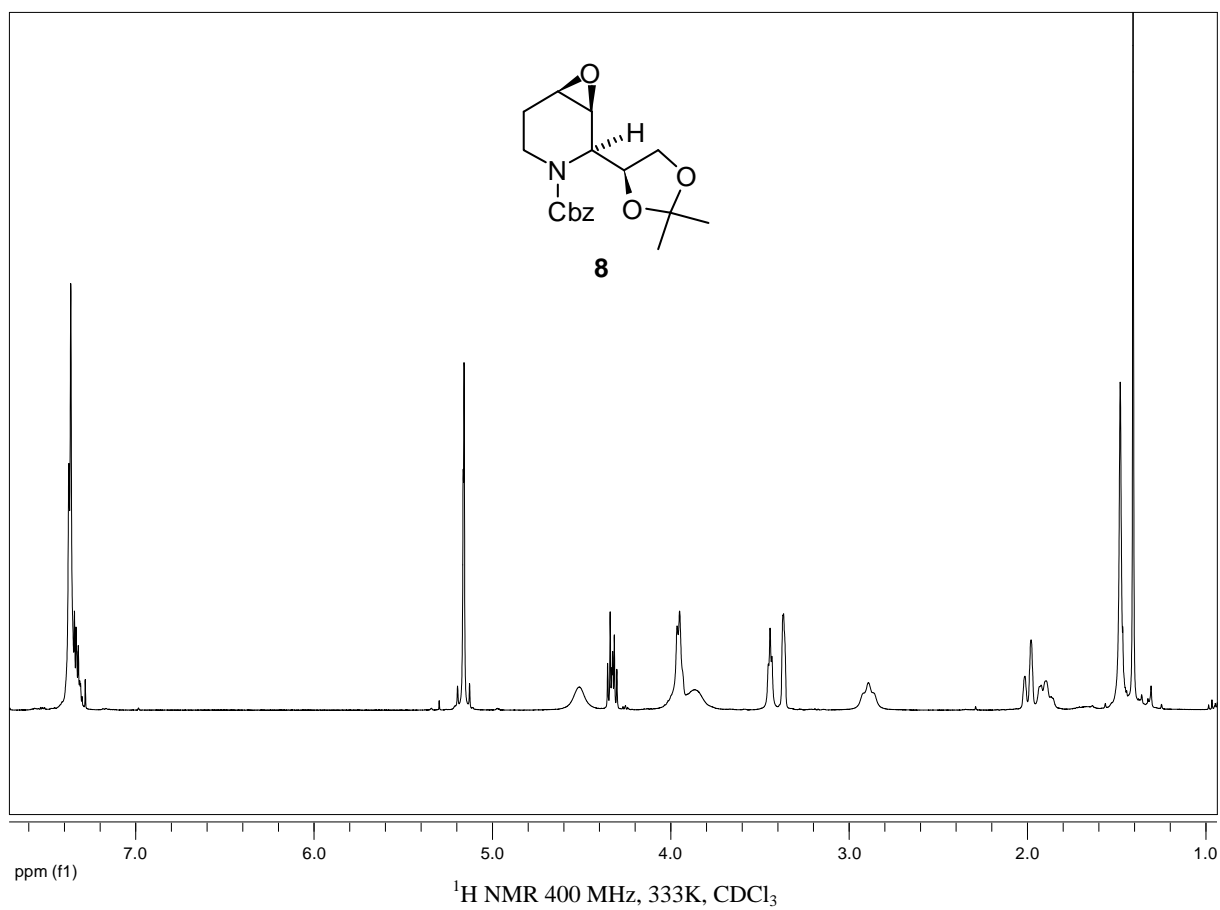
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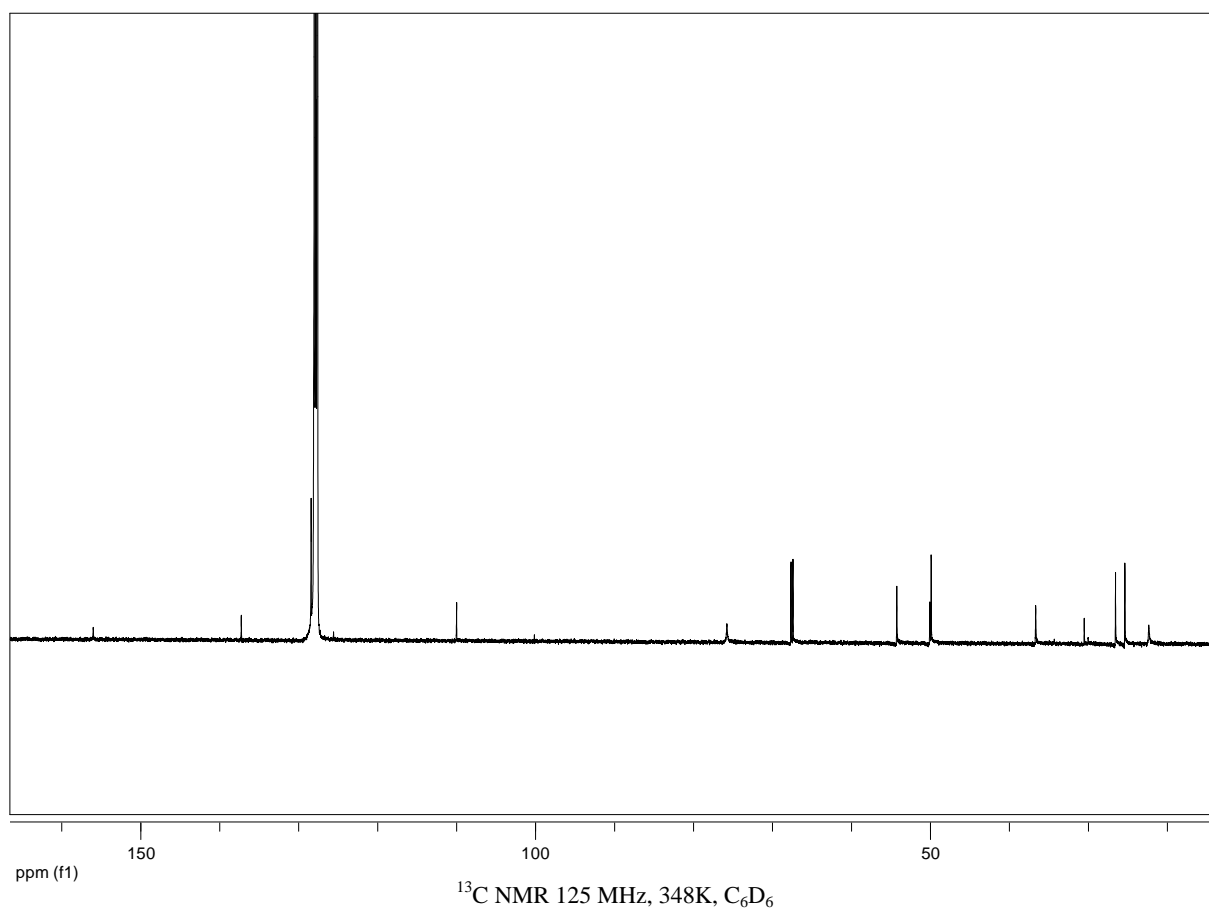
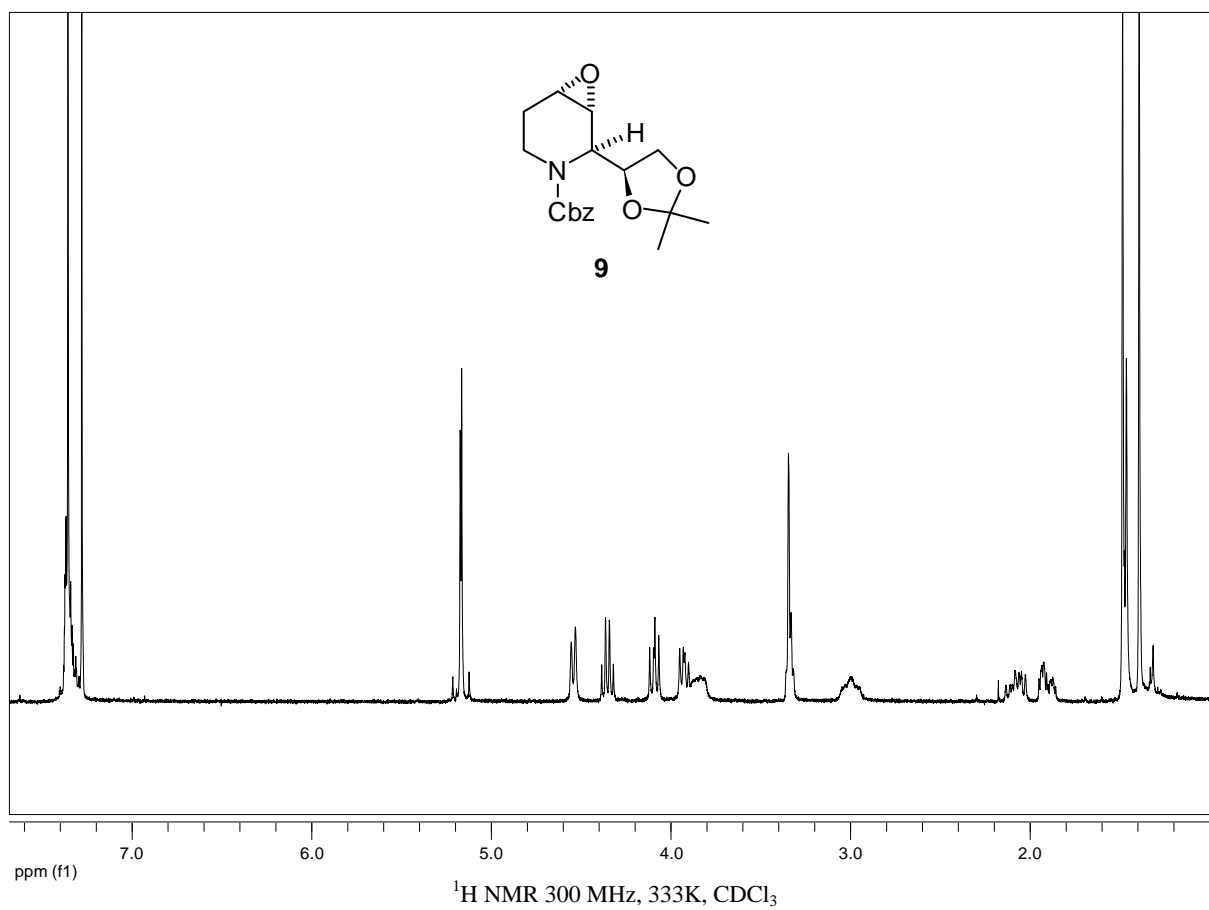


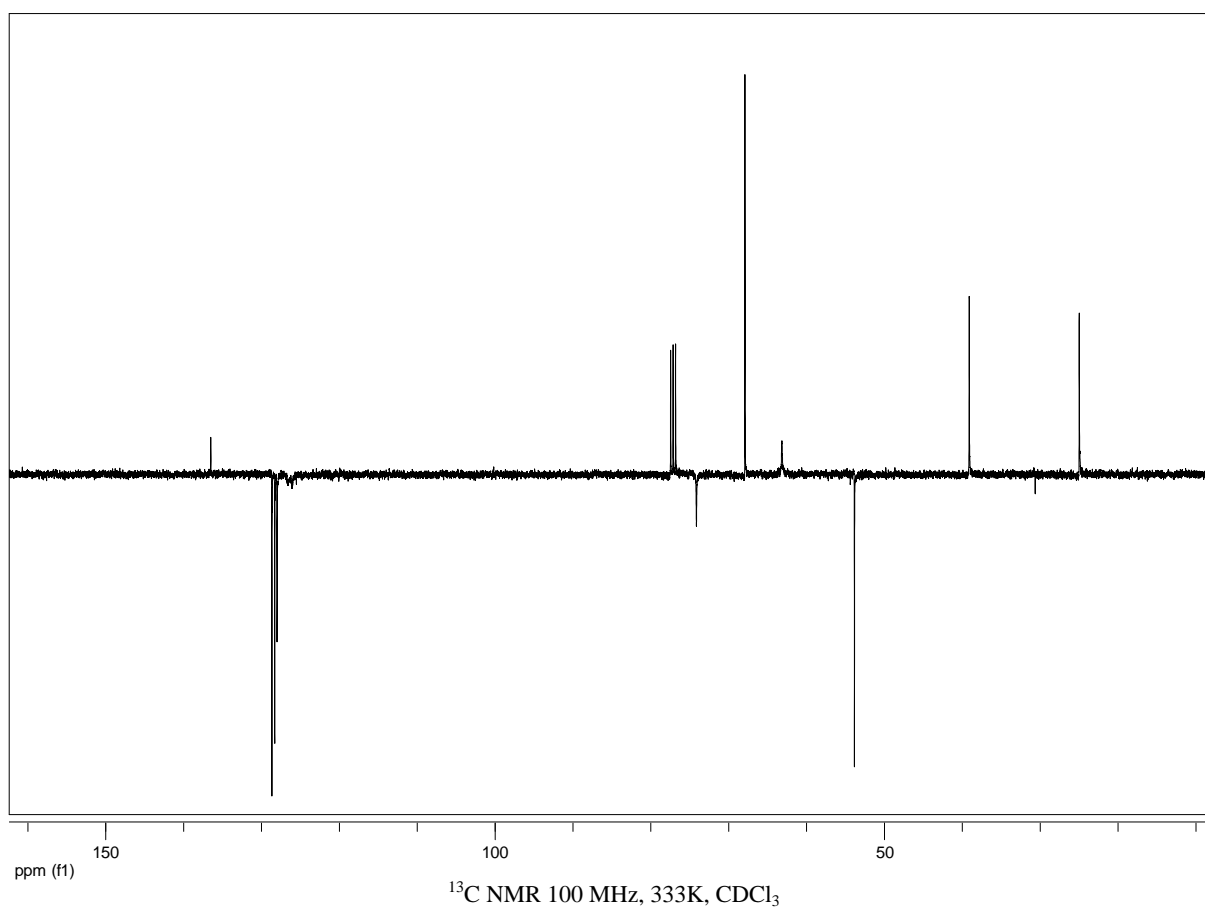
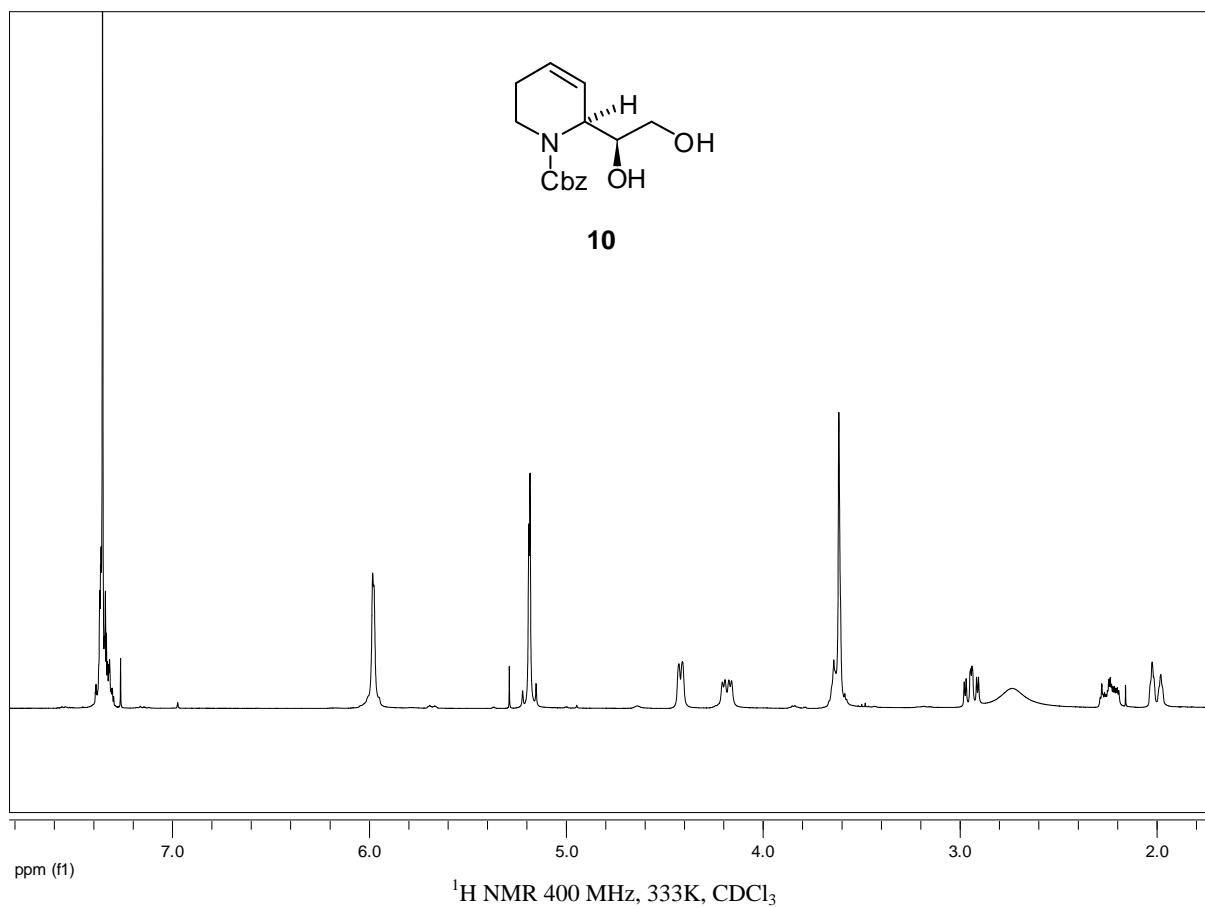




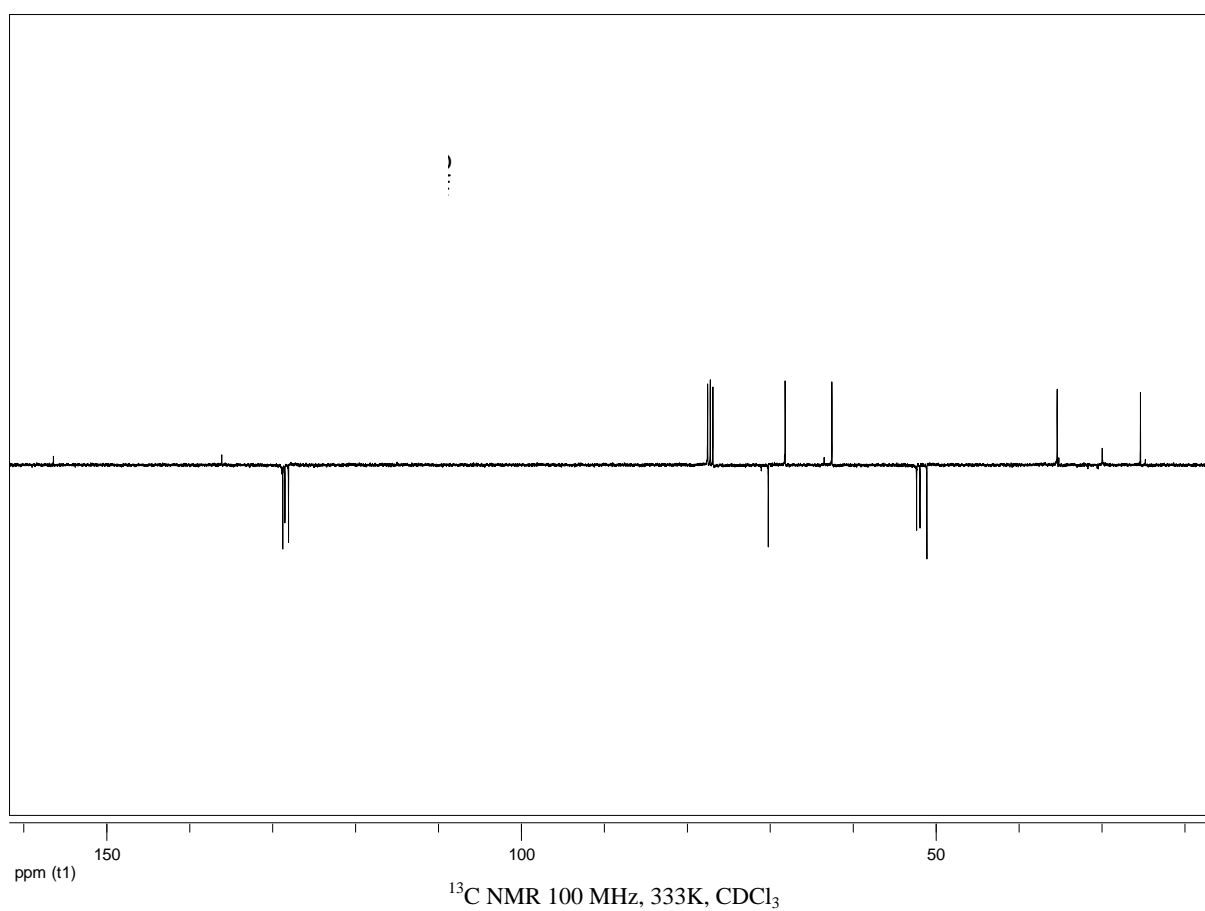
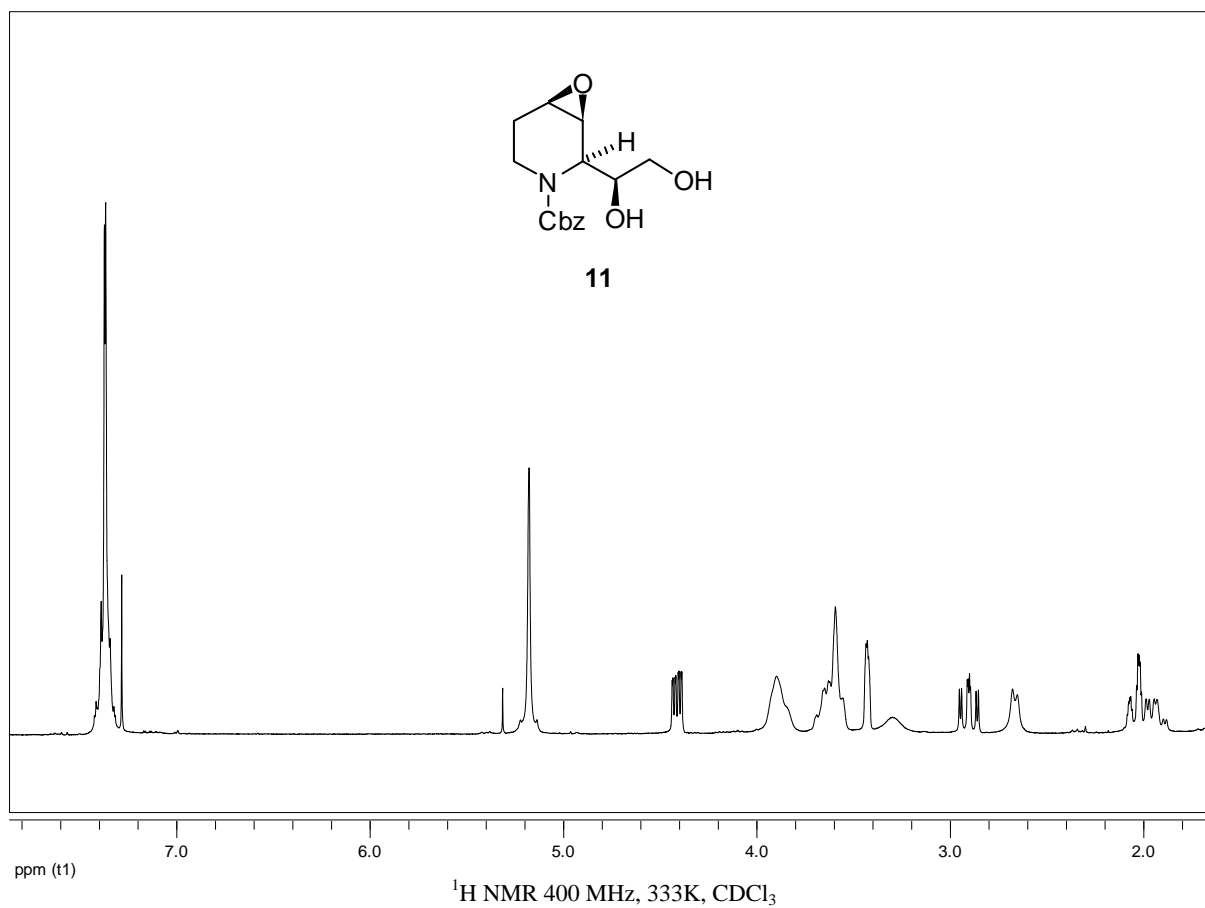


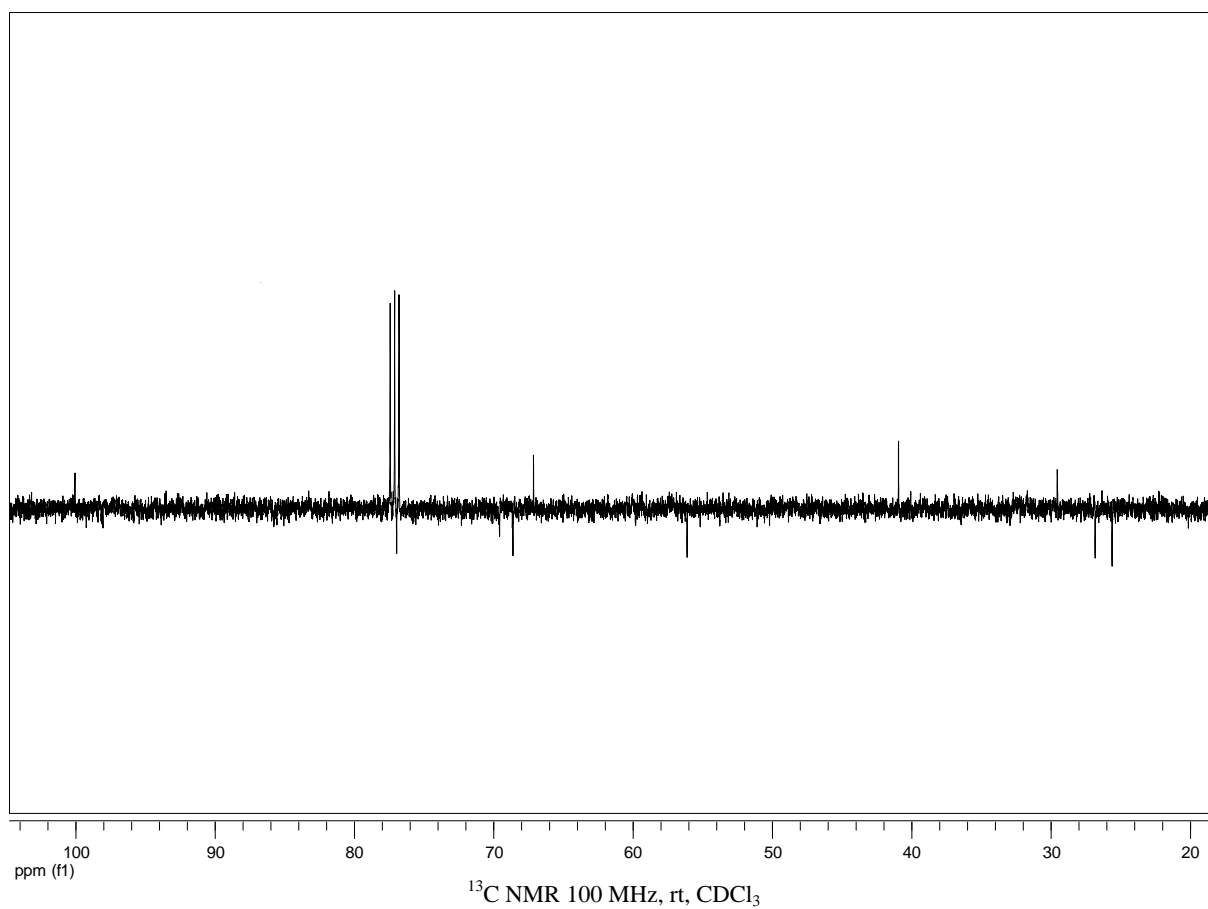
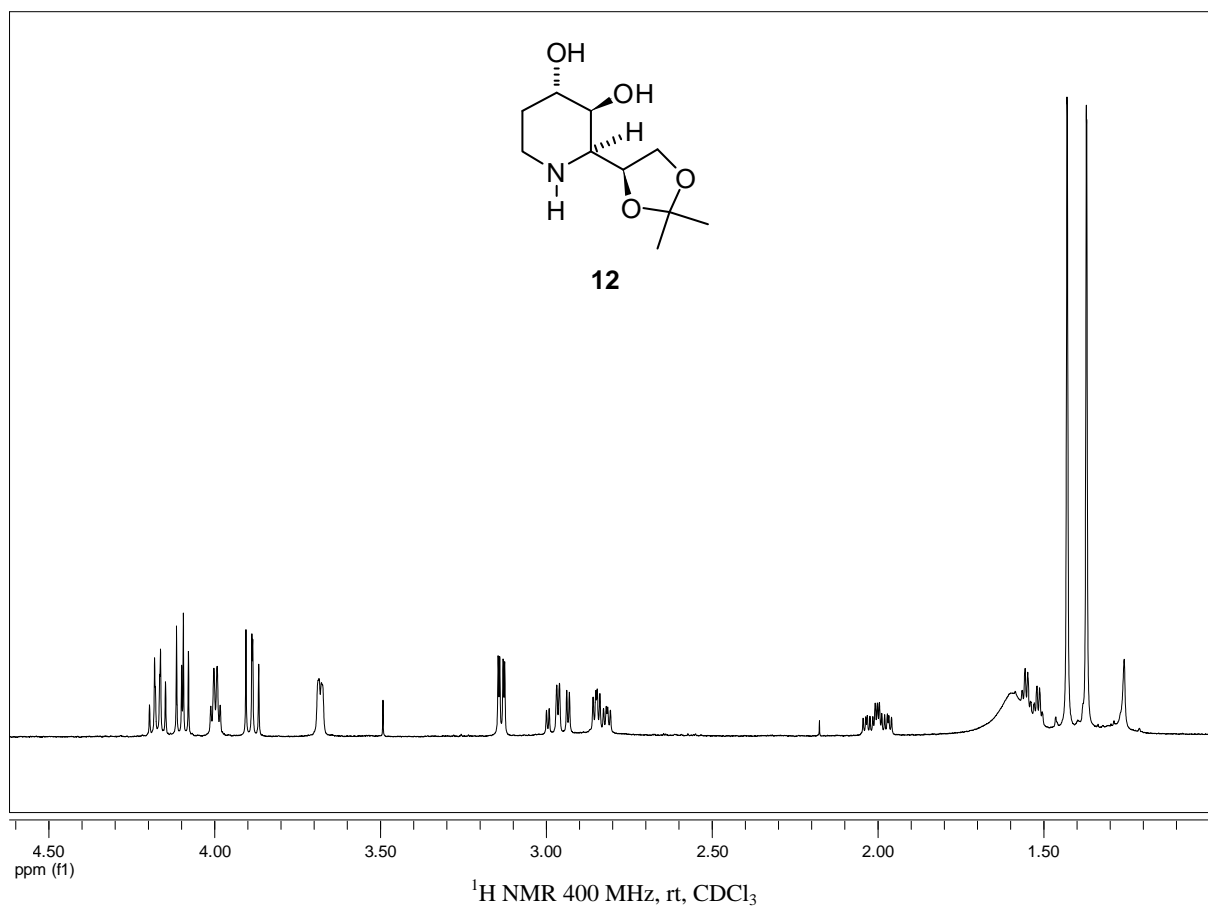




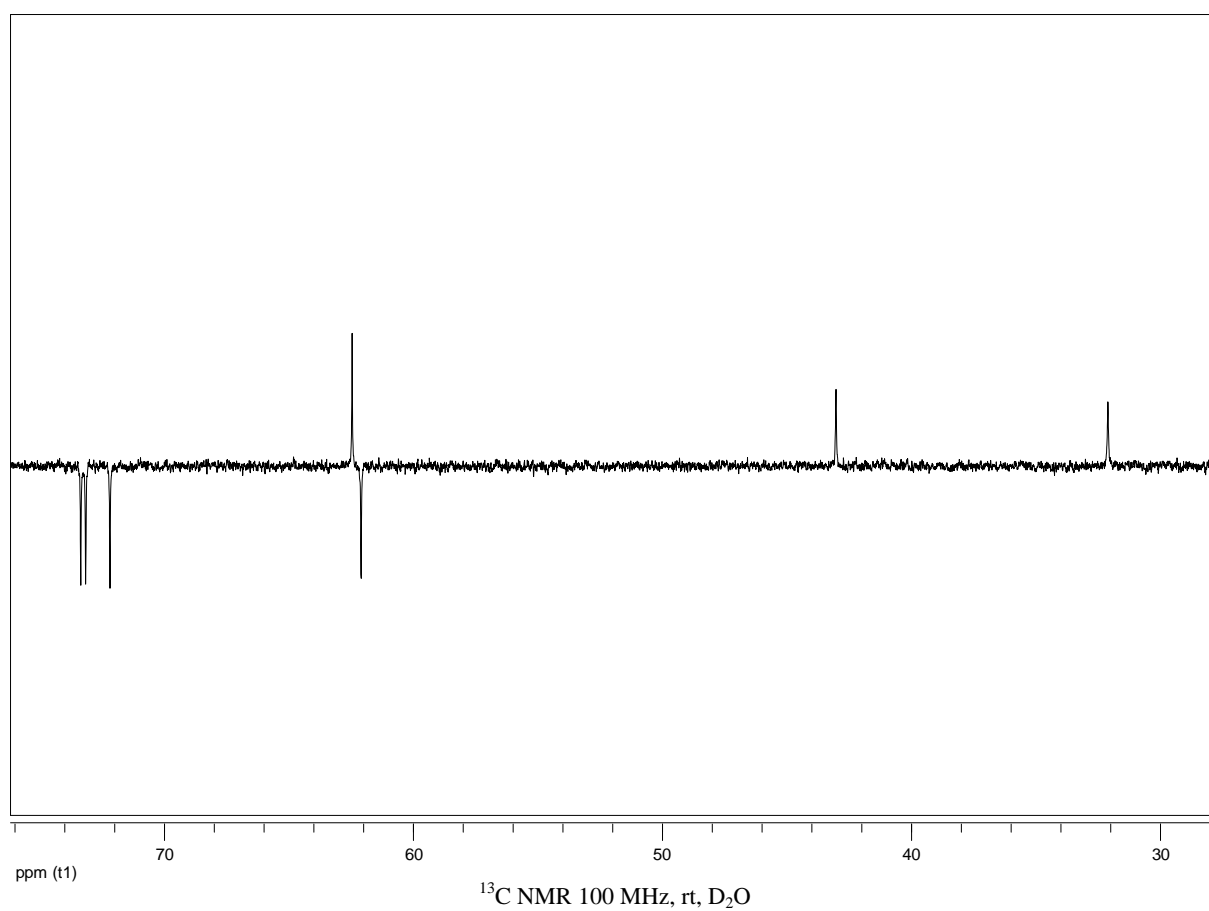
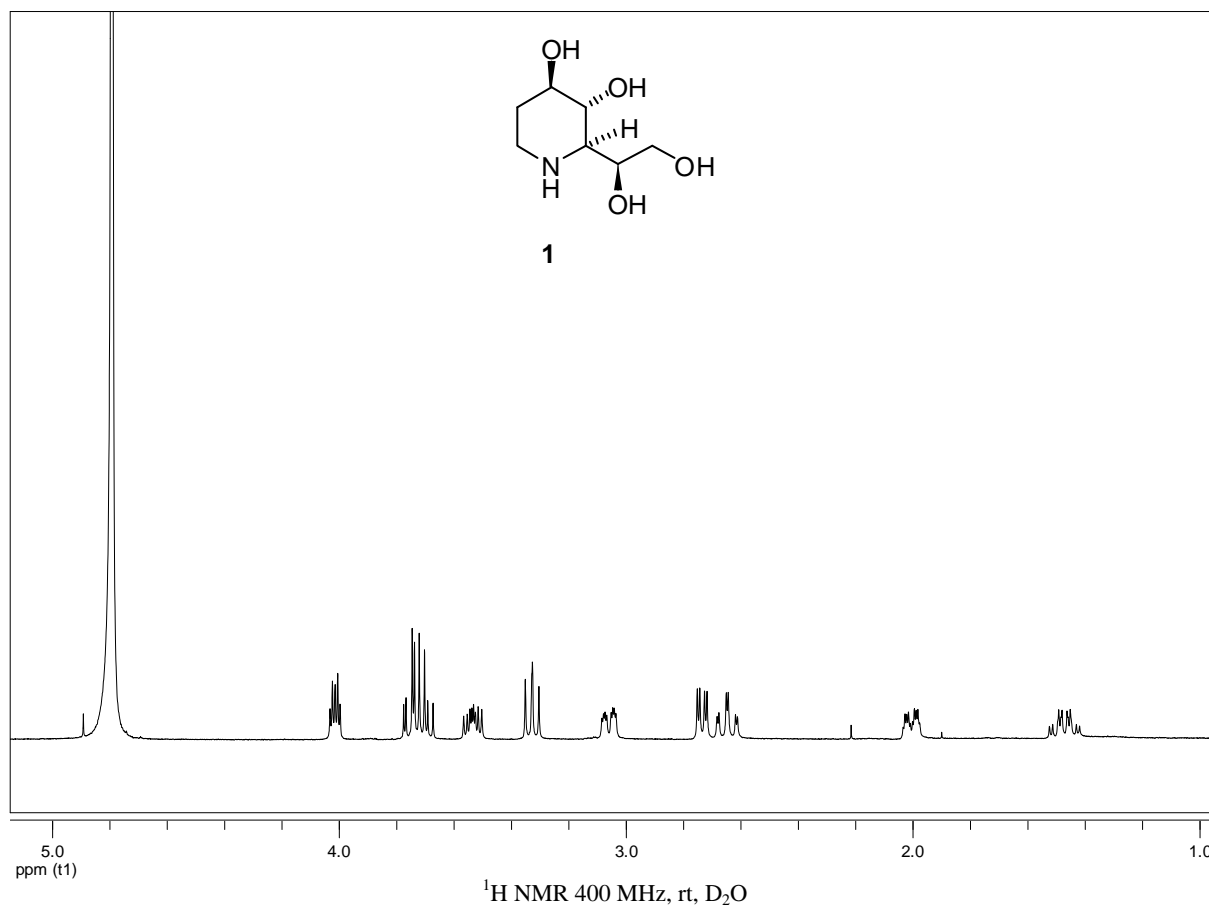


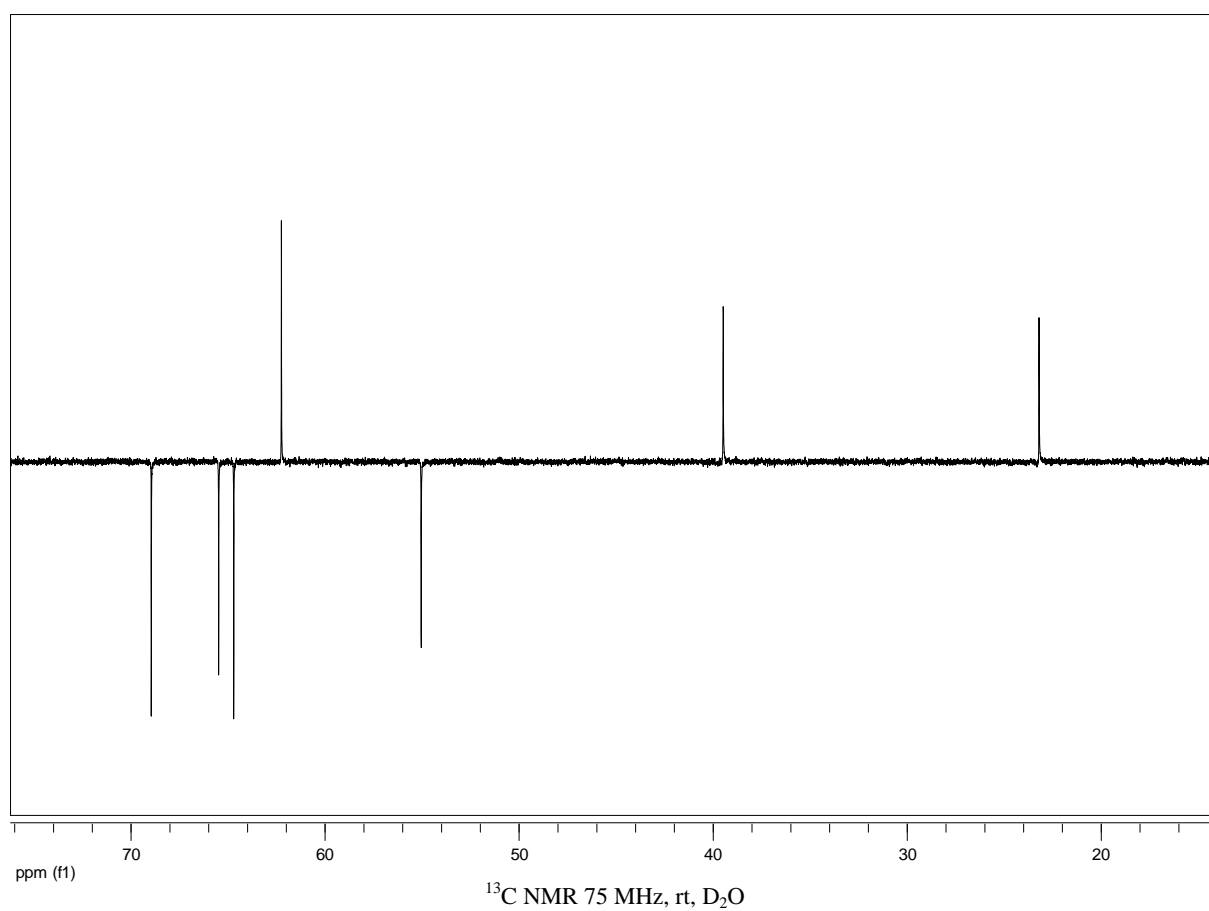
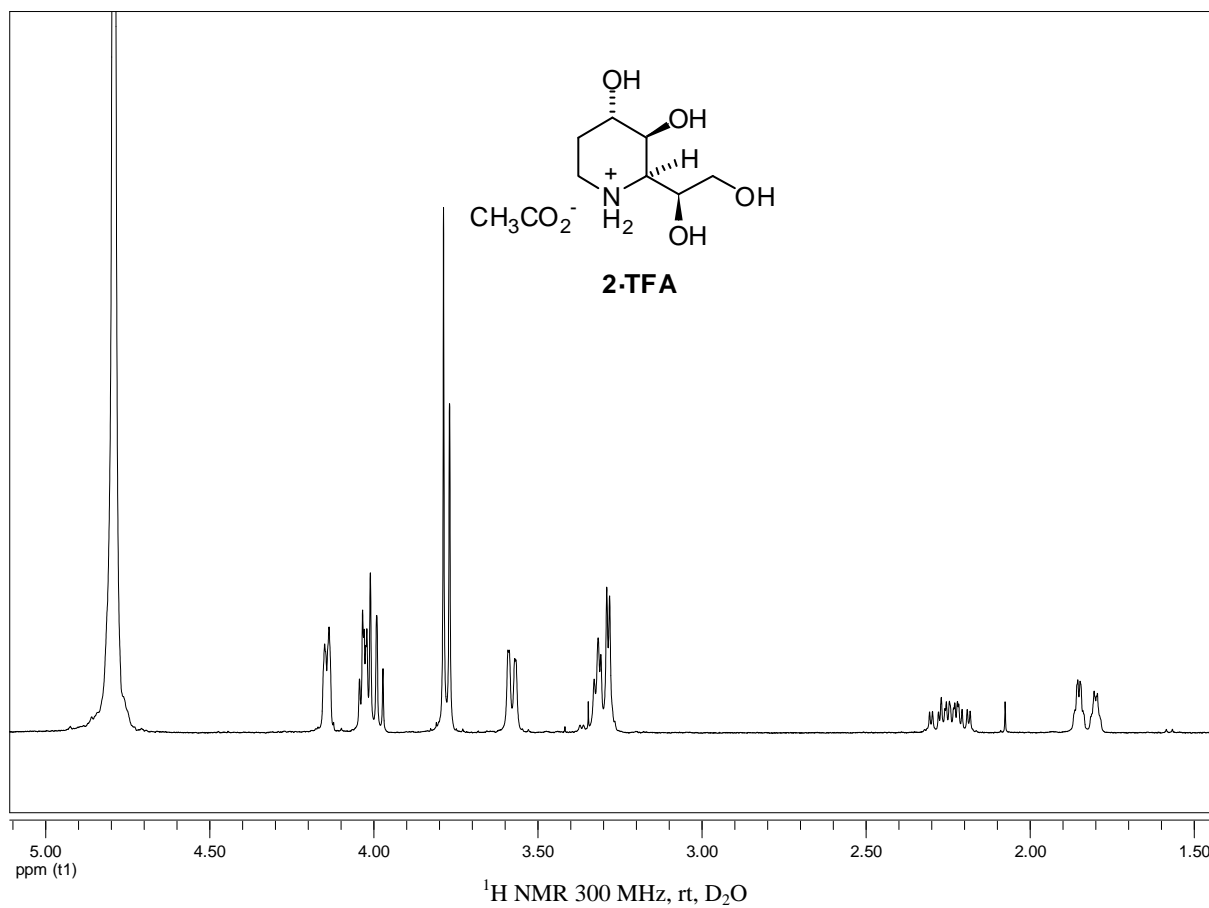


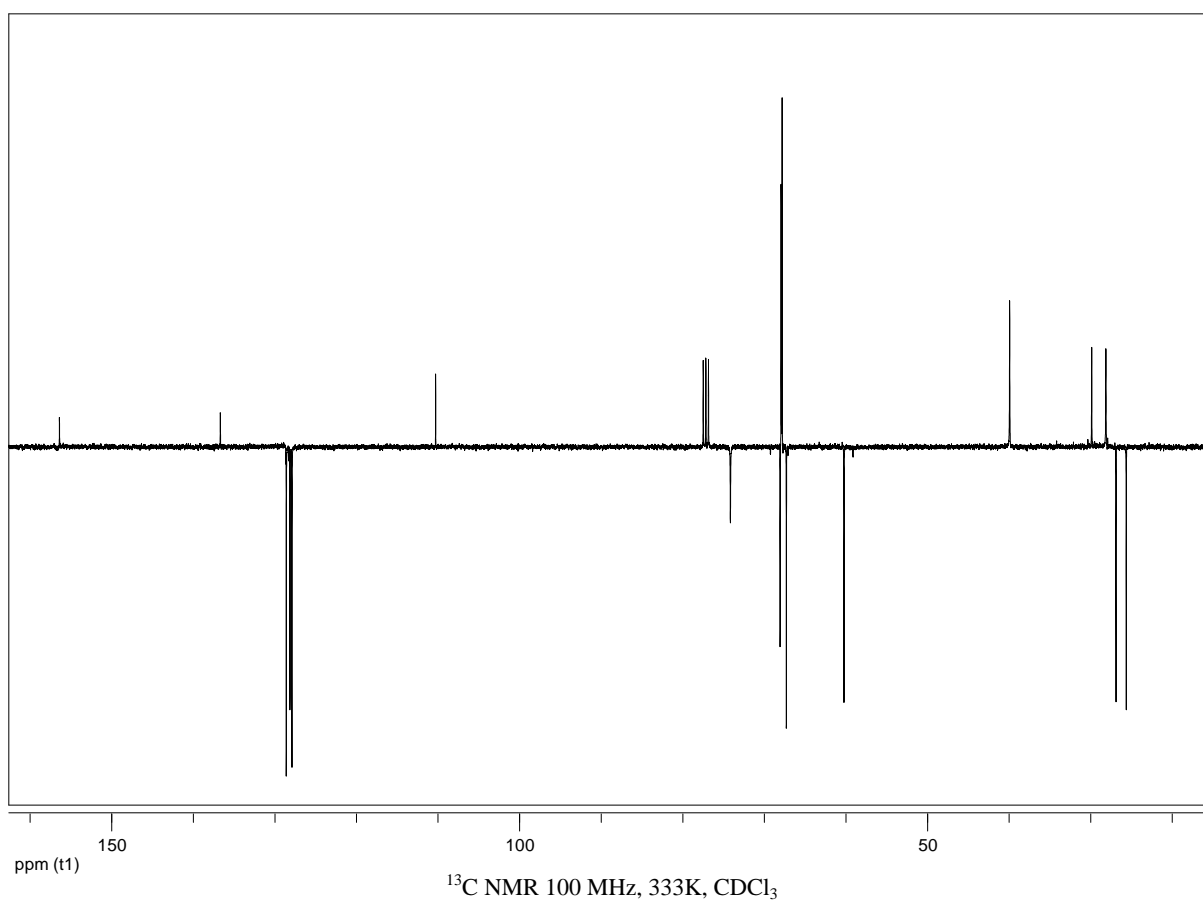
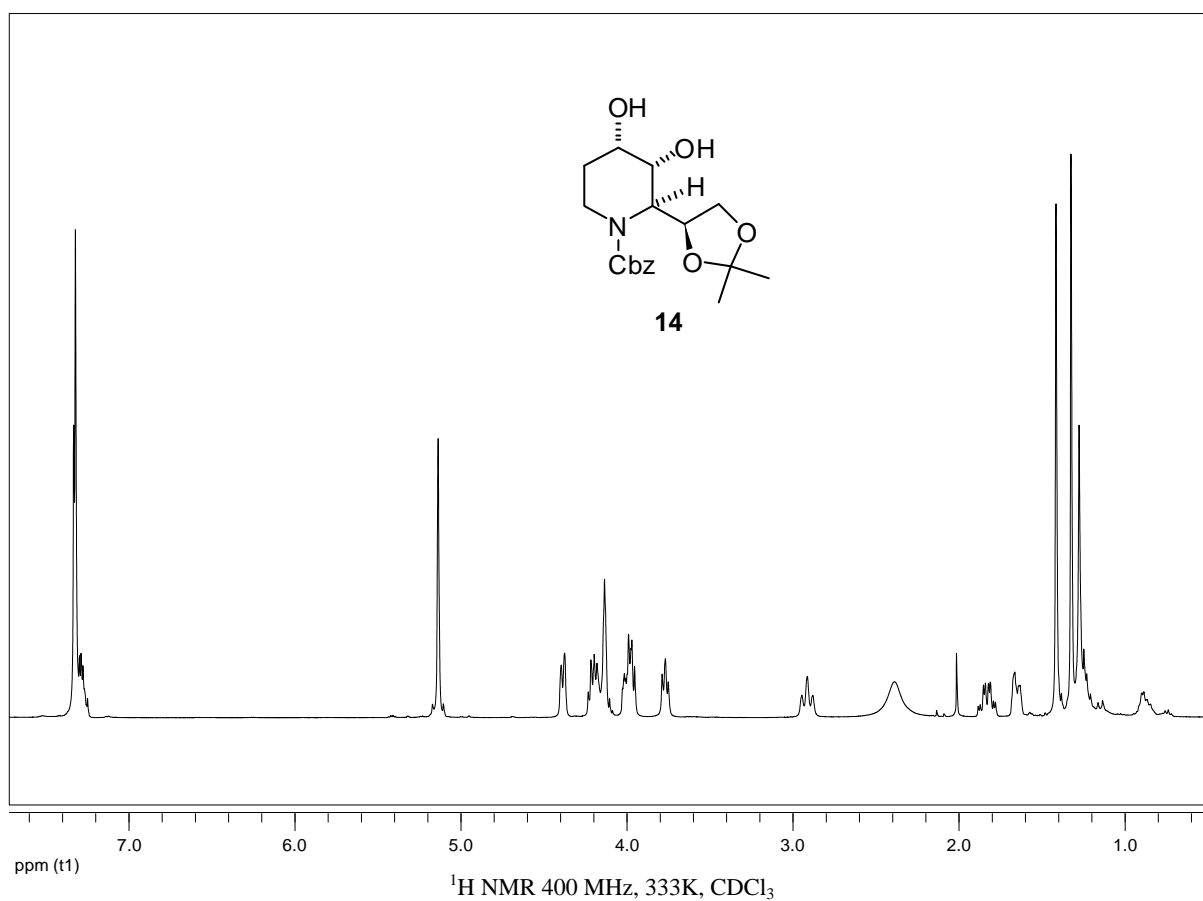


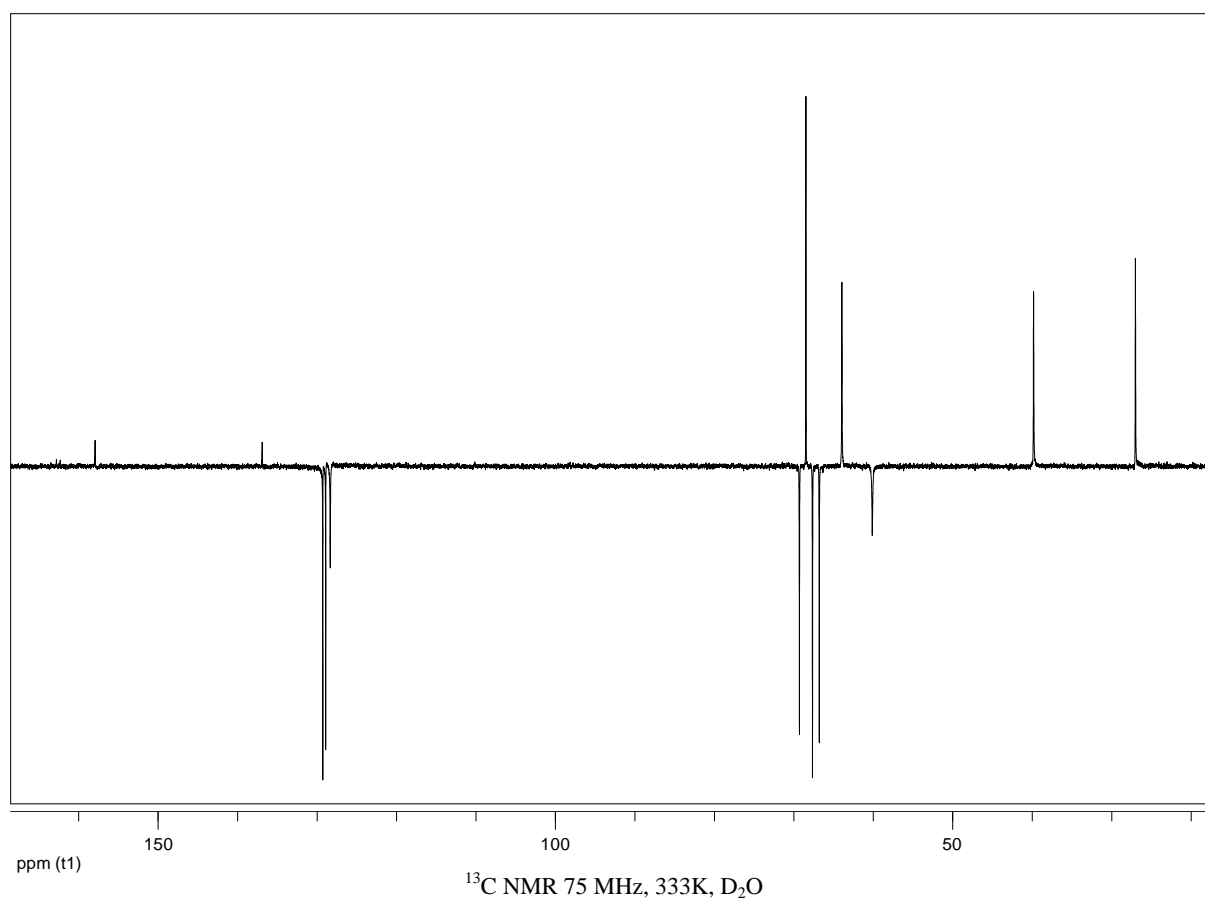
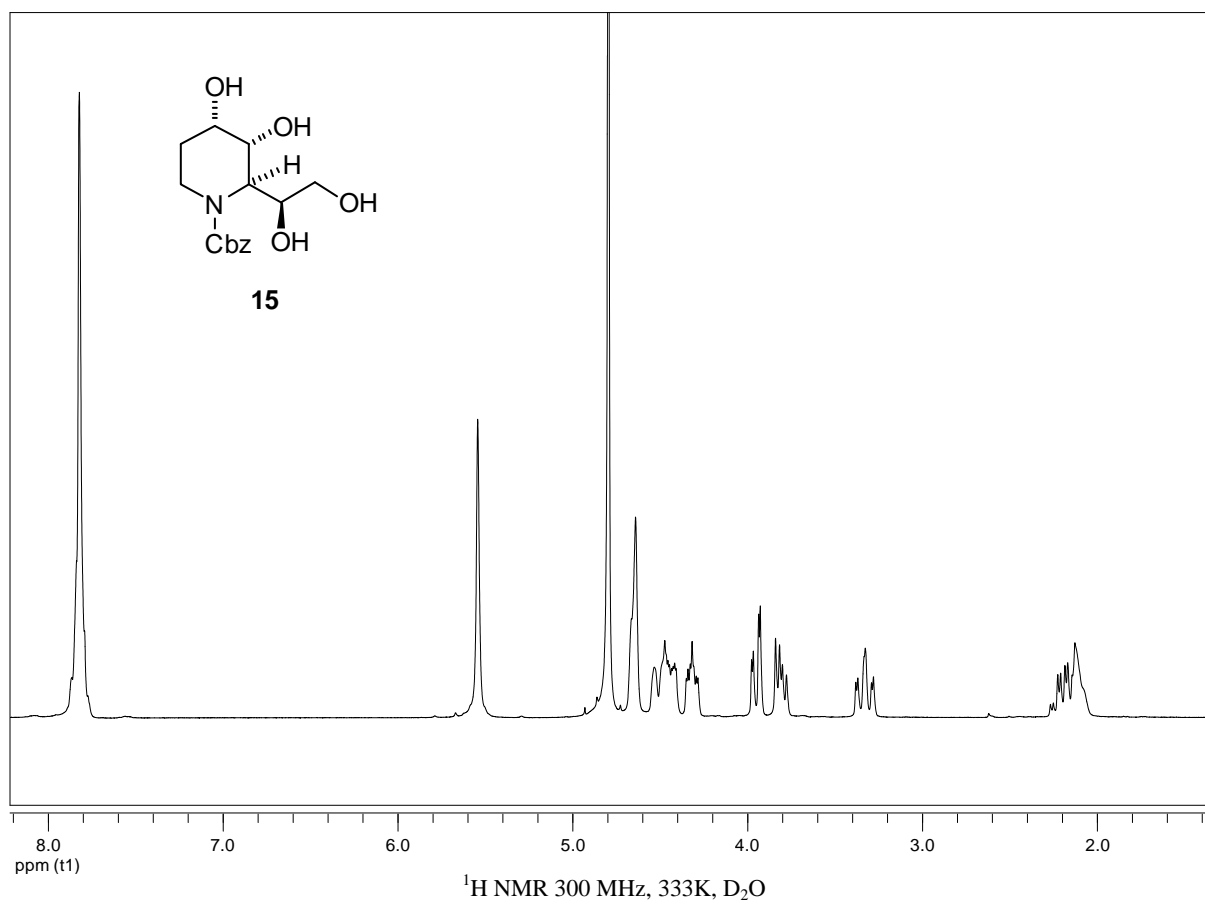


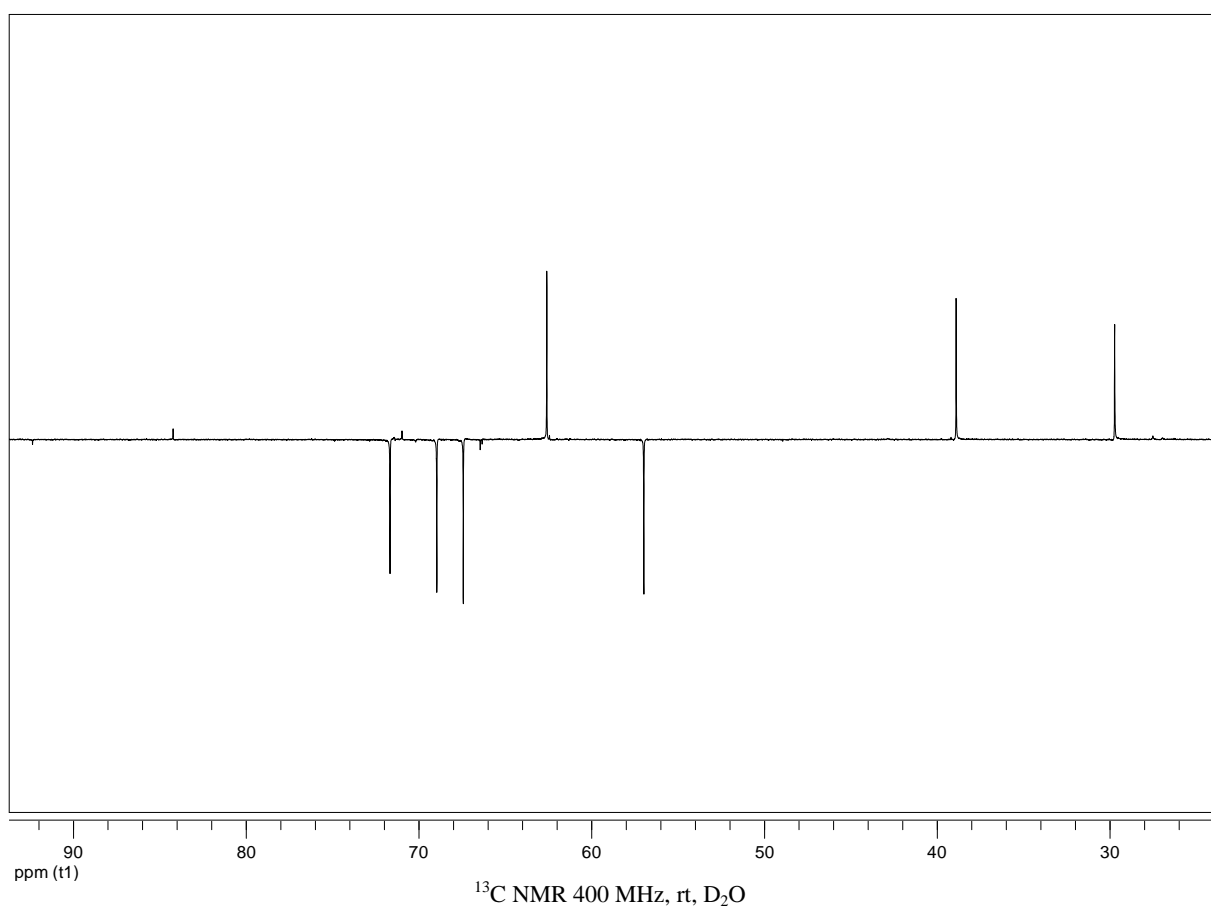
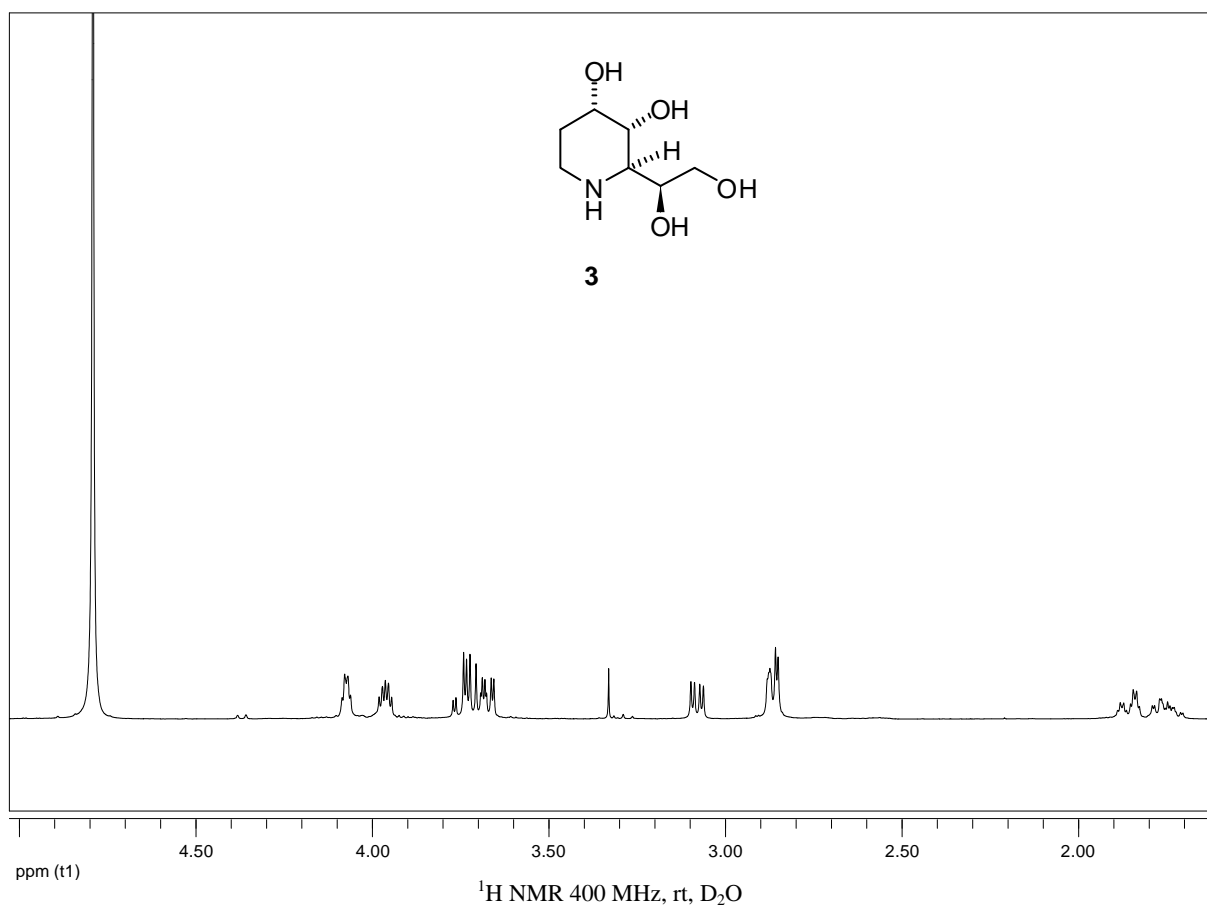




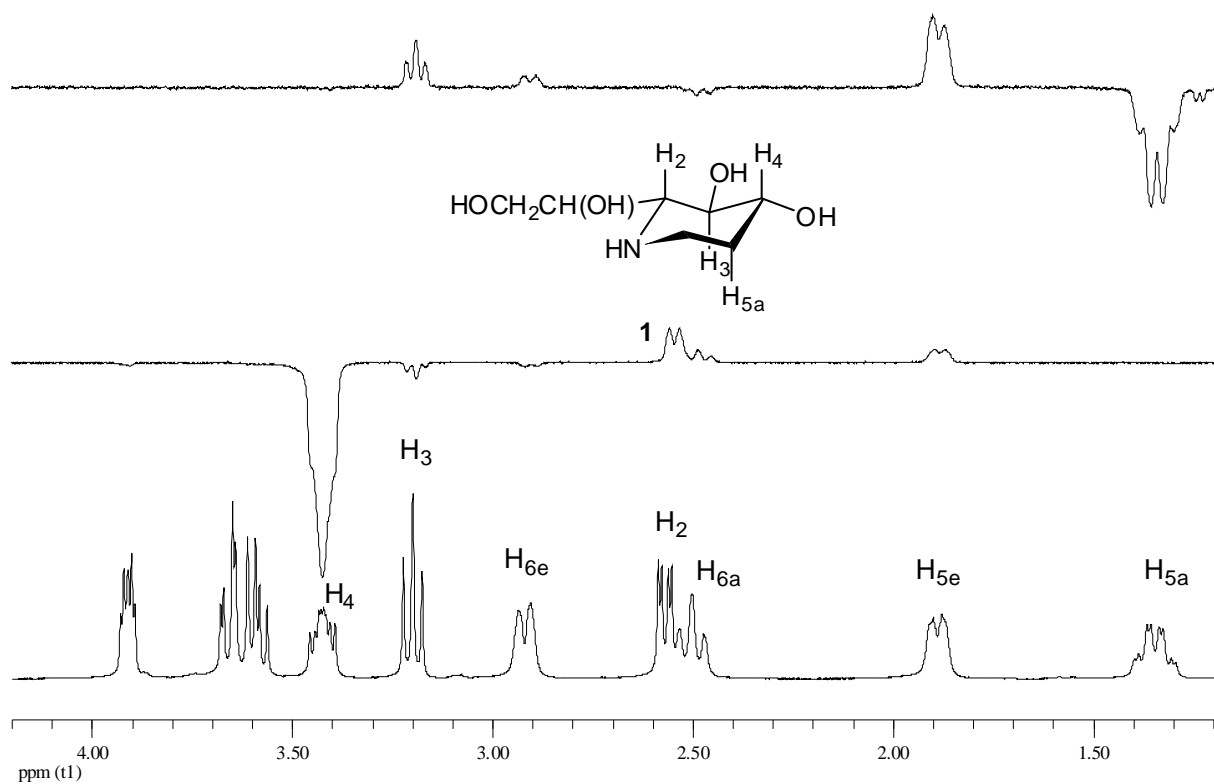












Selective ge-1D ROESY on compound **1**

**Table 1** Glycosidase inhibition assays for compounds **1**, **2** and **3**<sup>a</sup>

enzyme	source	Substrate (5mM)	pH	<b>1</b>	<b>2</b>	<b>3</b>
$\alpha$ -D-glucosidase	Yeast ( <i>Saccharomyces cerevisiae</i> )	PNP- $\alpha$ -D-glucopyranoside	6.8	-9	0	0
$\alpha$ -D-glucosidase	<i>Bacillus sterothermophilus</i>	PNP- $\alpha$ -D-glucopyranoside	6.8	-35	17	36
$\alpha$ -D-glucosidase	Rice ( <i>Oryza sativa</i> )	PNP- $\alpha$ -D-glucopyranoside	4.0	-11	0	11
$\beta$ -D-glucosidase	Almond	PNP- $\beta$ -D-glucopyranoside	5.0	-8	17	6
$\alpha$ -D-galactosidase	Green coffee bean ( <i>Coffea</i> sp.)	PNP- $\alpha$ -D-galactopyranoside	6.5	-16	-10	0
$\beta$ -D-galactosidase	Bovine liver	PNP- $\beta$ -D-galactopyranoside	7.3	27	25	7
$\alpha$ -D-mannosidase	Jack bean ( <i>Canavalia ensiformis</i> )	PNP- $\alpha$ -D-mannopyranoside	4.5	-6	-20	-15
$\beta$ -D-mannosidase	<i>Cellulomonas fimi</i>	PNP- $\beta$ -D-mannopyranoside	6.5	ND	-12	-9
<i>N</i> -acetyl- $\beta$ -D-glucosaminidase	Bovine liver	PNP- <i>N</i> -acetyl- $\beta$ -D-glucosaminide	4.25	0	18	16
<i>N</i> -acetyl- $\beta$ -D-glucosaminidase	Bovine kidney	PNP- <i>N</i> -acetyl- $\beta$ -D-glucosaminide	5.0	-20	8	6
$\beta$ -D-glucuronidase	Jack bean	PNP- $\beta$ -D-glucuronide	5.0	0	0	0

<sup>a</sup>% Inhibition at 143 $\mu$ g/ml.