

Electronic Supplementary Information for

Simple, Versatile, and Chemoselective Reduction of Secondary Amides and Lactams to Amines with Tf₂O - NaBH₄ or Cp₂ZrHCl - NaBH₄ System

Pei-Qiang Huang*^{a,b} and Hui Geng^a

^a *Department of Chemistry and Fujian Provincial Key Laboratory of Chemical Biology, Collaborative Innovation Centre of Chemistry for Energy Materials, College of Chemistry and Chemical Engineering, Xiamen University, Xiamen, Fujian 361005, PR China*

^b *State Key Laboratory of Applied Organic Chemistry, Lanzhou University, Lanzhou 730000, PR China*

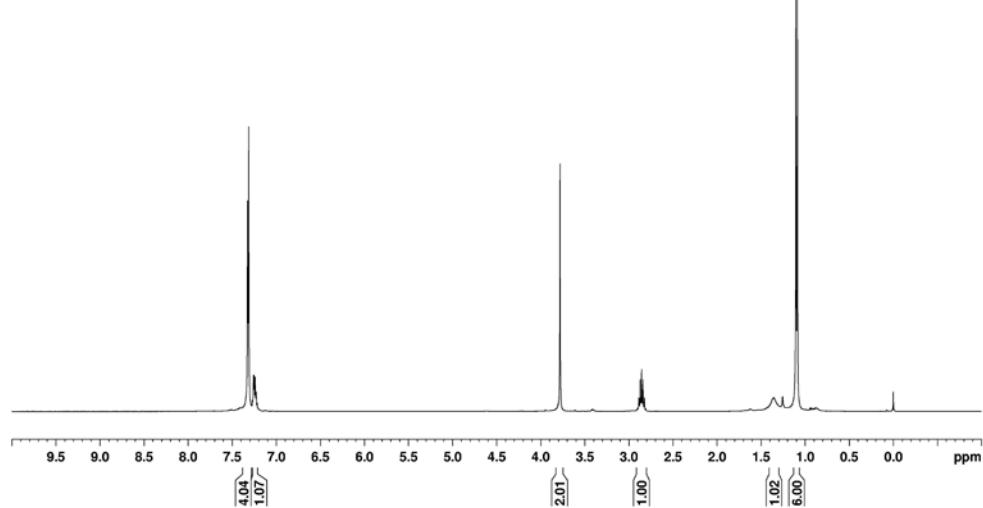
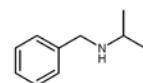
E-mail: pqhuang@xmu.edu.cn

Contents (29 pages):

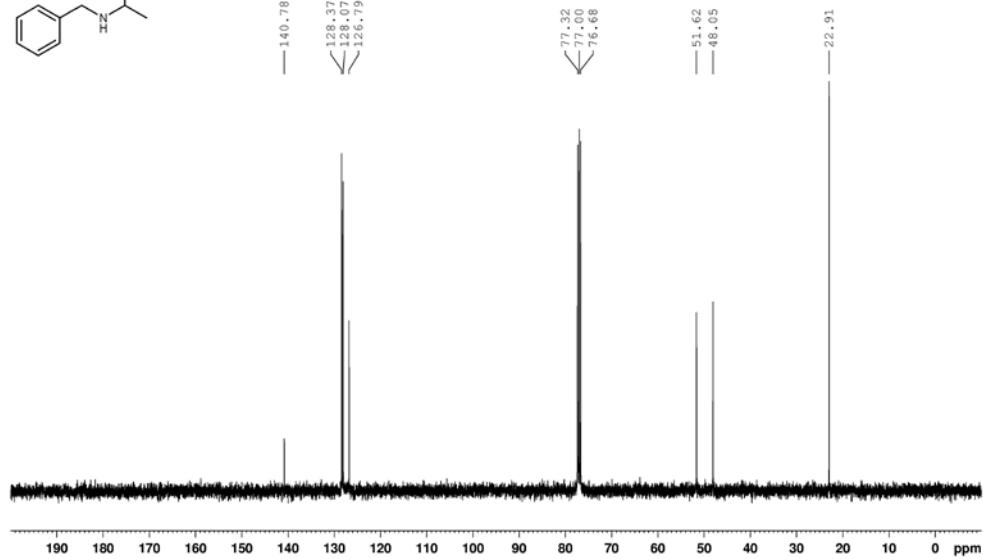
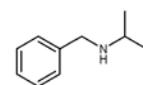
- ¹H and ¹³C NMR spectra of compounds **2a~2x**, **6**, **8**, **10**, **12**, **14** (pp. 2-30)

¹H and ¹³C NMR spectra of compound 2a:

GHB-134-H
2013/02/26

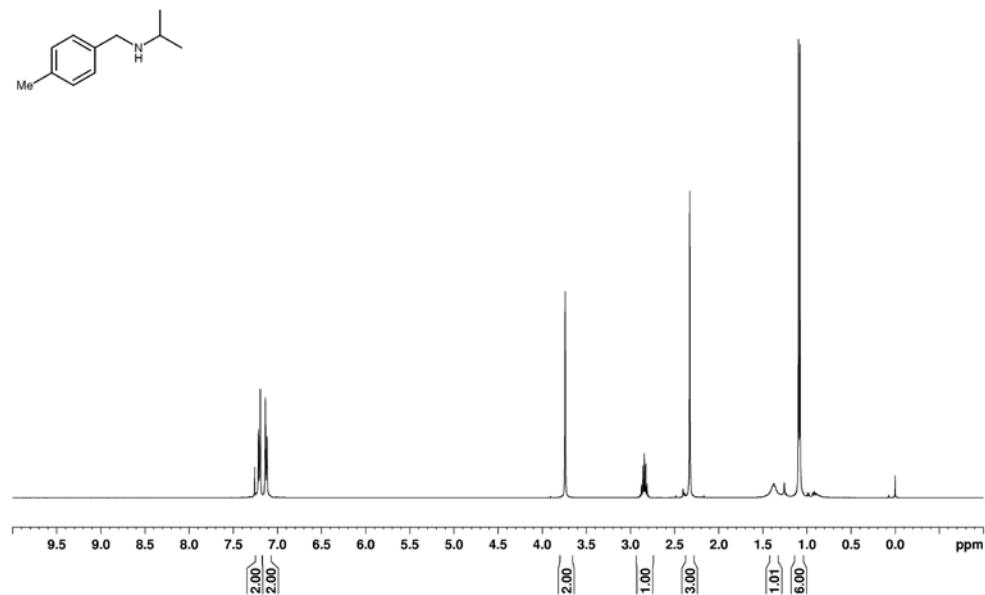


GHB-134-C
2013/02/26

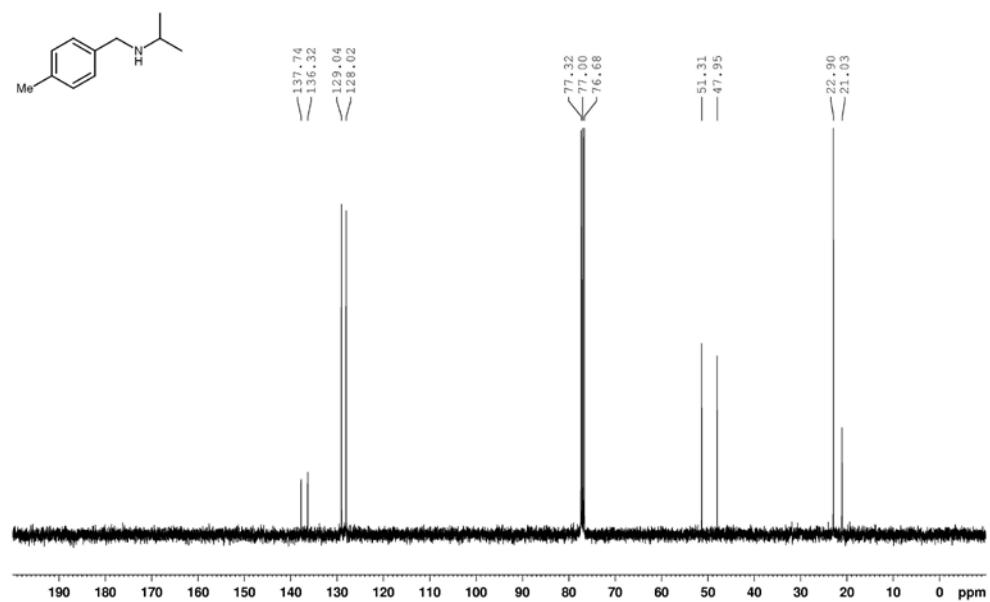


¹H and ¹³C NMR spectra of compound **2b**:

GHC-17-NMR-H
CDCl₃
20134/04/04

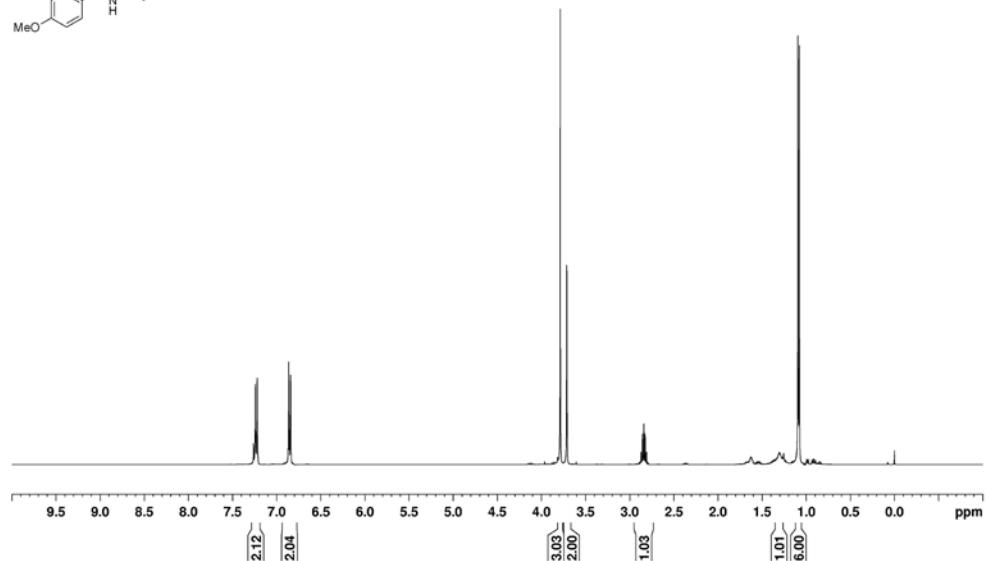
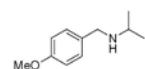


GHC-17-NMR-C
CDCl₃
20134/04/04

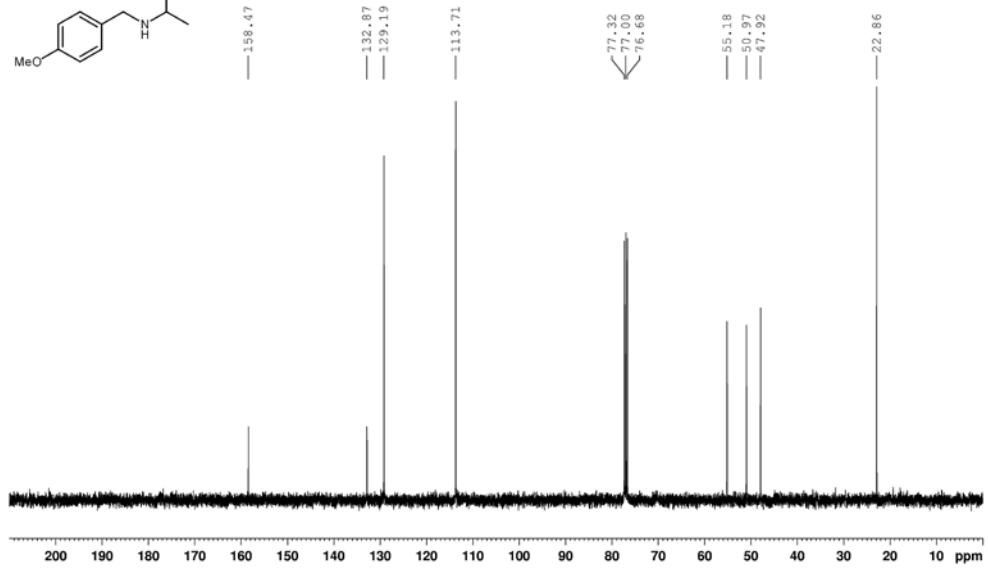
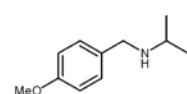


¹H and ¹³C NMR spectra of compound 2c:

GHB-81-PURE-H
CDCl₃
2013/12/04

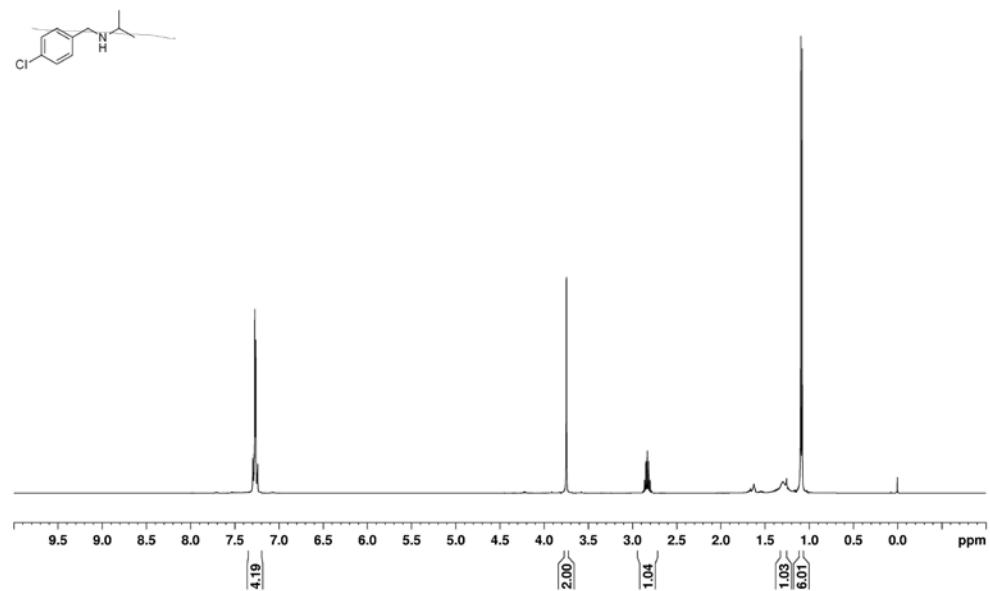


GHB-81-PURE-C
CDCl₃
2013/12/04

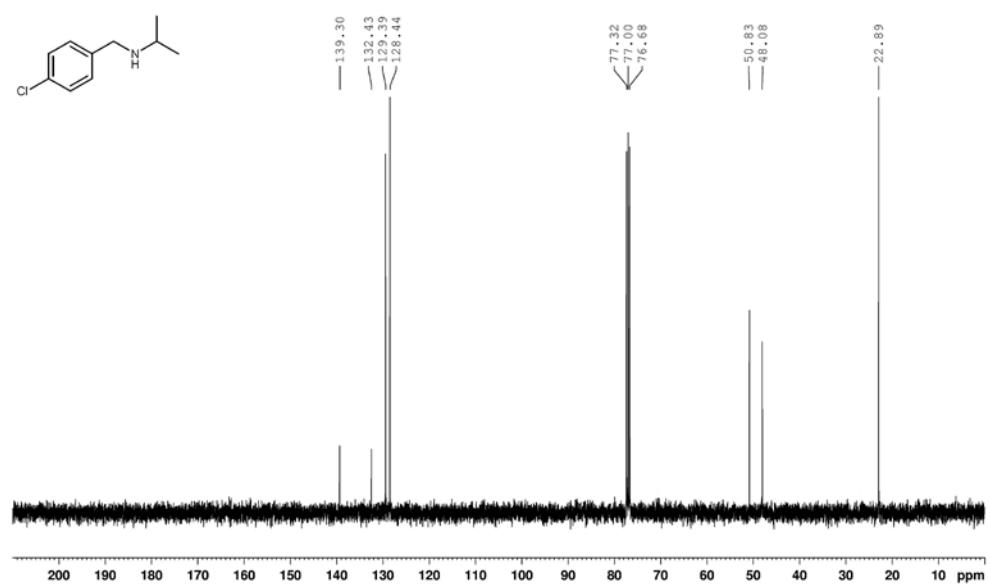


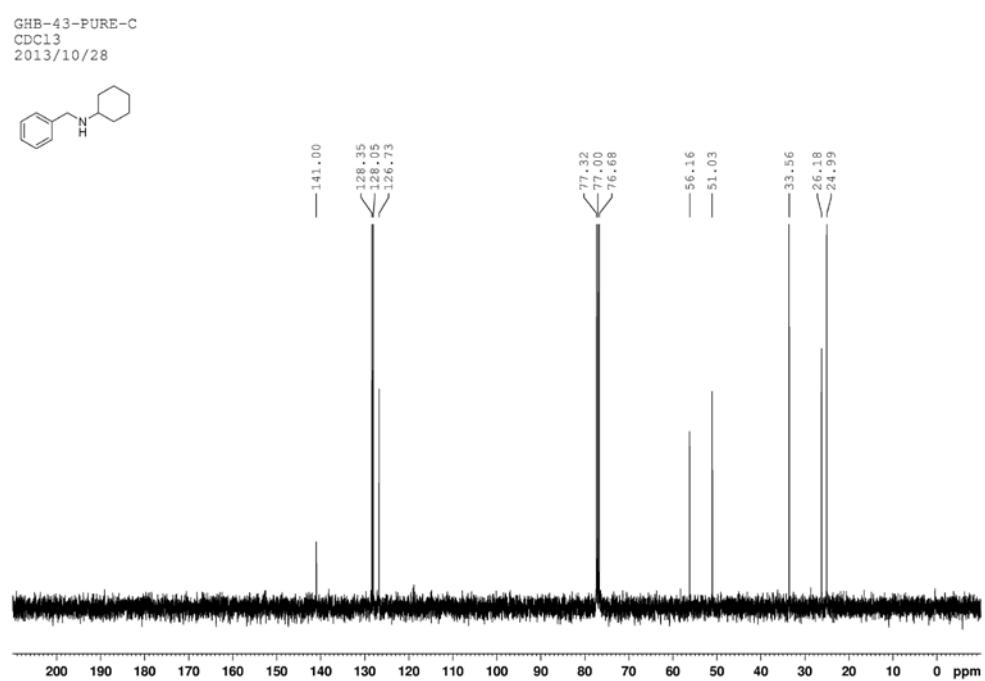
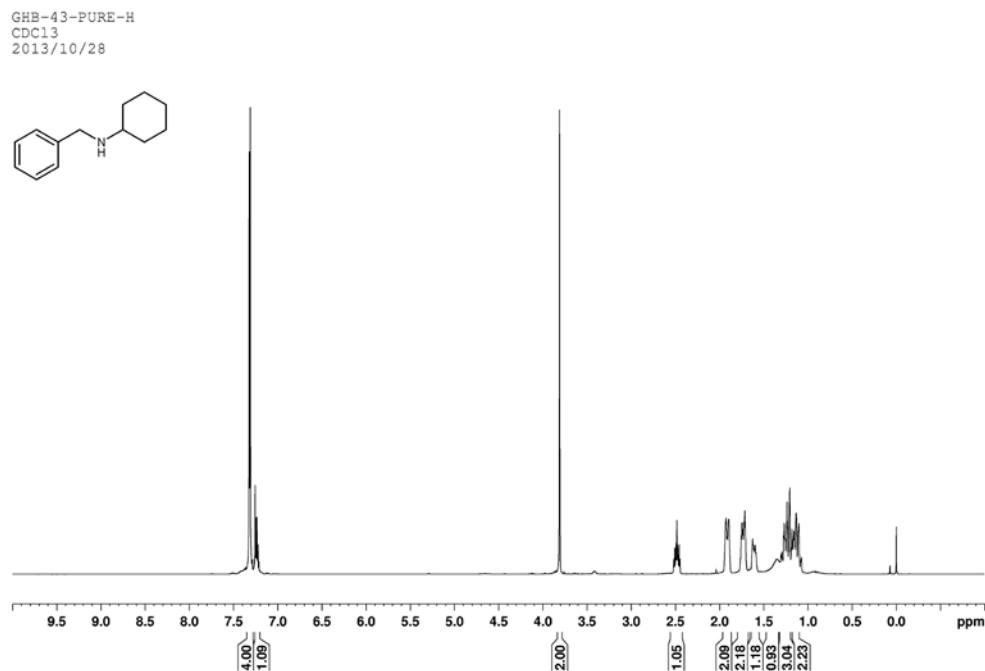
¹H and ¹³C NMR spectra of compound **2d**:

GHB-112-NMR-H
CDCl₃
2013/01/10



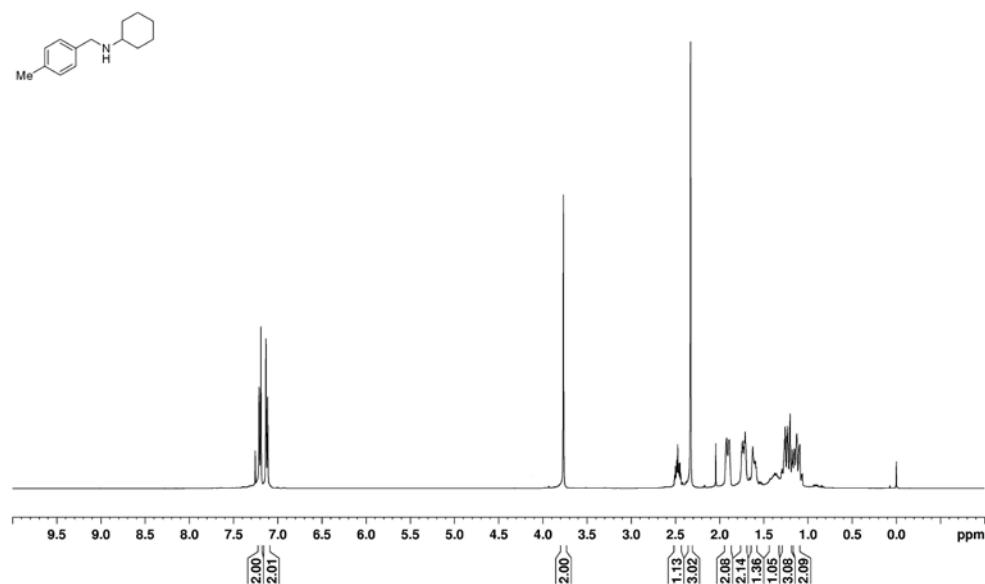
GHB-112-NMR-C
CDCl₃
2013/01/10



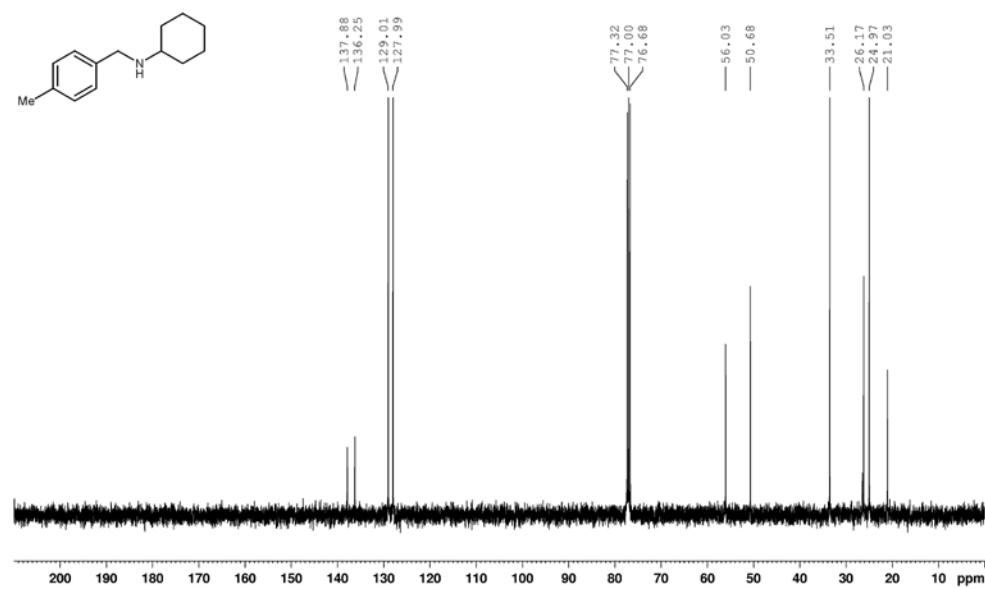
¹H and ¹³C NMR spectra of compound 2e:

¹H and ¹³C NMR spectra of compound **2f**:

GHB-98-pure-H
CDCl₃
2013/12/17

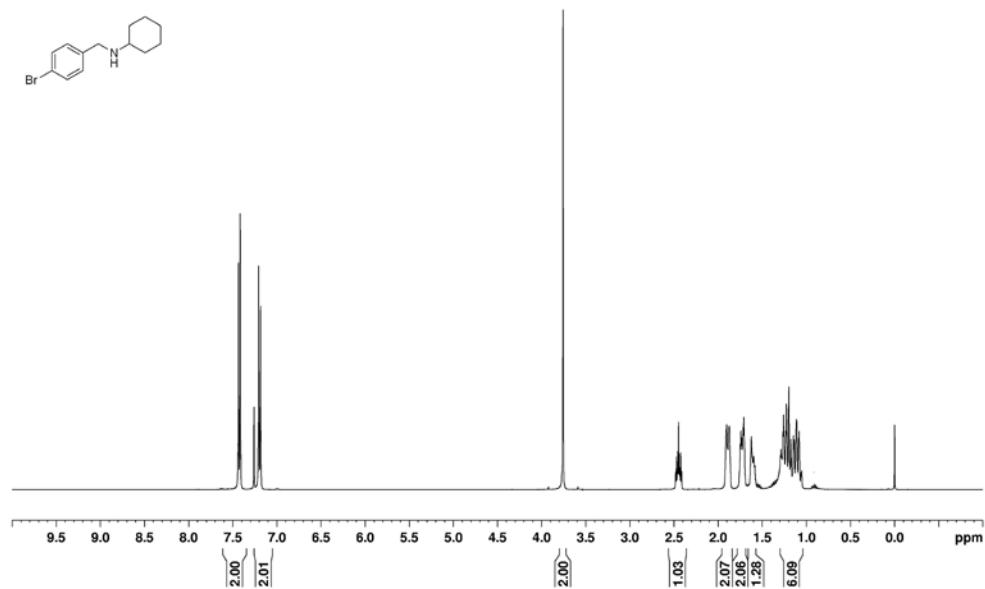


GHB-98-pure-C
CDCl₃
2013/12/17

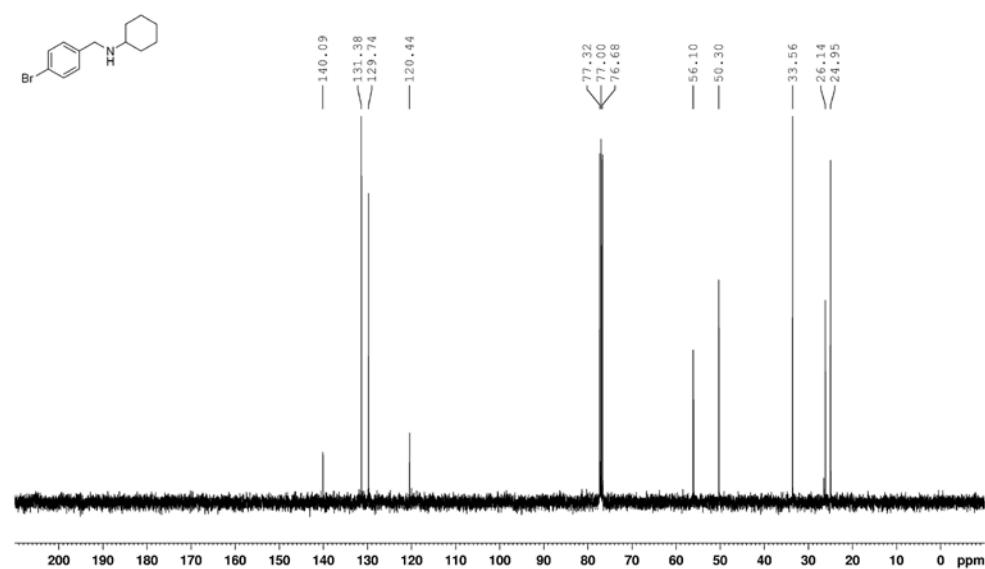


¹H and ¹³C NMR spectra of compound 2g:

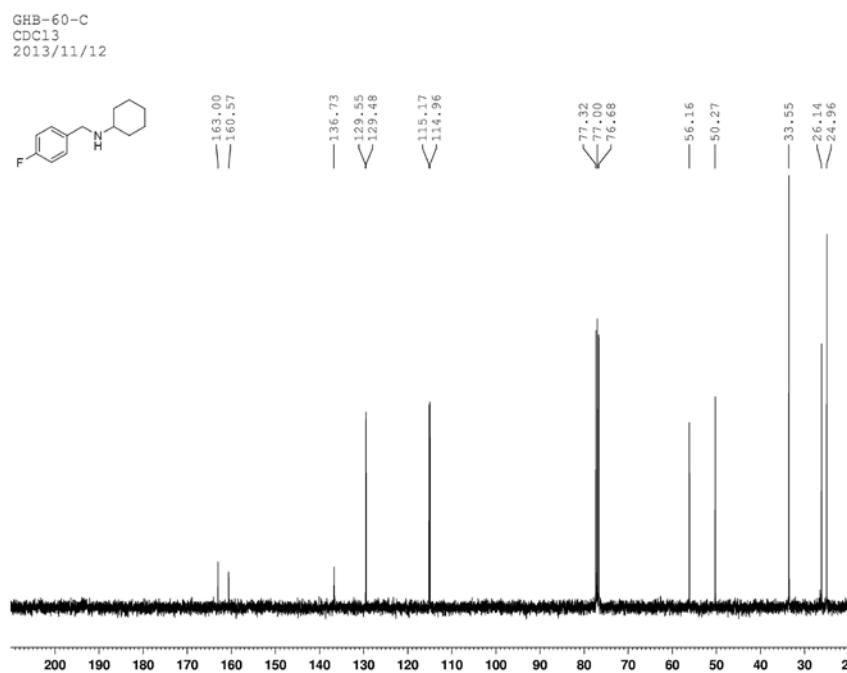
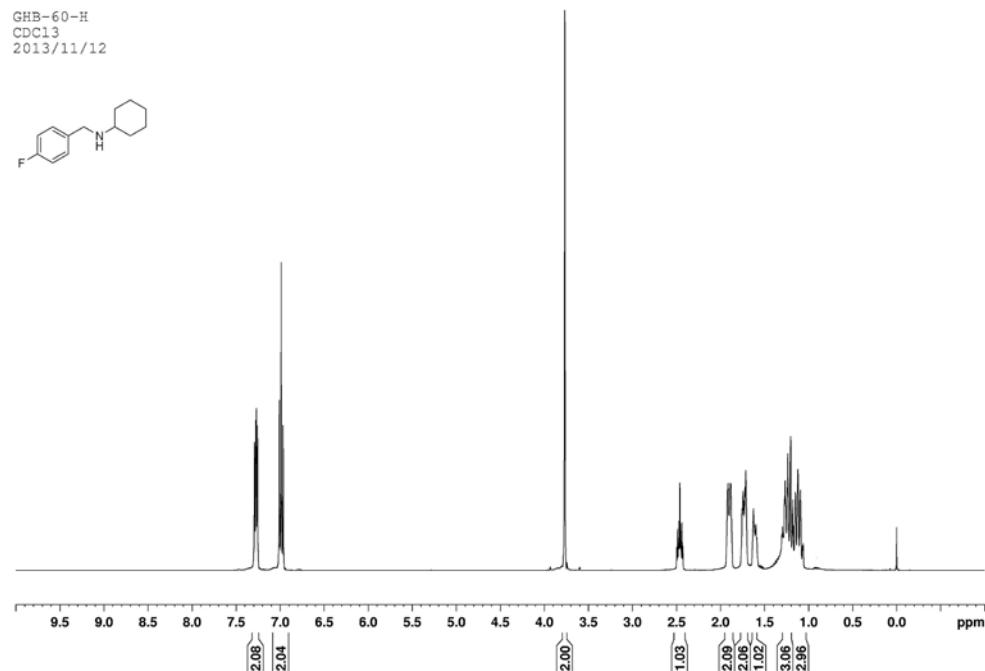
GHB-58-H-2
CDCl₃
2013/11/12



GHB-58-C-2
CDCl₃
2013/11/12

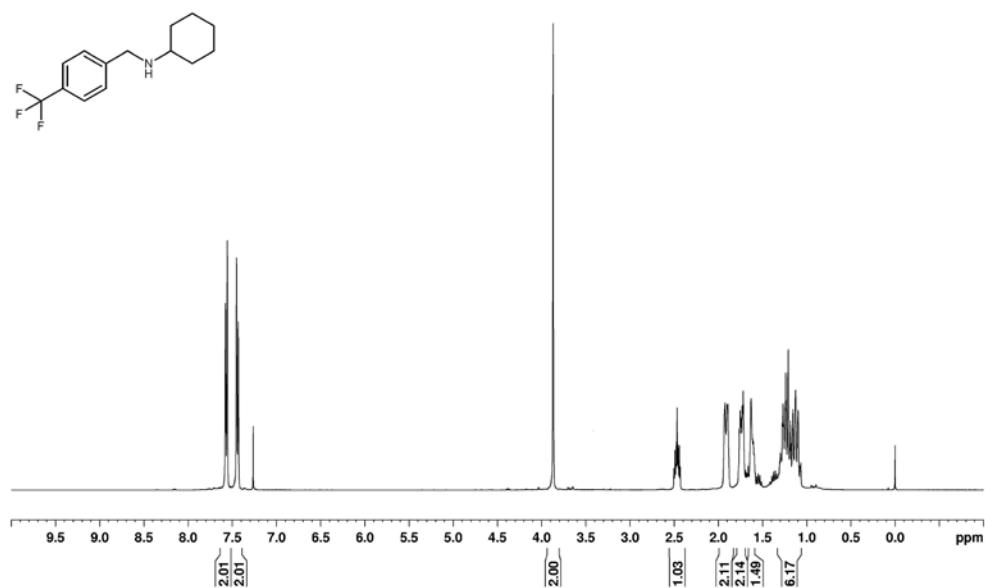


¹H and ¹³C NMR spectra of compound **2h**:

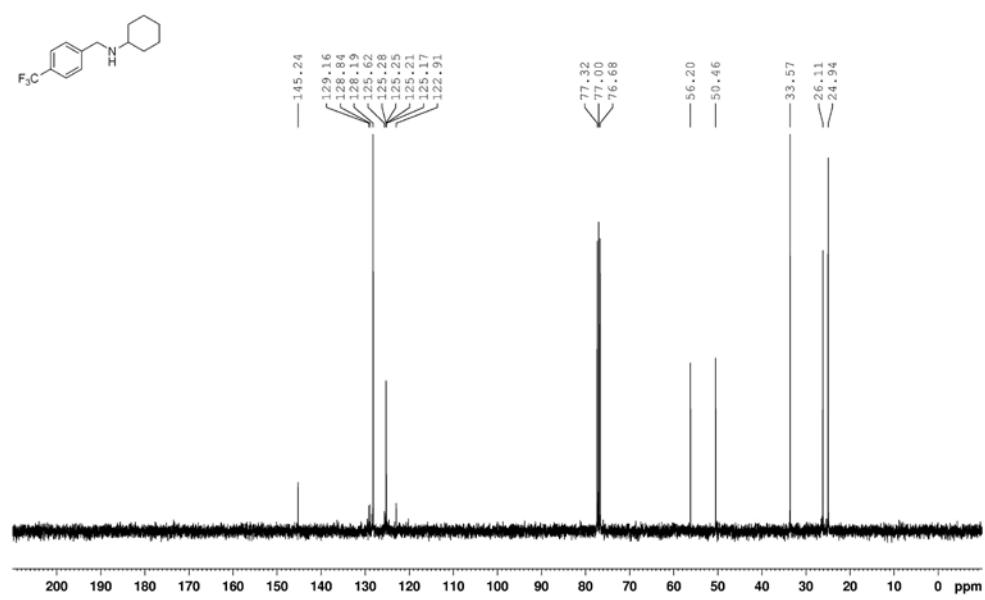


¹H and ¹³C NMR spectra of compound **2i**:

GHB-113-NMR-H
CDCl₃
2013/01/11

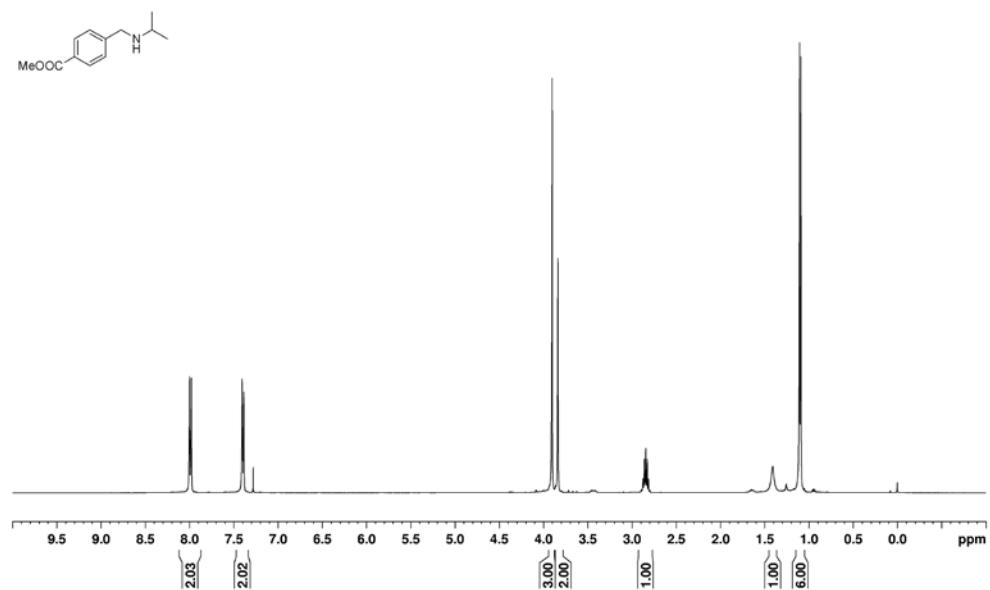


GHB-113-NMR-C
CDCl₃
2013/01/11

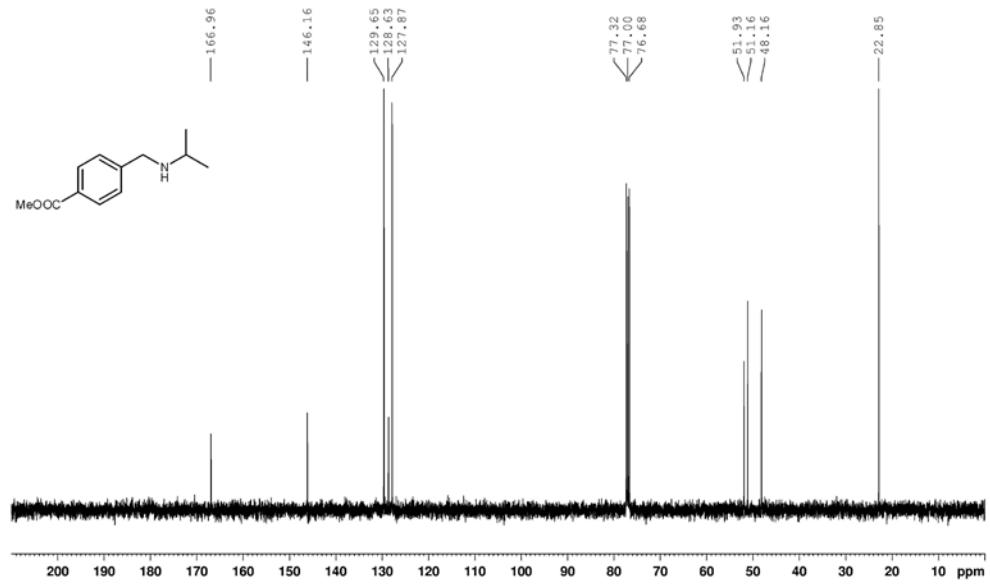


¹H and ¹³C NMR spectra of compound 2j:

GHB-107-H
CDCl₃
2013/12/25

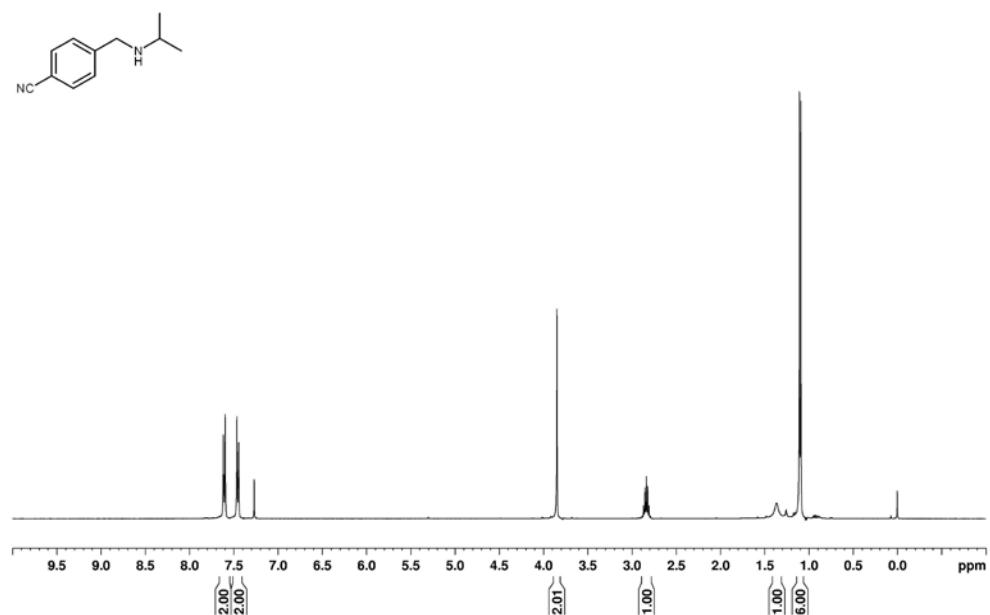


GHB-107-C
CDCl₃
2013/12/25

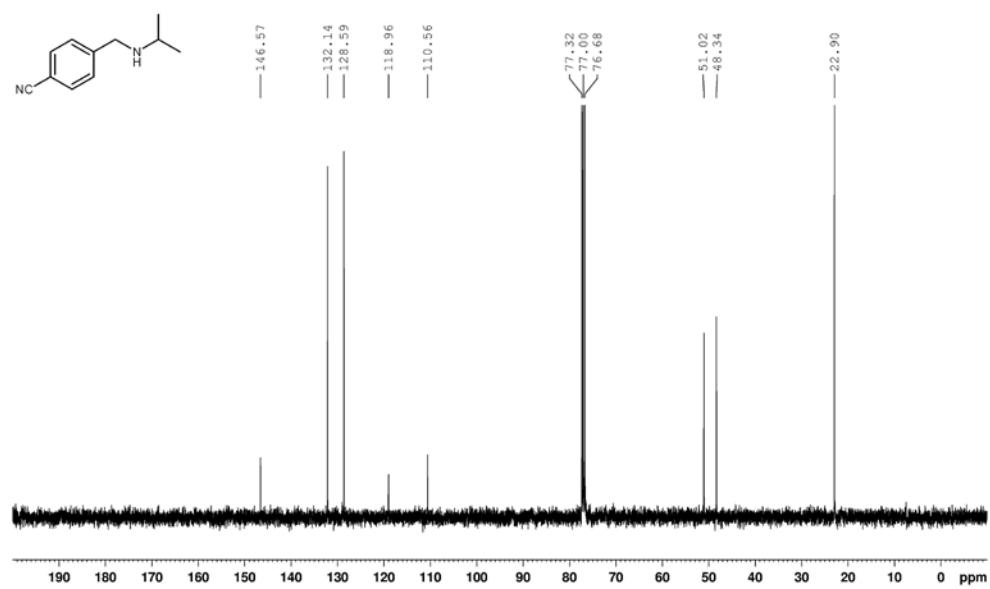


¹H and ¹³C NMR spectra of compound **2k**:

GHB-137-(29, 30)-H
2013/03/06

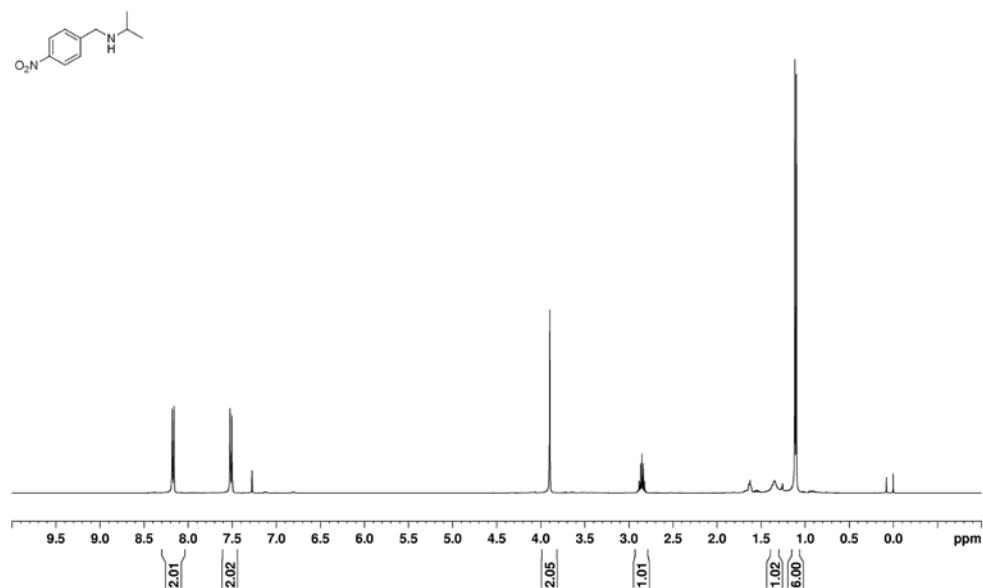


GHB-137-C
2013/03/07

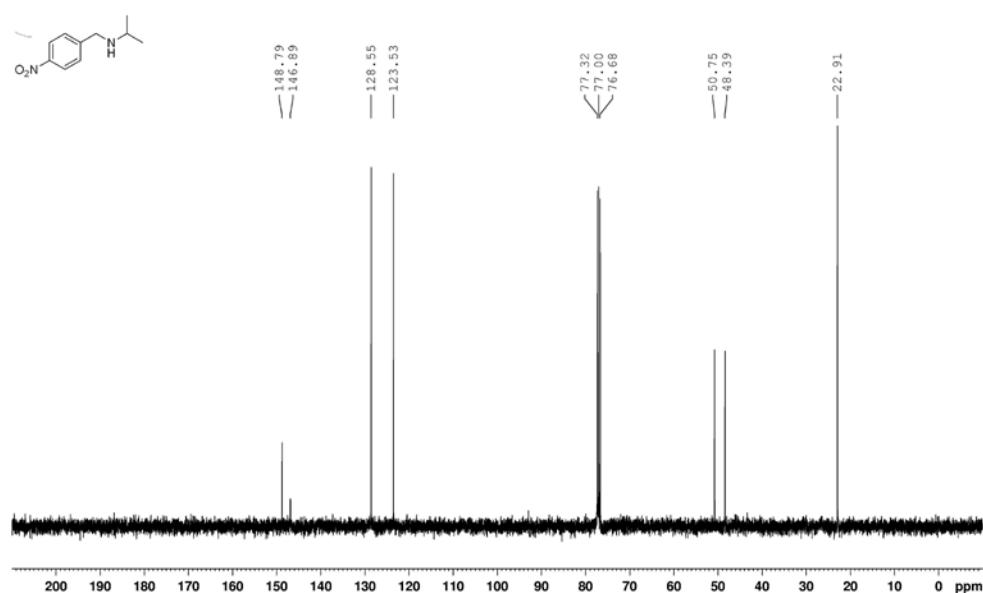


¹H and ¹³C NMR spectra of compound 2l:

GHB-82-PURE-H
CDCl₃
2013/12/04

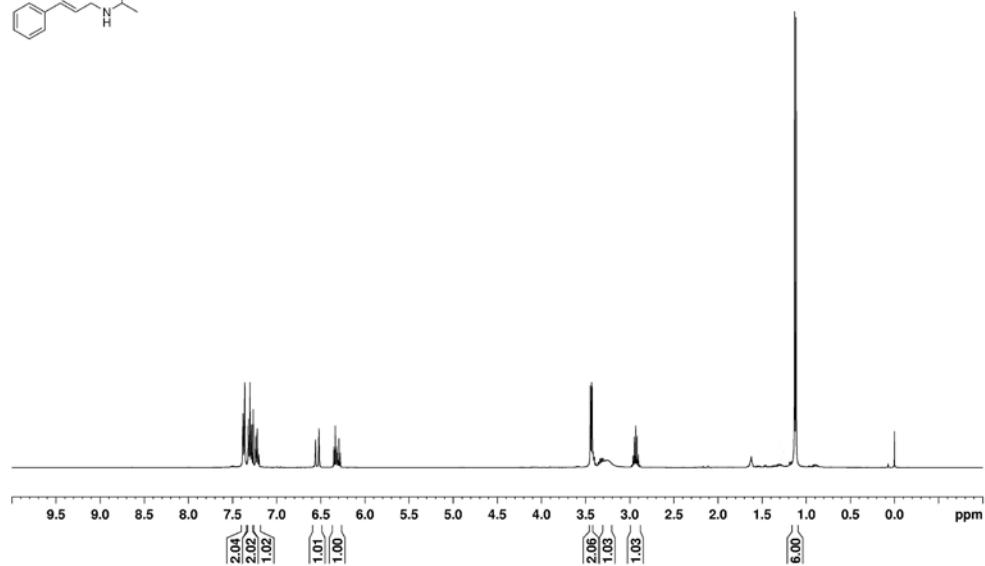
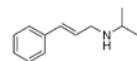


GHB-82-PURE-C
CDCl₃
2013/12/04

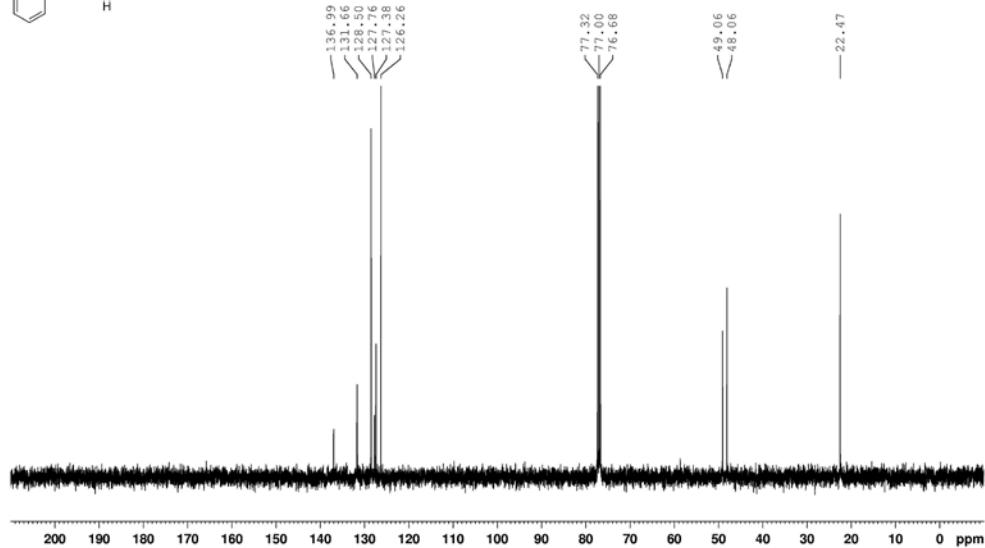
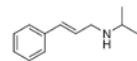


¹H and ¹³C NMR spectra of compound **2m**:

GHB-104-H
CDC13
2013/12/25

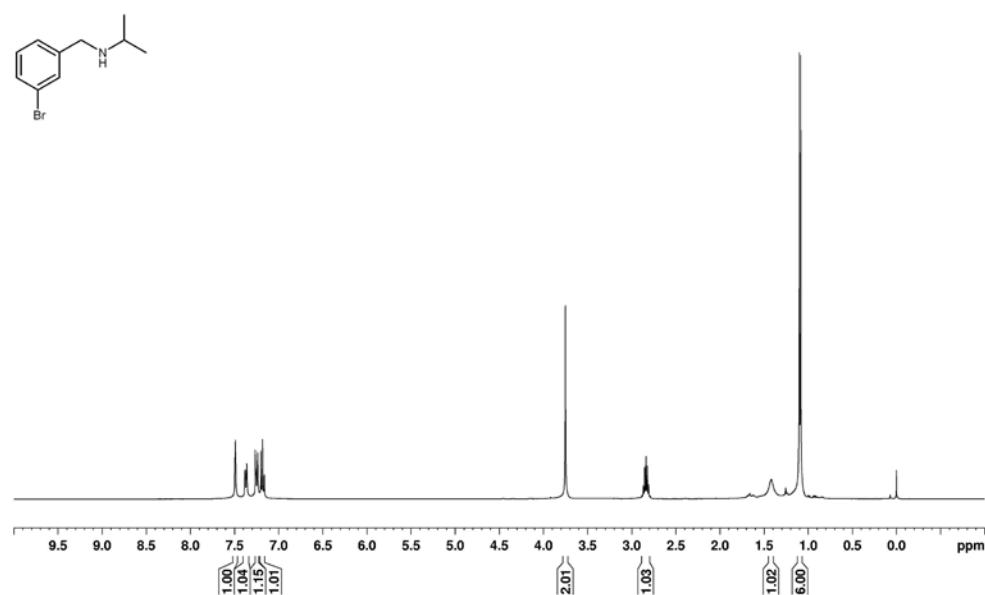


GHB-104-C
CDC13
2013/12/25

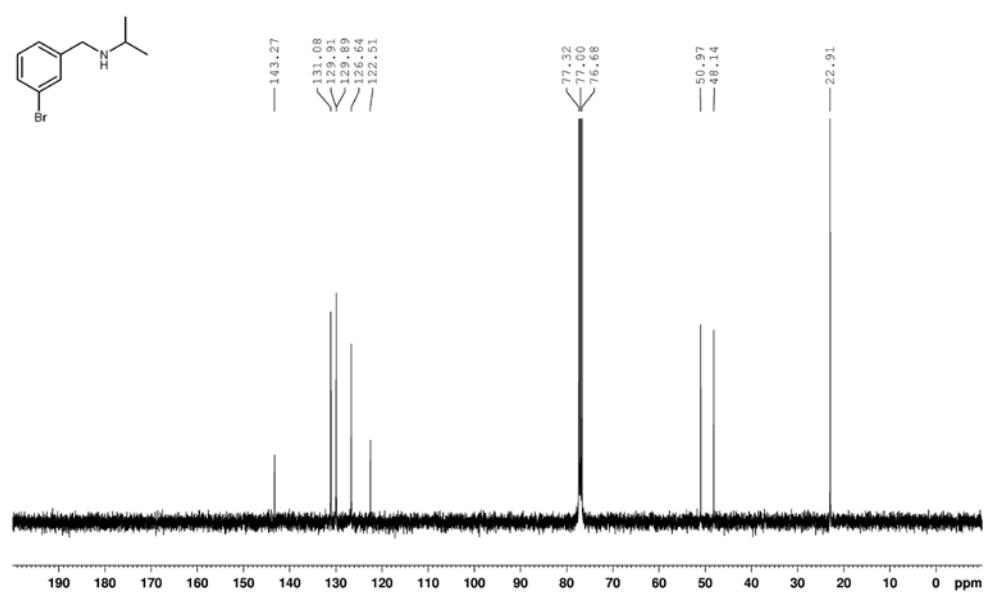


¹H and ¹³C NMR spectra of compound **2n**:

GHC-5-H
CDCl₃
20134/03/18

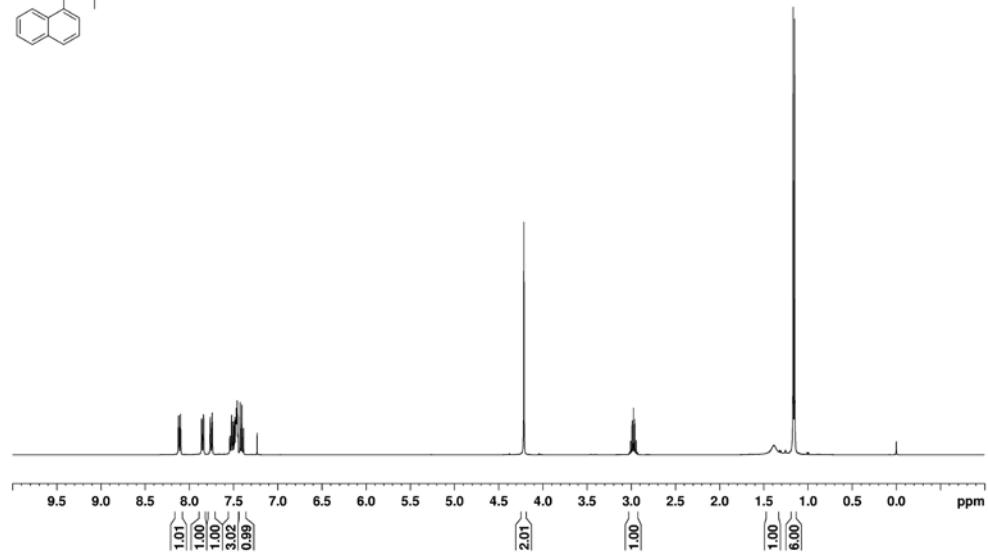
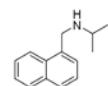


GHC-5-C
CDCl₃
20134/03/18

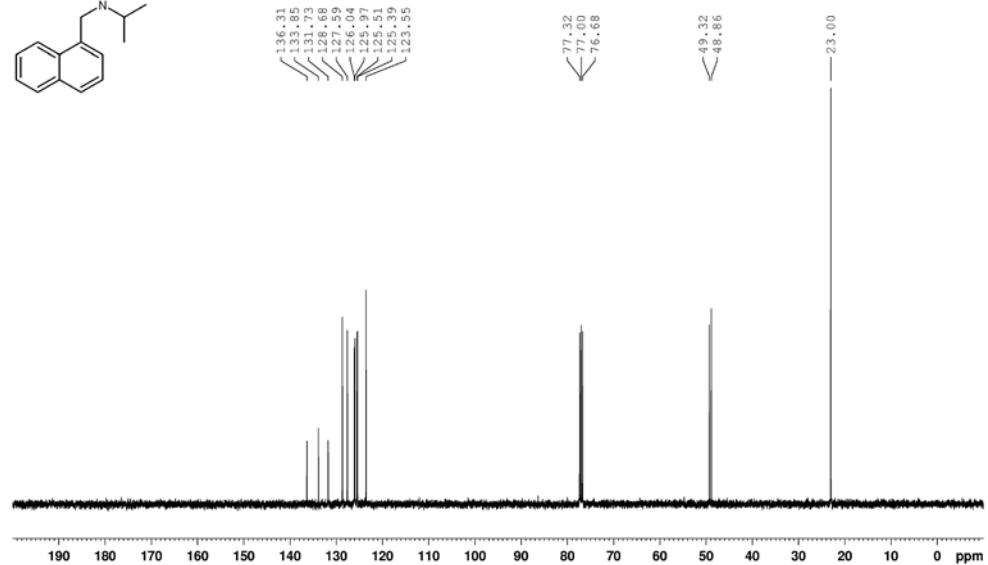
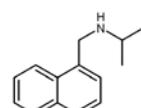


¹H and ¹³C NMR spectra of compound **2o**:

GHC-12-nmr-H
CDCl₃
20134/03/19

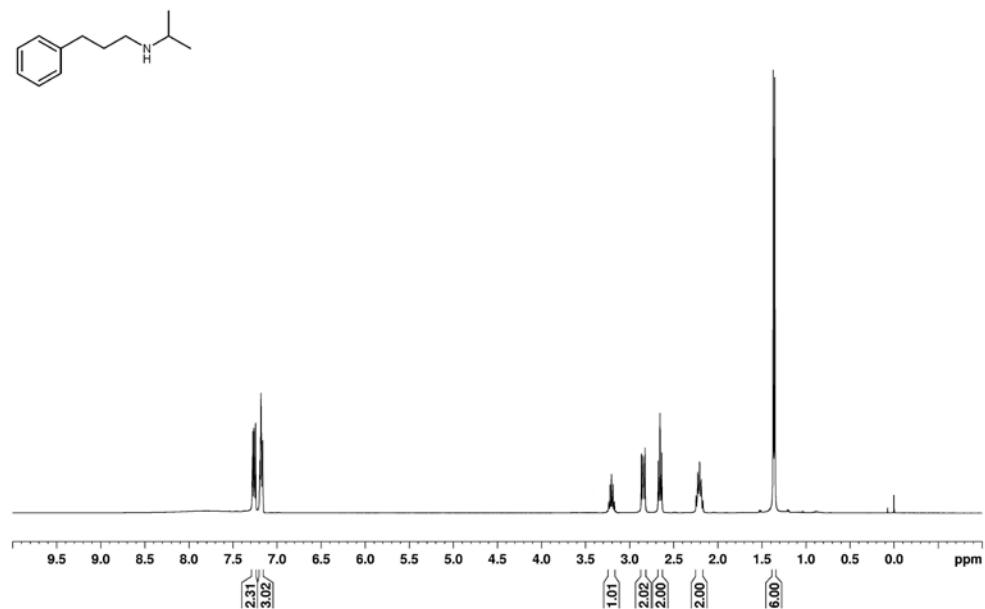


GHC-12-C
CDCl₃
20134/03/18

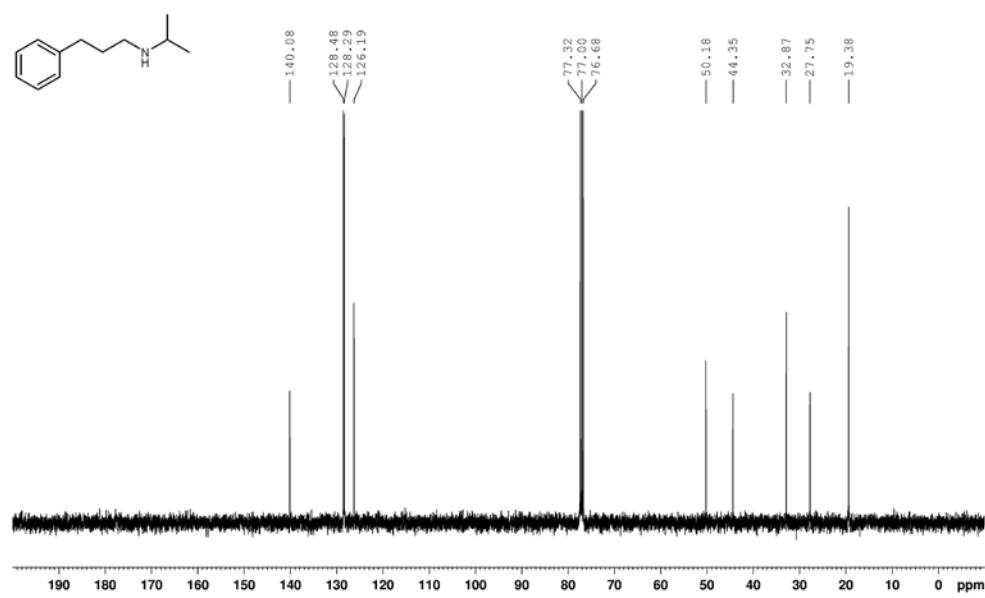


¹H and ¹³C NMR spectra of compound 2p:

GHB-116-NMR-H
2013/02/22

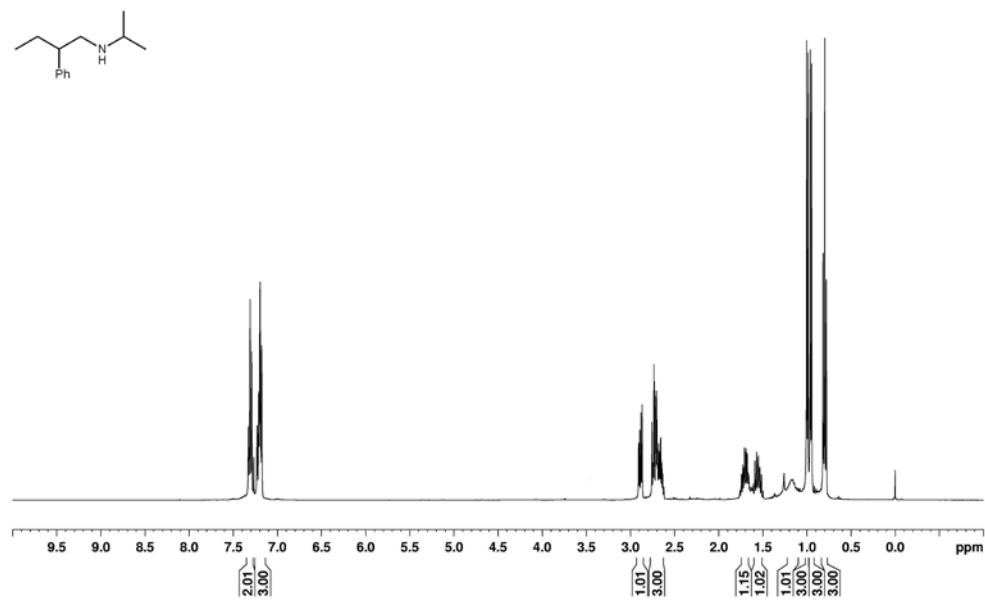


GHB-116-NMR-C
2013/02/22

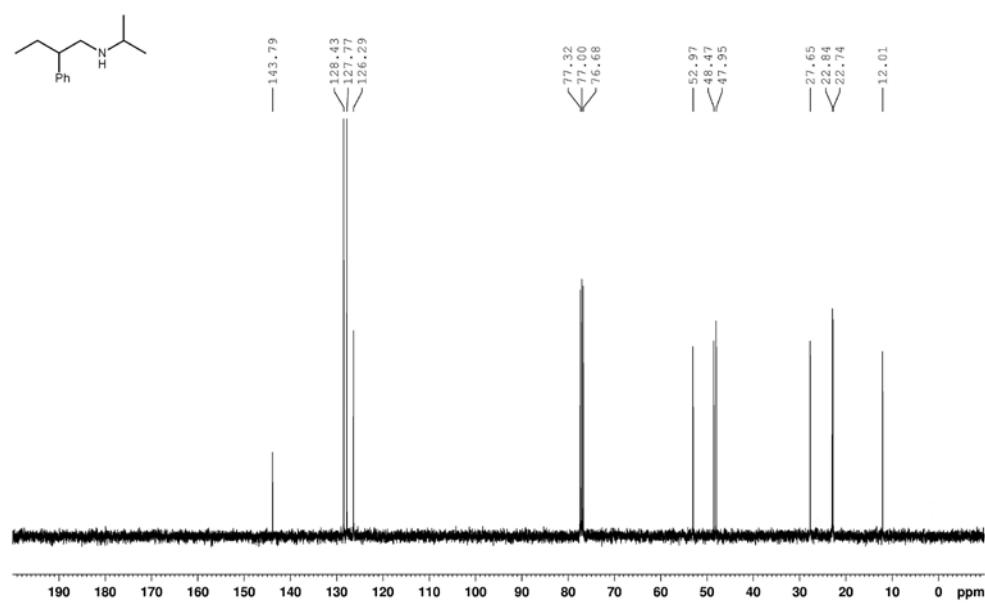


¹H and ¹³C NMR spectra of compound 2q:

GHC-19B-H
CDCl₃
20134/04/07

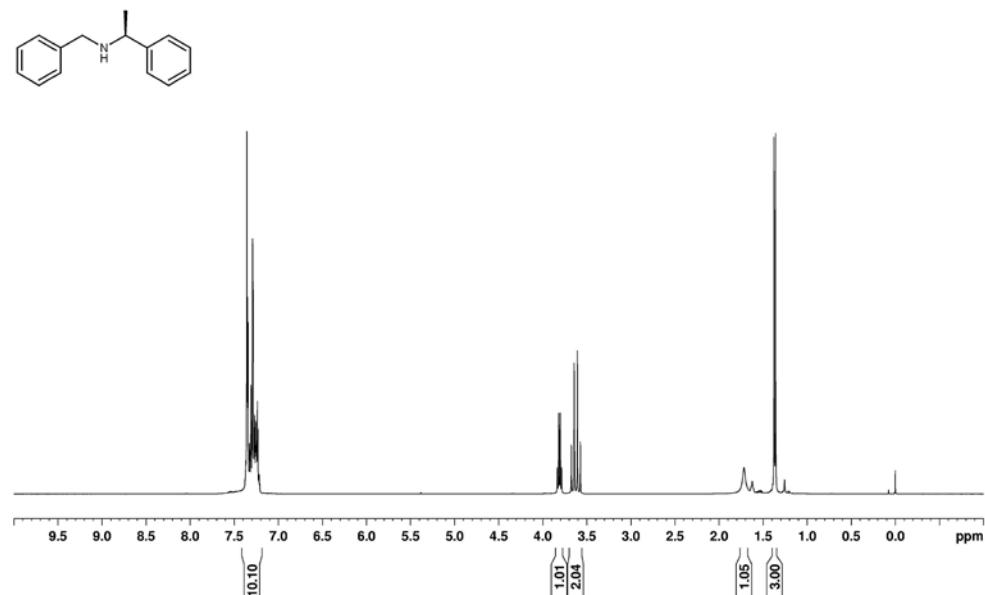


GHC-19B-C
CDCl₃
20134/04/08

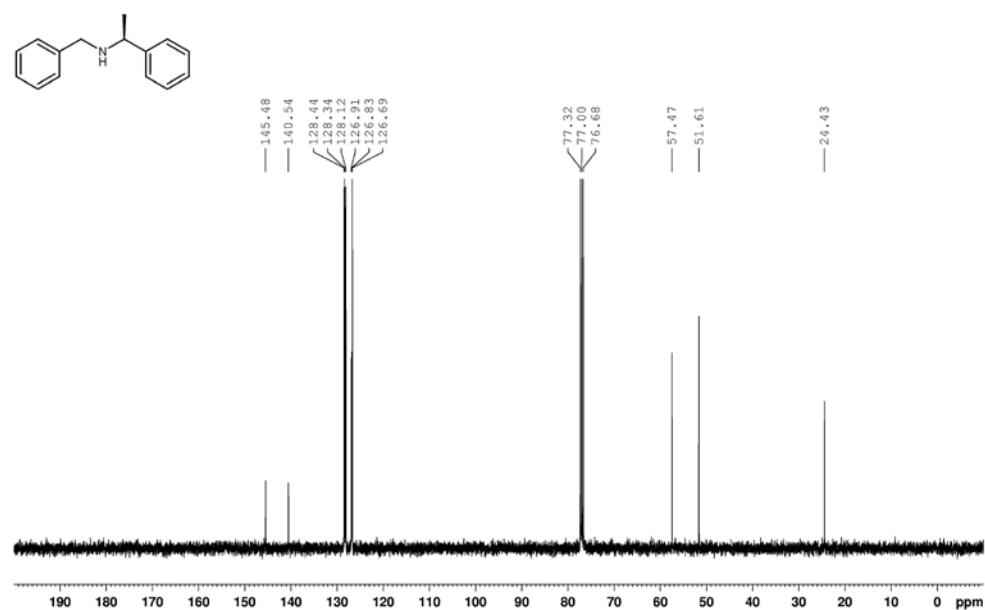


¹H and ¹³C NMR spectra of compound **2r**:

GHB-106--pure-NMR-H
2013/02/20

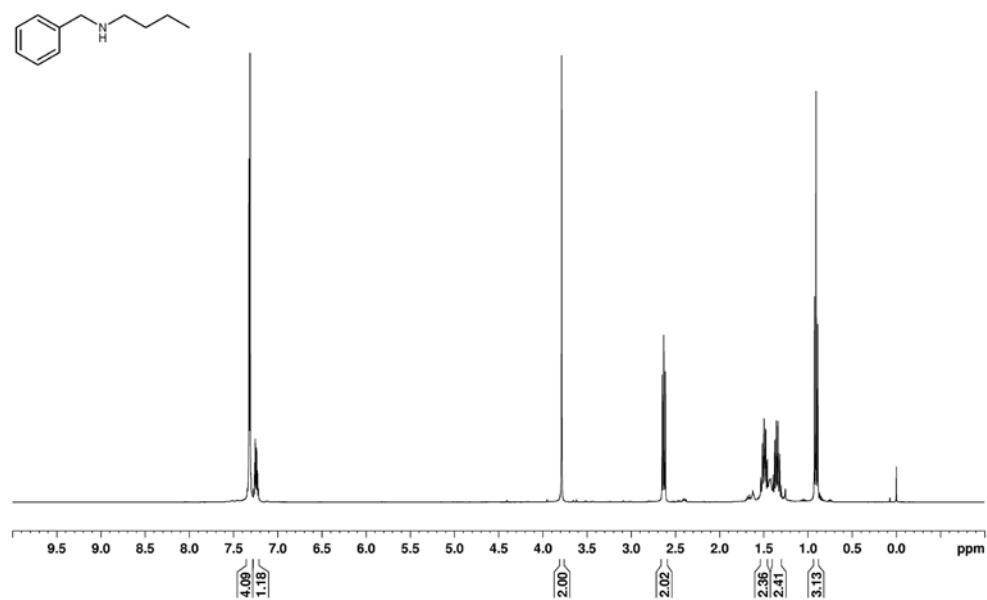


GHB-106--pure-NMR-C
CDCl₃
2013/02/20

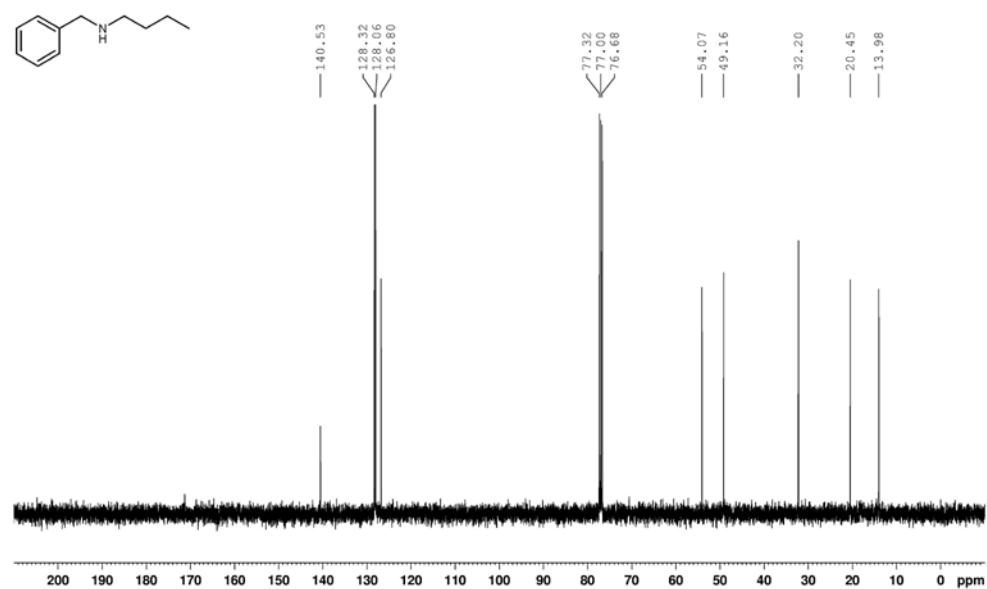


¹H and ¹³C NMR spectra of compound 2s:

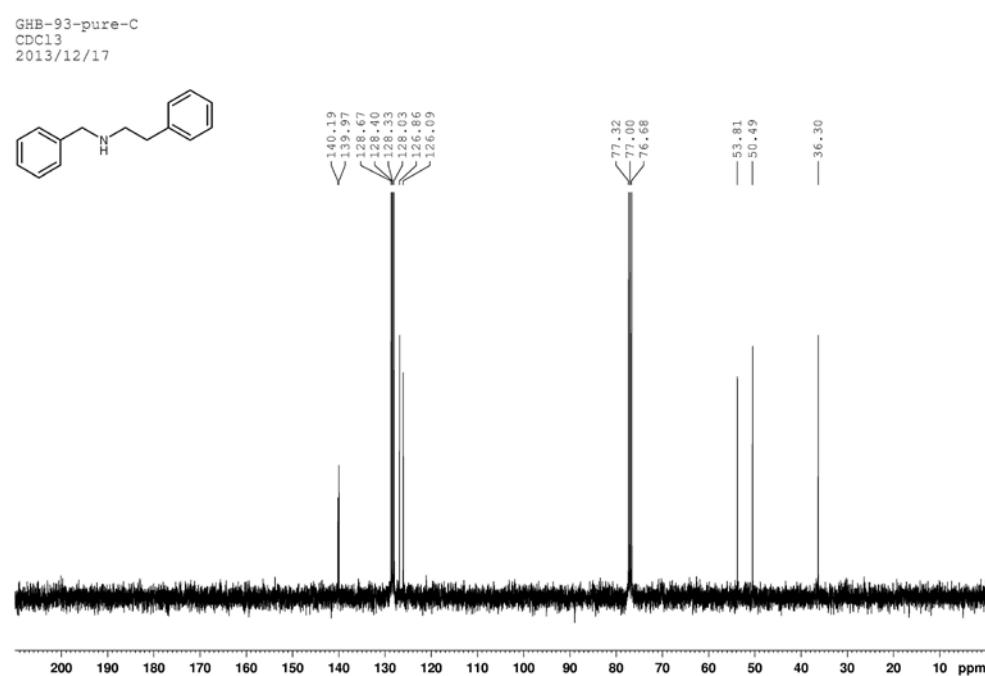
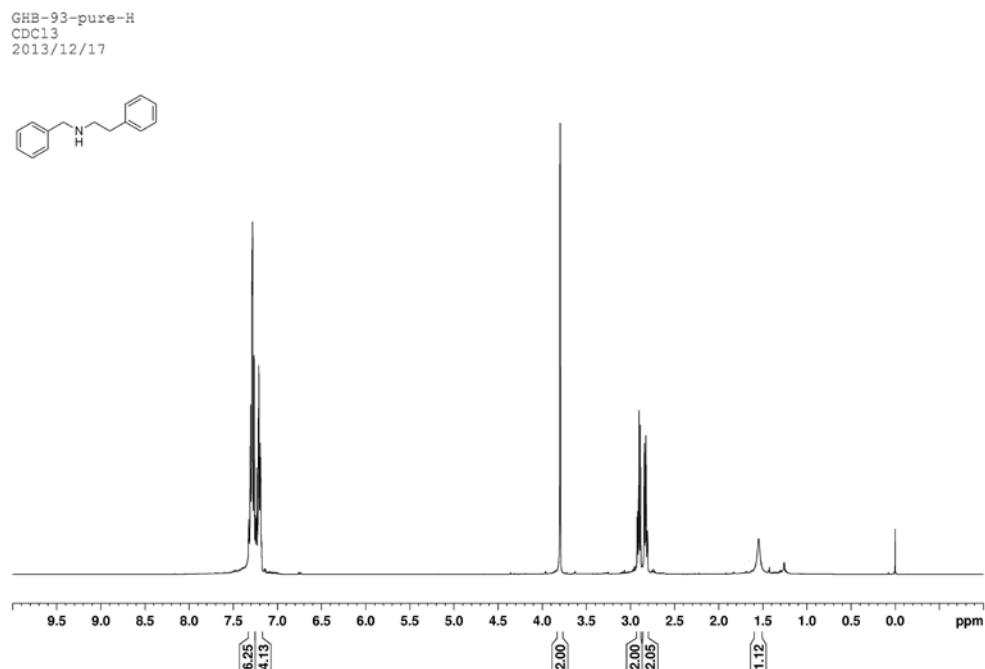
GHB-99-pure-H
CDCl₃
2013/12/17



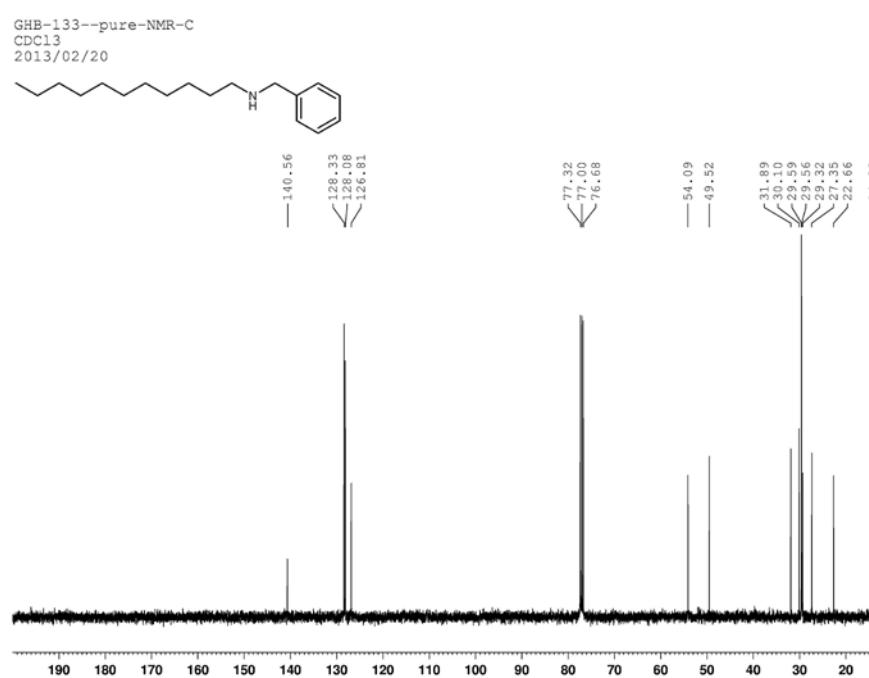
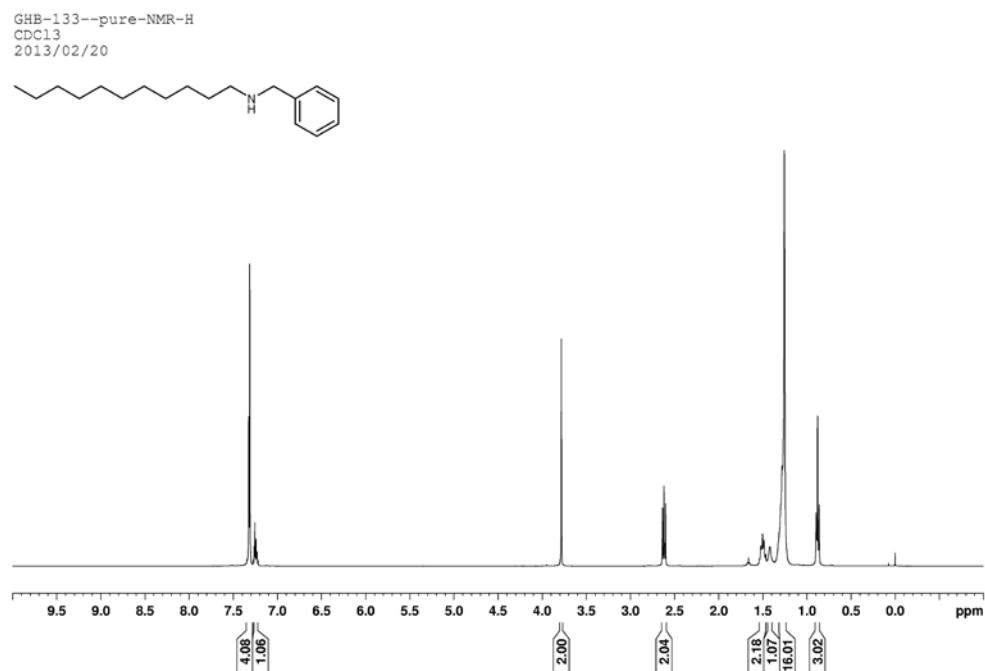
GHB-99-pure-C
CDCl₃
2013/12/17



¹H and ¹³C NMR spectra of compound **2t**:

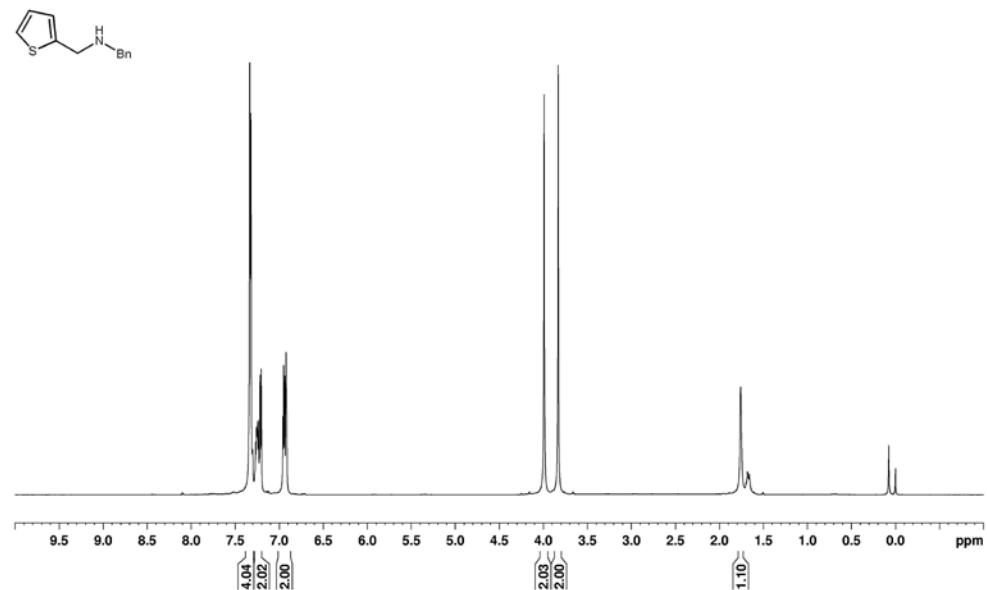


¹H and ¹³C NMR spectra of compound **2u**:

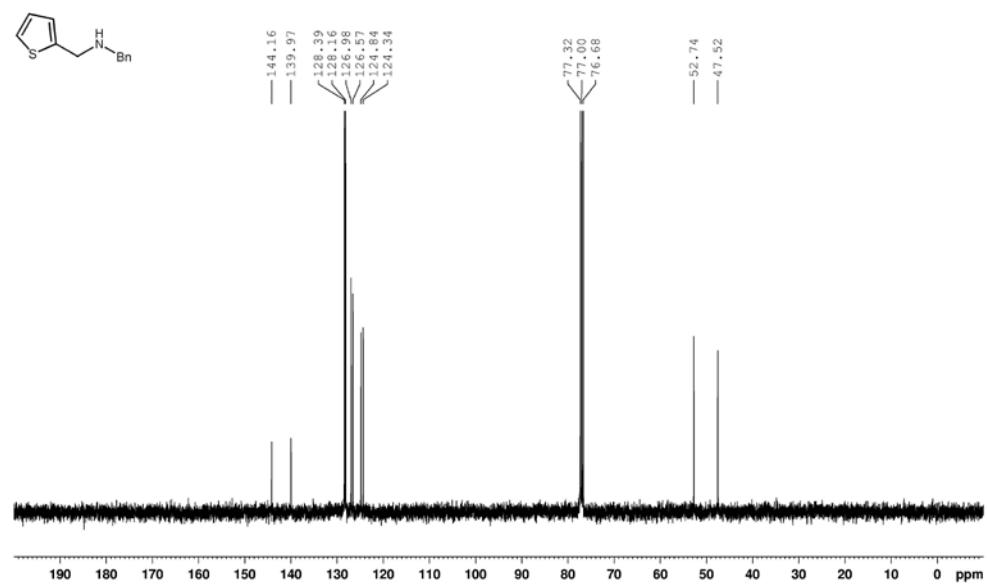


¹H and ¹³C NMR spectra of compound **2v**:

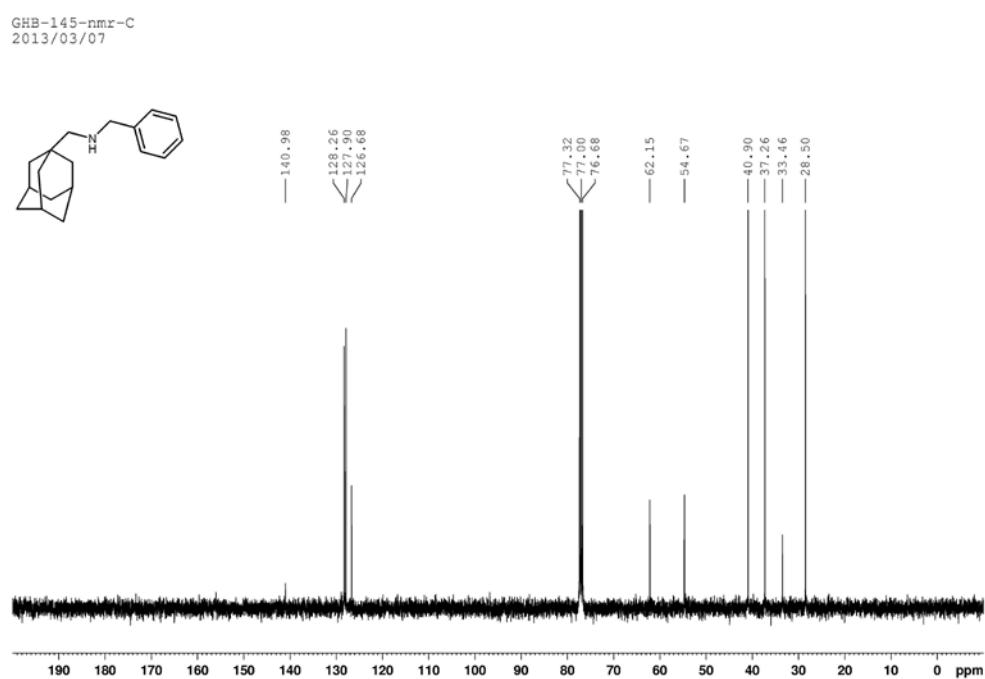
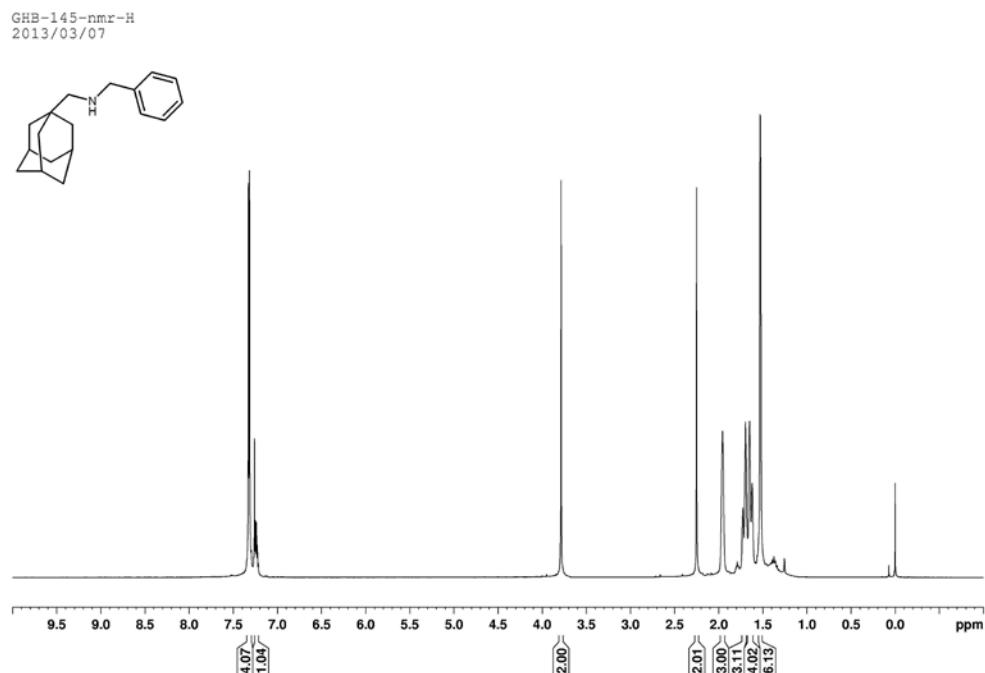
GHB-144-H
2013/03/15



GHB-144-C
2013/03/15

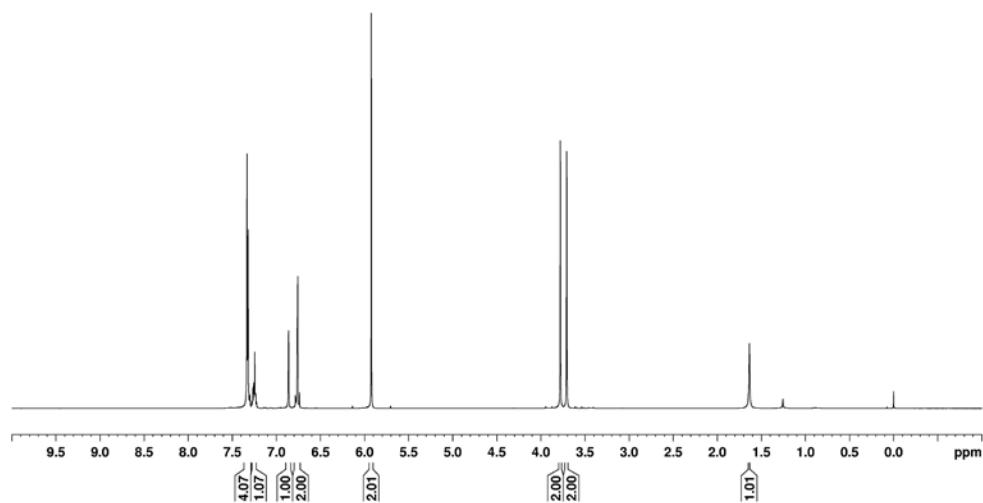
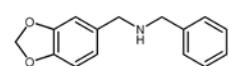


¹H and ¹³C NMR spectra of compound 2w:

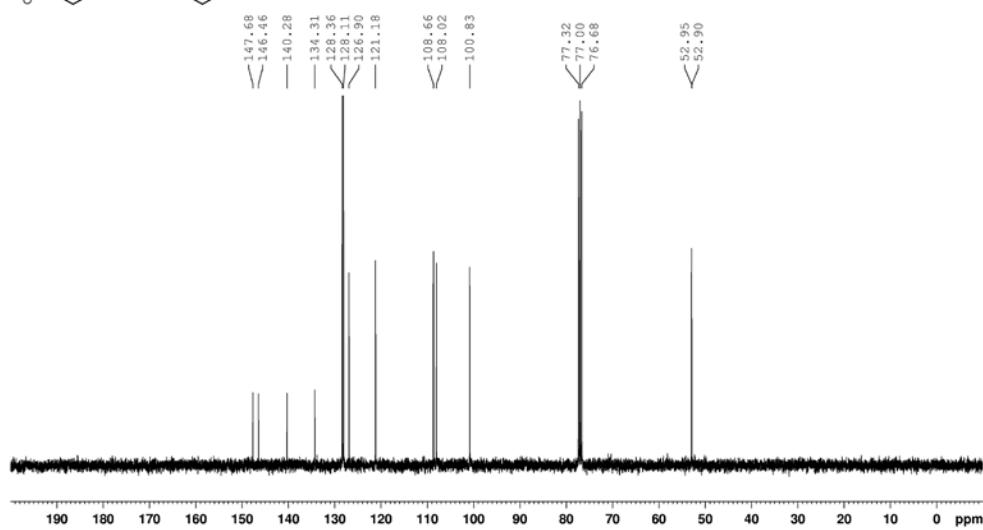
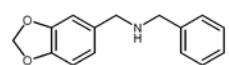


¹H and ¹³C NMR spectra of compound **2x**:

GHC-3-nmr-H
CDCl₃
20134/03/19

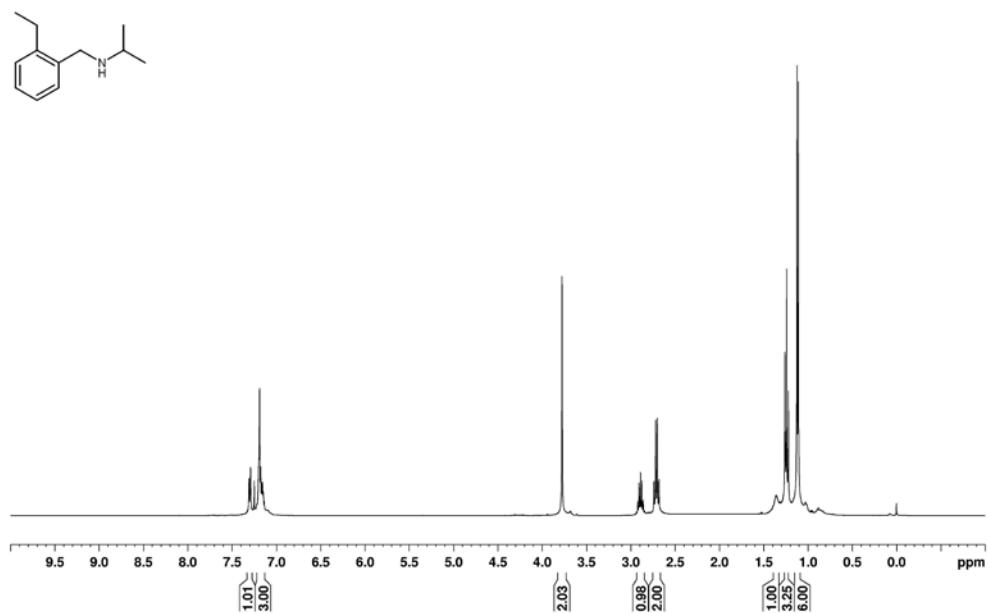


GHC-3-nmr-C
CDCl₃
20134/03/19

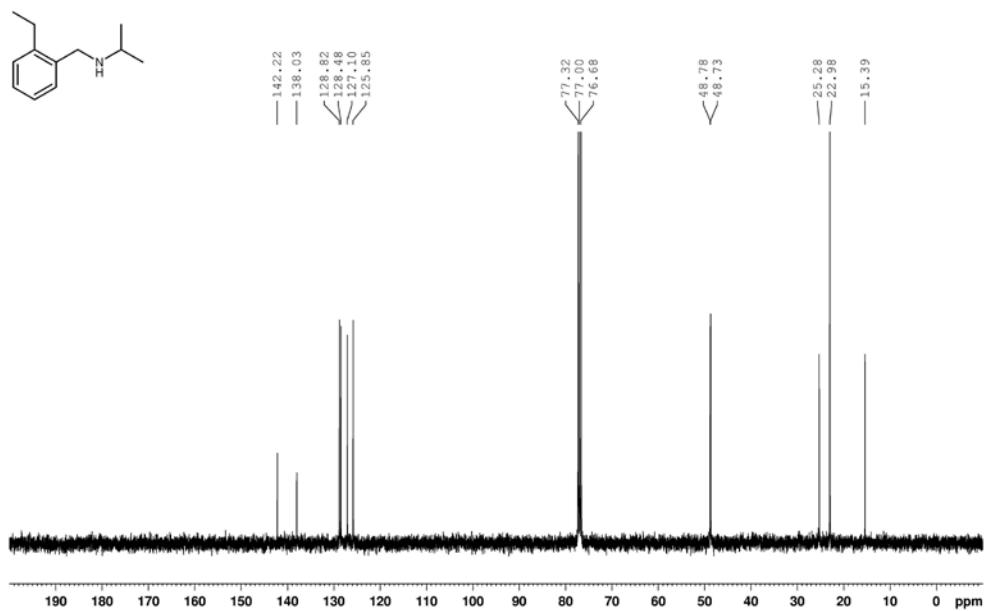


¹H and ¹³C NMR spectra of compound 6:

GHB-131-NMR-H
2013/02/21

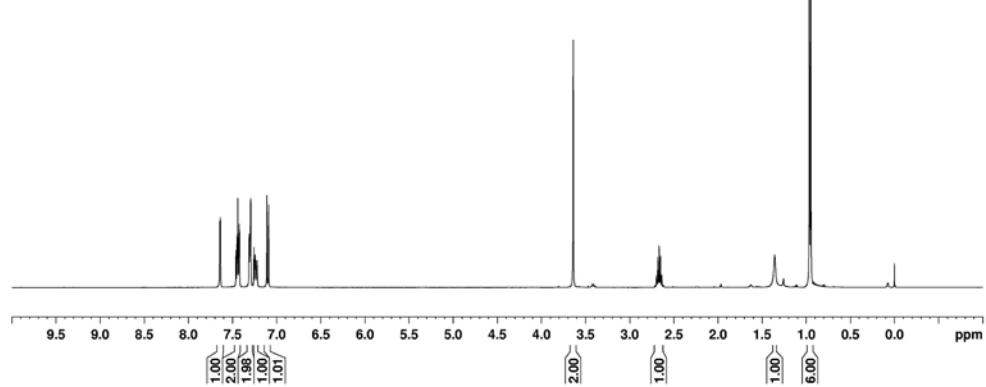
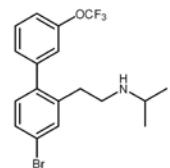


GHB-131-NMR-C
2013/02/21

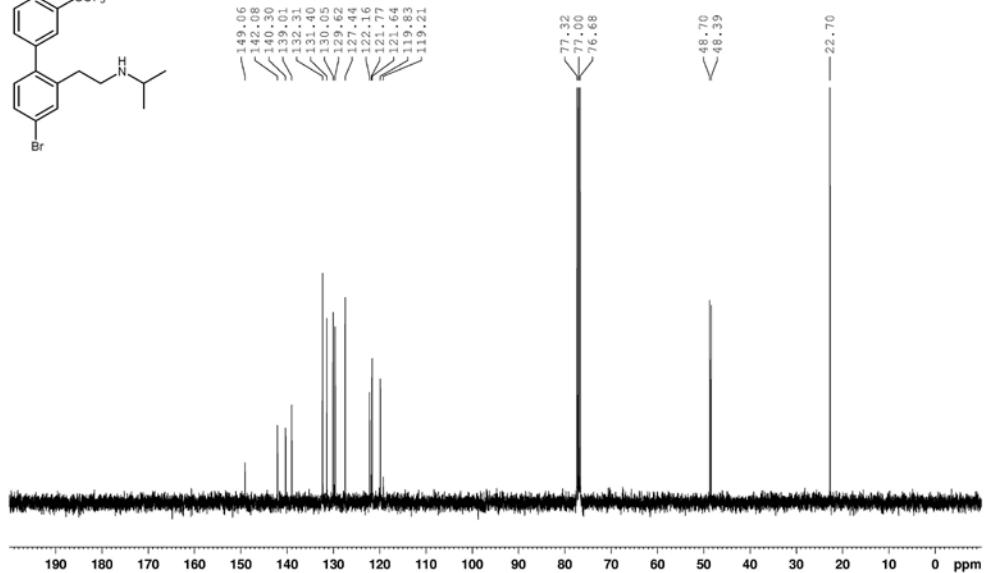
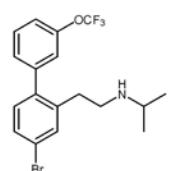


¹H and ¹³C NMR spectra of compound 8:

GHC-22-H
CDCl₃
20134/04/02

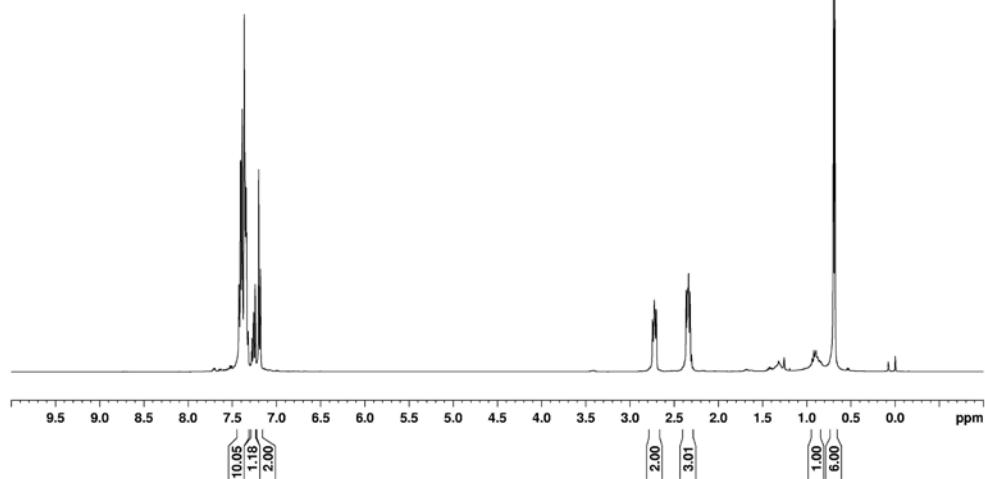
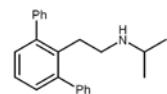


GHC-22-C
CDCl₃
20134/04/02

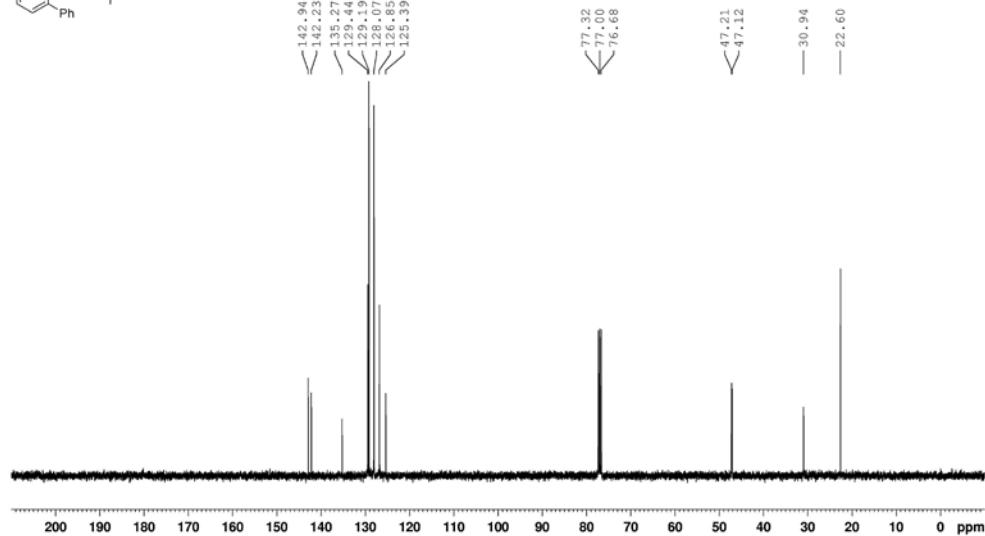
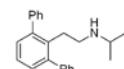


¹H and ¹³C NMR spectra of compound **10**:

GHC-23-H
CDCl₃
20134/03/25

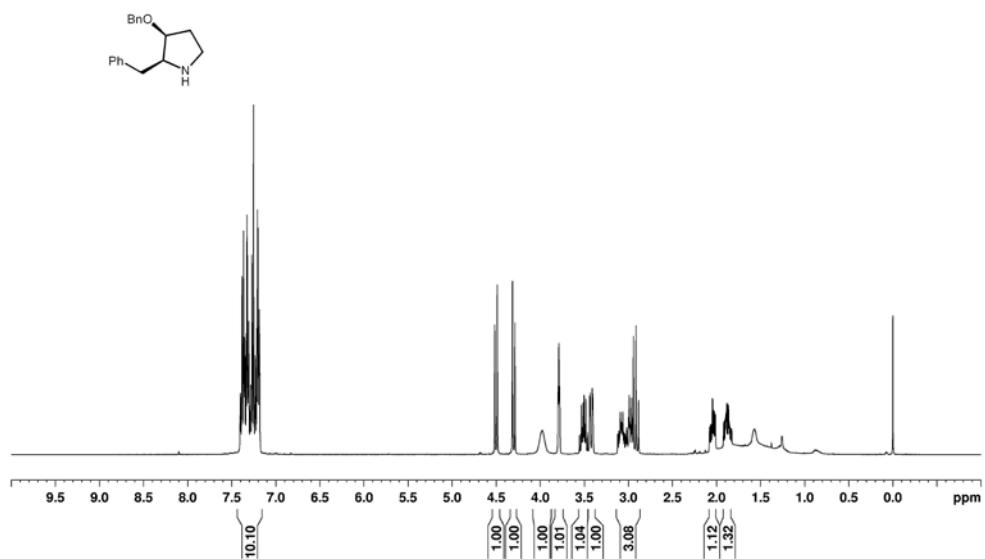


GHC-23-C
CDCl₃
20134/03/25

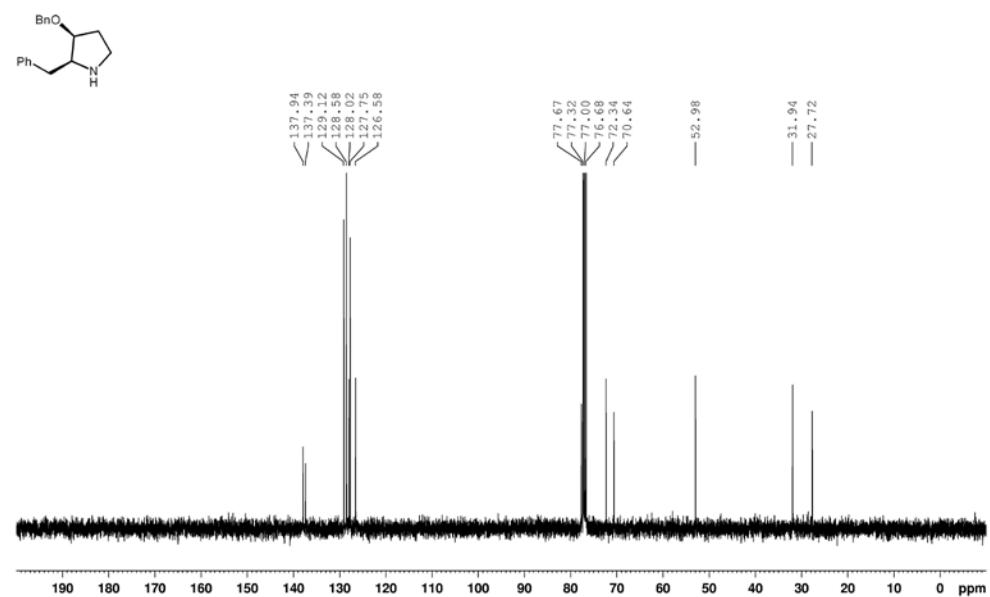


¹H and ¹³C NMR spectra of compound **12**:

GH-D-43-TM-PROTON256
CDCl₃
2014/11/27



GH-D-43-(18-19)-C13CPD
CDCl₃
2014/11/21



¹H and ¹³C NMR spectra of compound **14**:

