

Supporting Information

Atom economical multi-substituted pyrrole synthesis from aziridine

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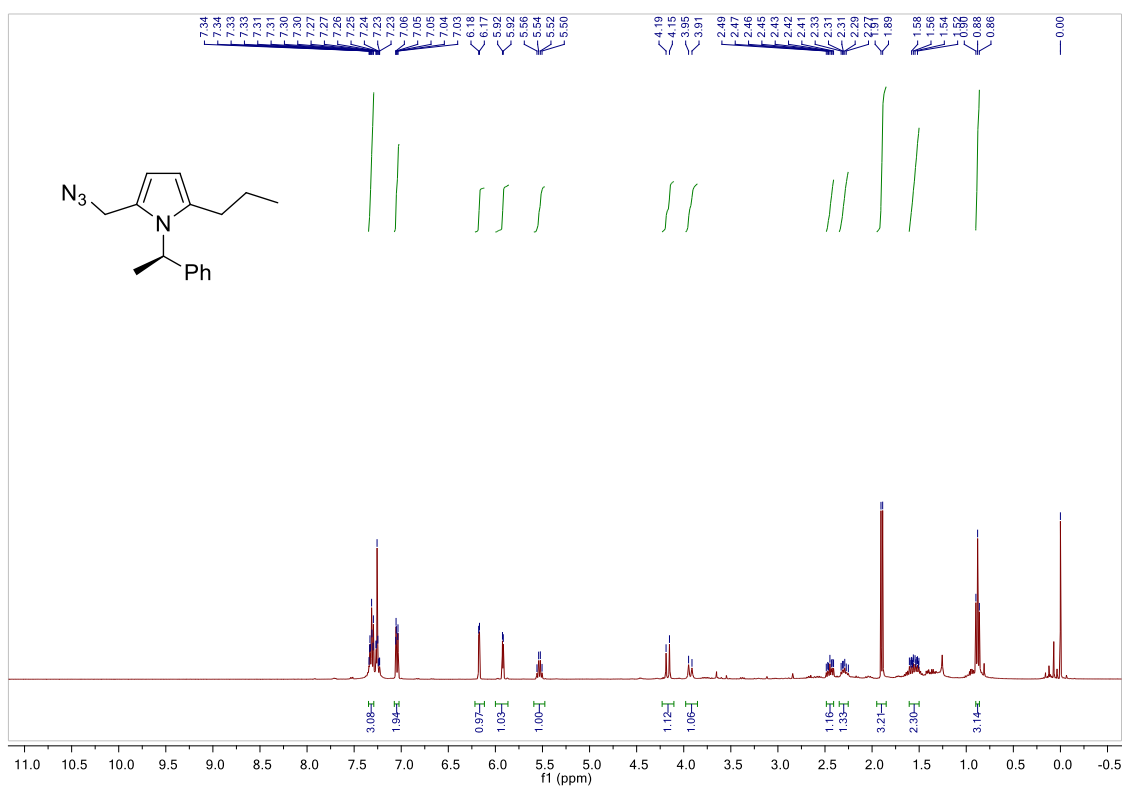
Department of Chemistry, Hankuk University of Foreign Studies, Yongin 17035, Korea

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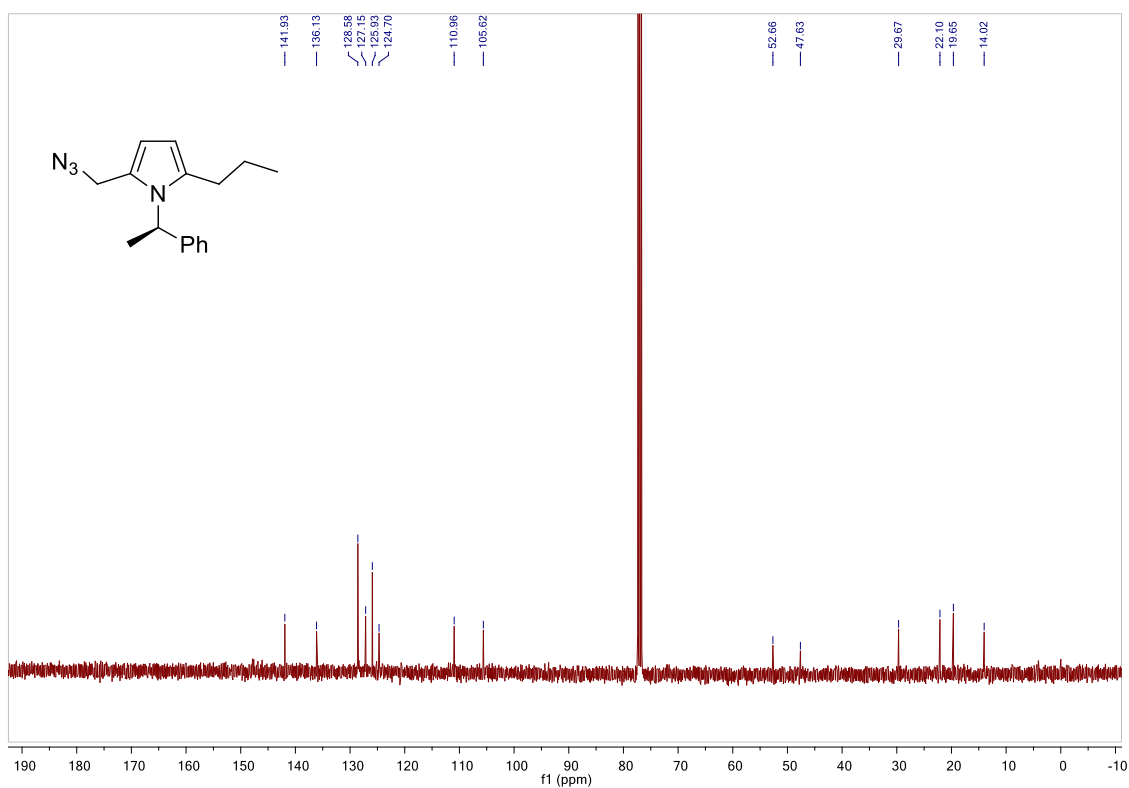
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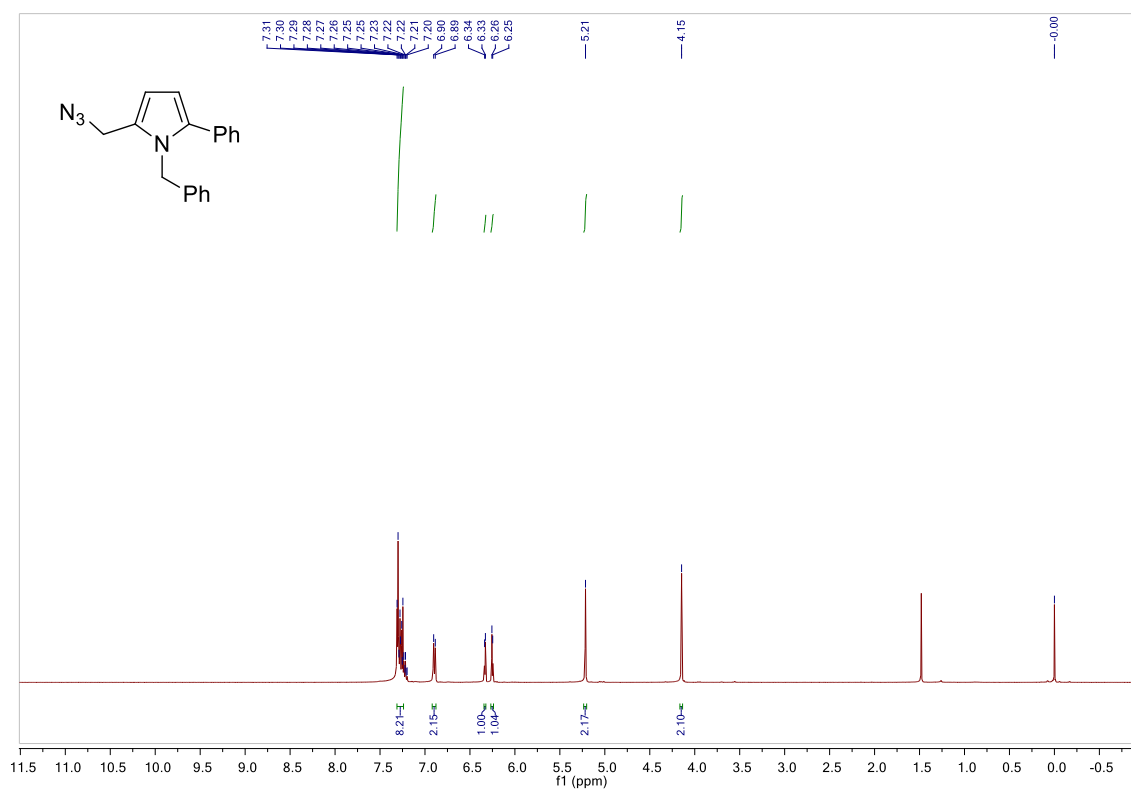
¹H NMR spectrum of (R)-2-(azidomethyl)-1-(1-phenylethyl)-5-propyl-1H-pyrrole (2a):



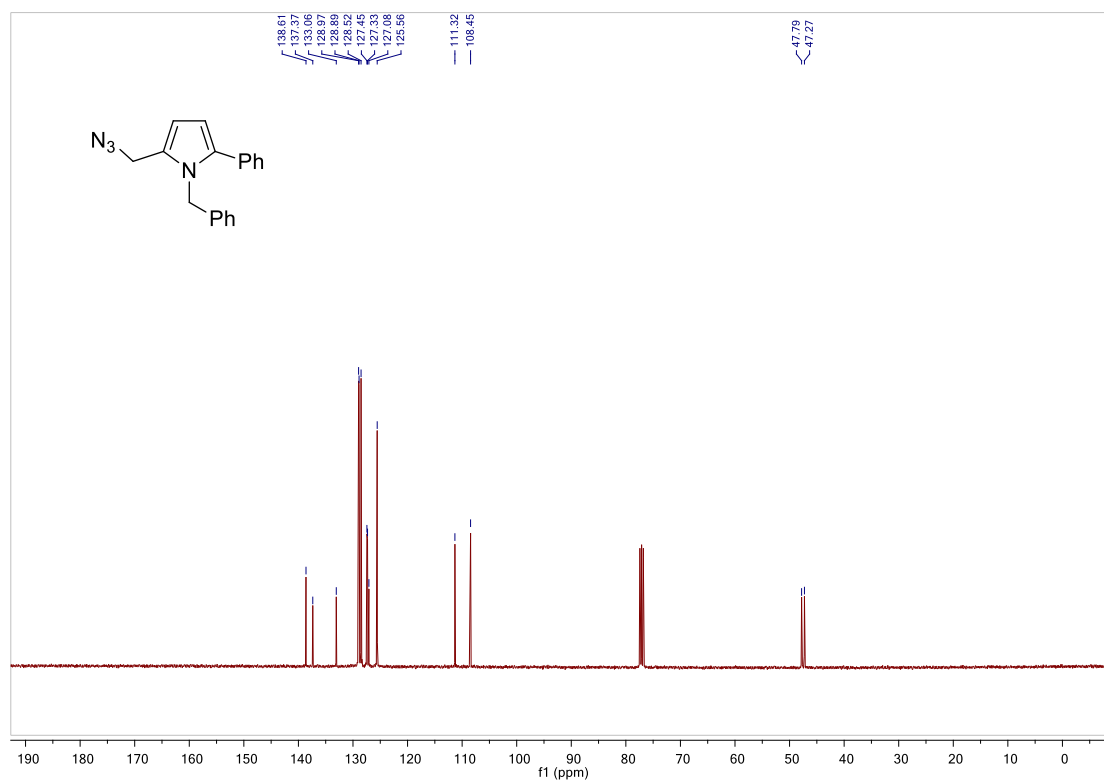
¹³C NMR spectrum of (R)-2-(azidomethyl)-1-(1-phenylethyl)-5-propyl-1H-pyrrole (2a):



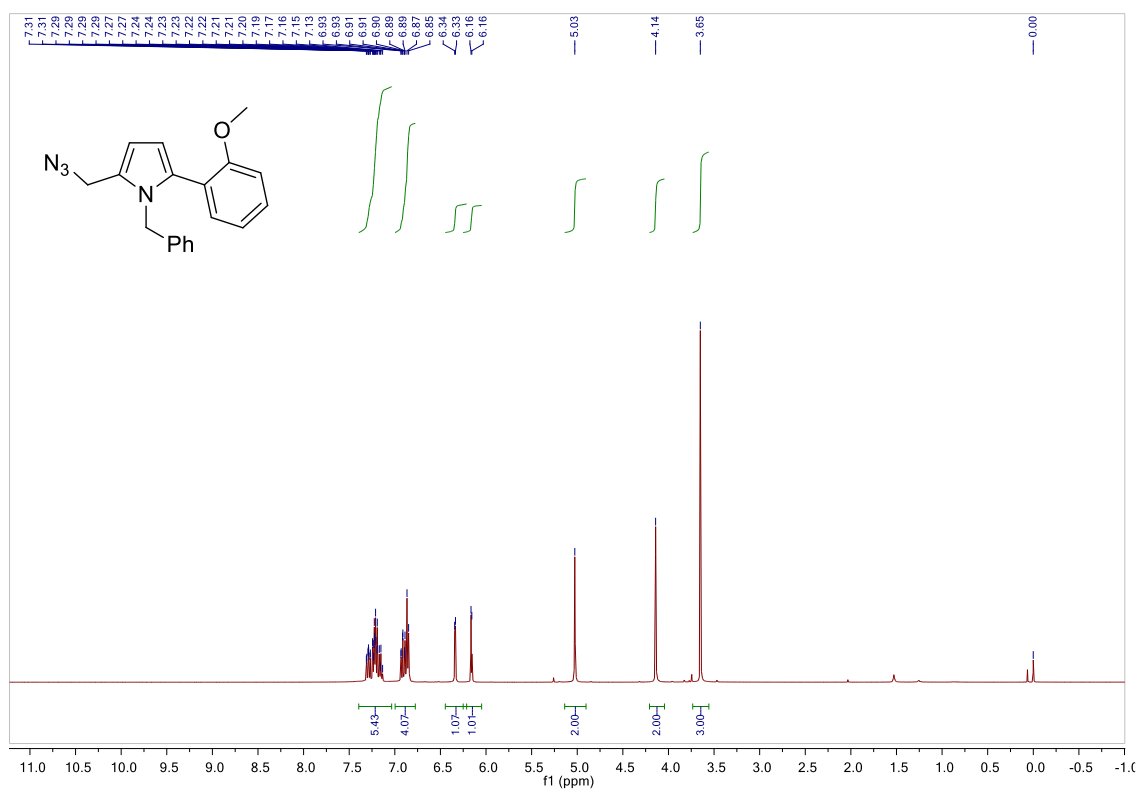
¹H NMR spectrum of 2-(azidomethyl)-1-benzyl-5-phenyl-1H-pyrrole (2b):



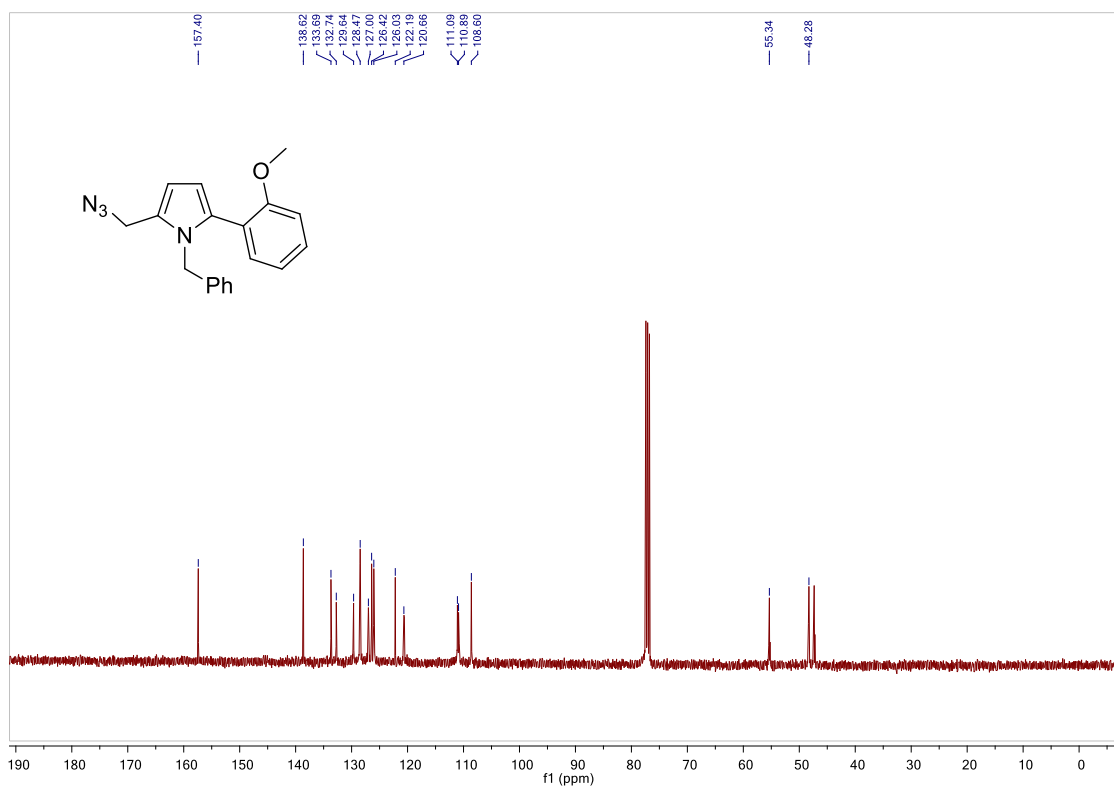
¹³C NMR spectrum of 2-(azidomethyl)-1-benzyl-5-phenyl-1H-pyrrole (2b):



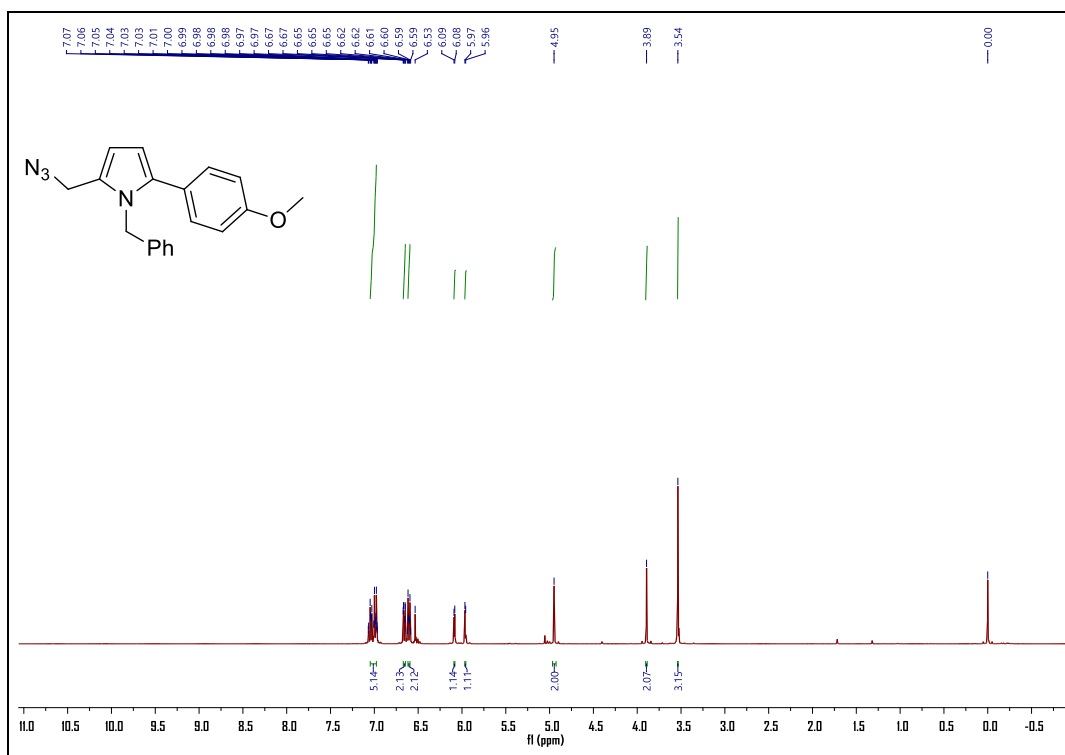
¹H NMR spectrum of 2-(azidomethyl)-1-benzyl-5-(2-methoxyphenyl)-1H-pyrrole (2e):



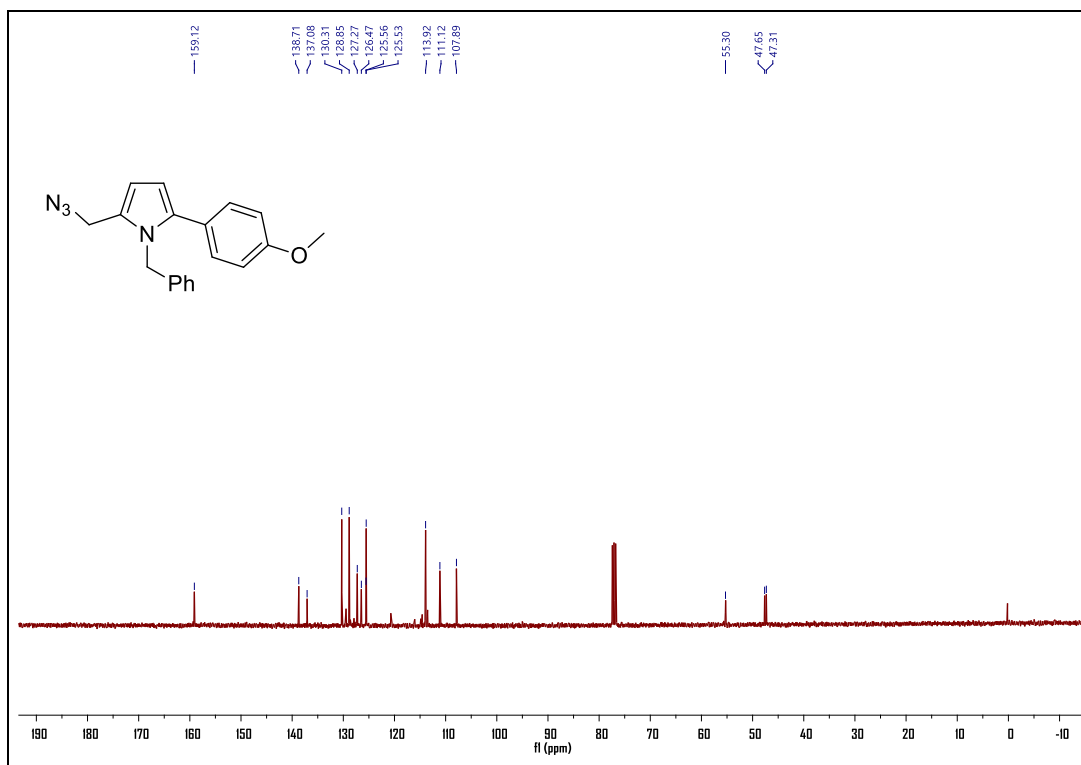
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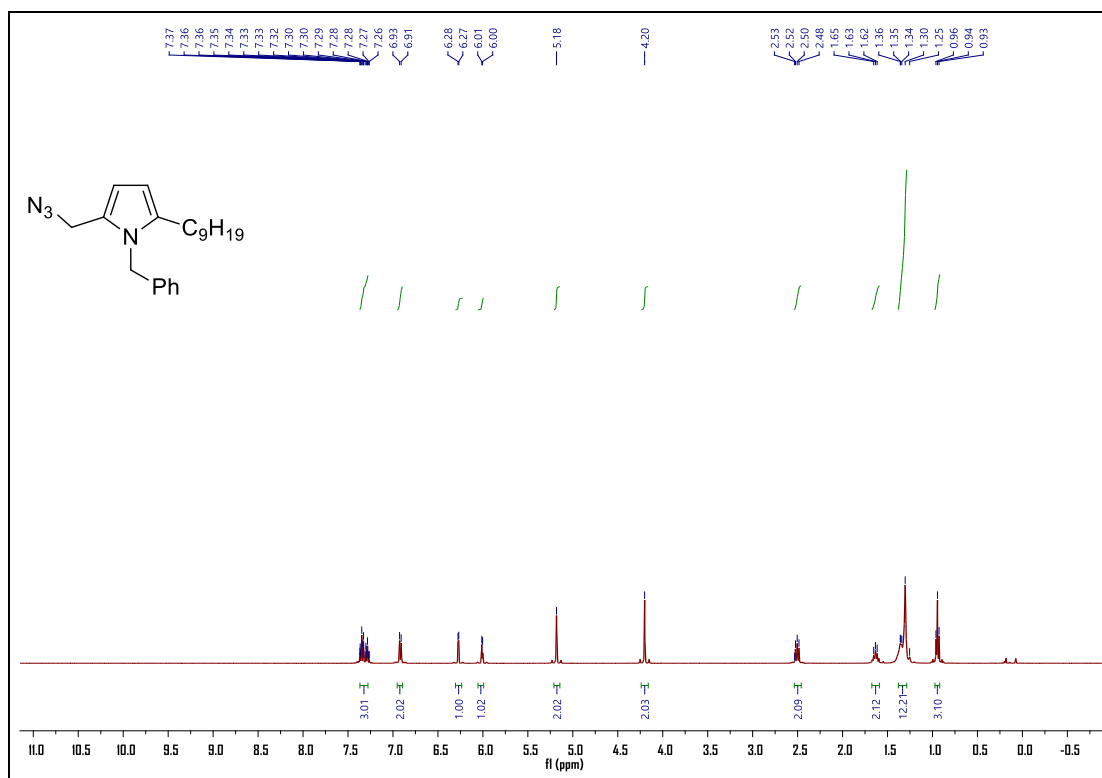
¹H NMR spectrum of 2-(azidomethyl)-1-benzyl-5-(4-methoxyphenyl)-1H-pyrrole (2f):



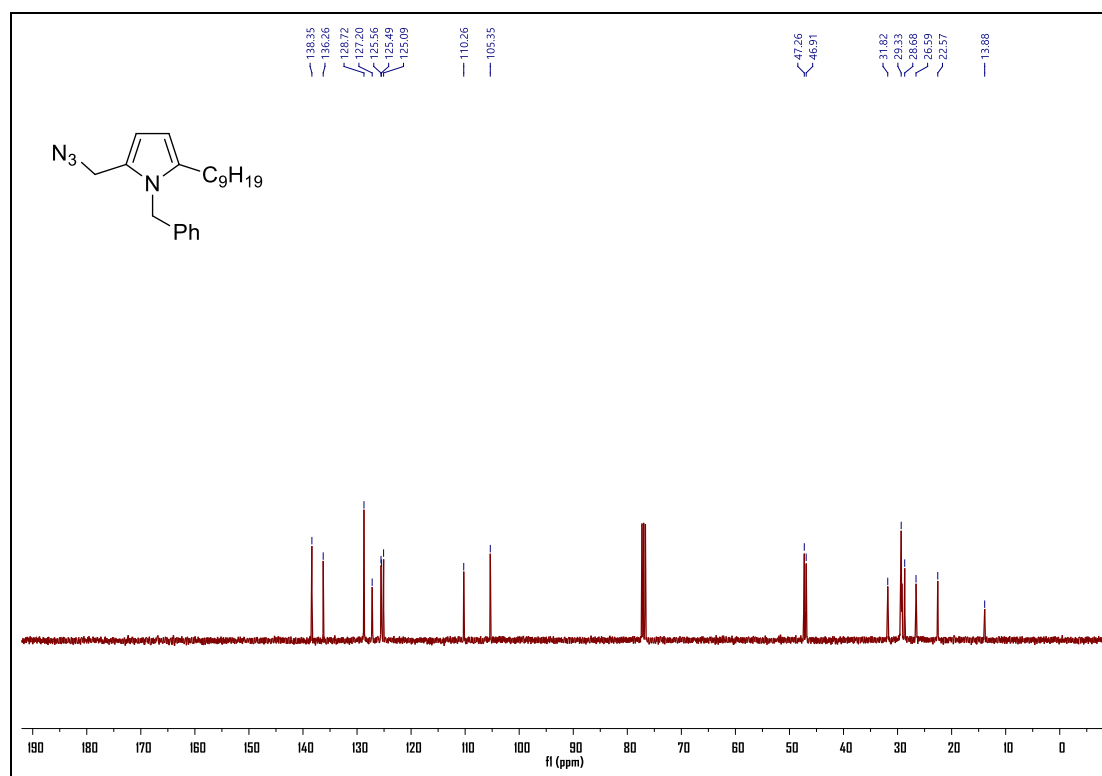
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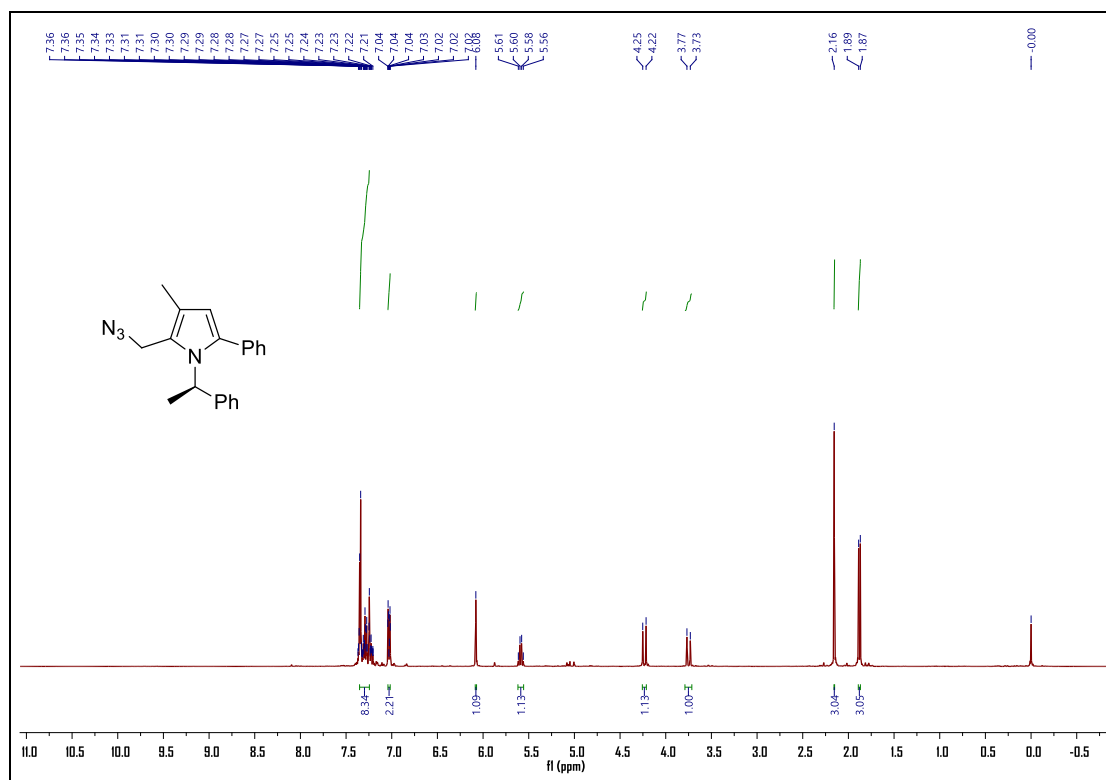
¹H NMR spectrum of 2-(azidomethyl)-1-benzyl-5-nonyl-1H-pyrrole (2g):



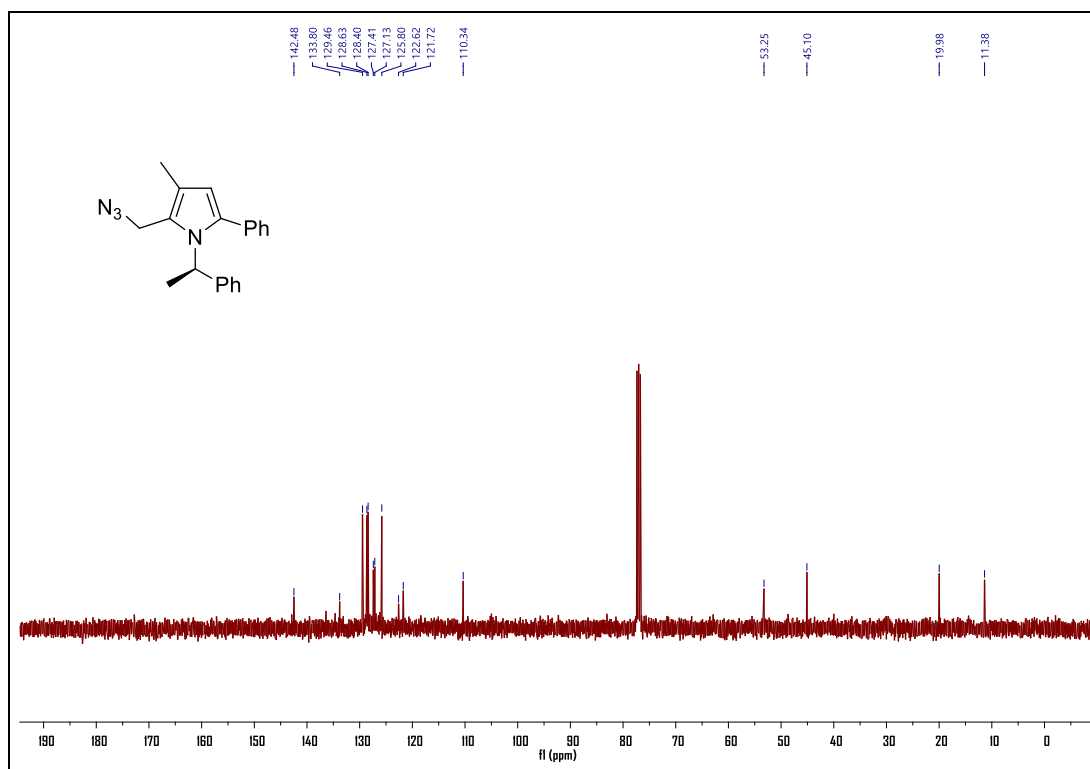
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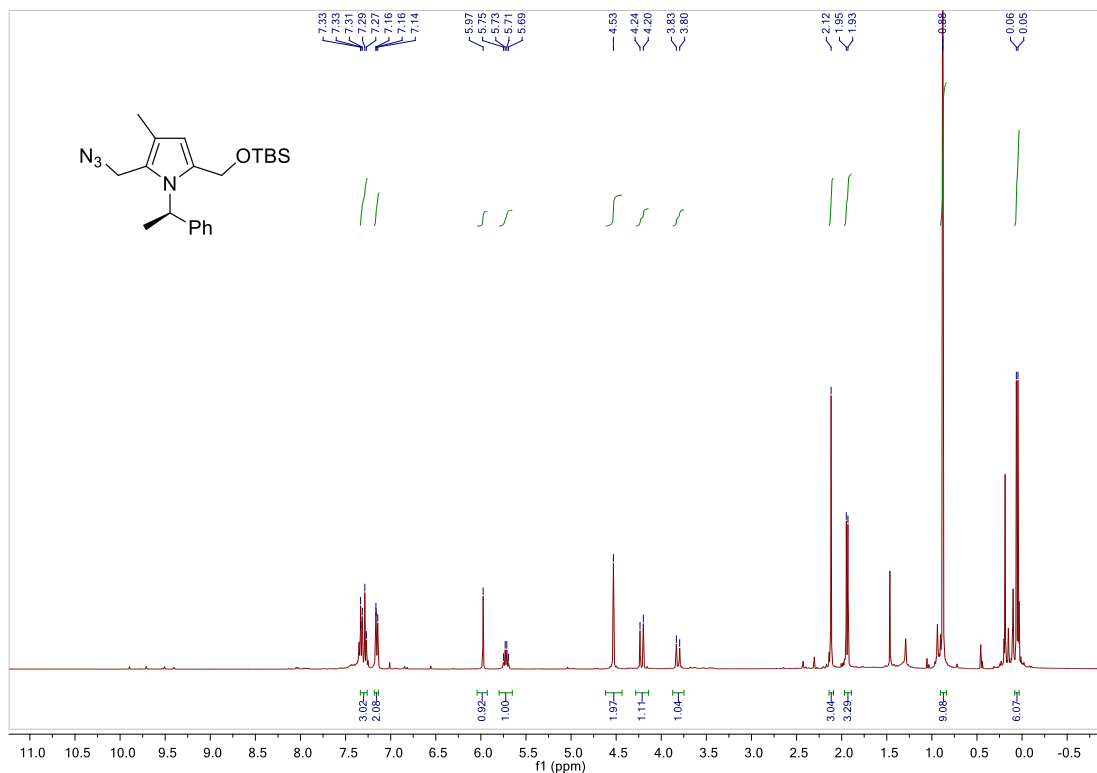
¹H NMR spectrum of (R)-2-(azidomethyl)-3-methyl-5-phenyl-1-(1-phenylethyl)-1H-pyrrole (2h):



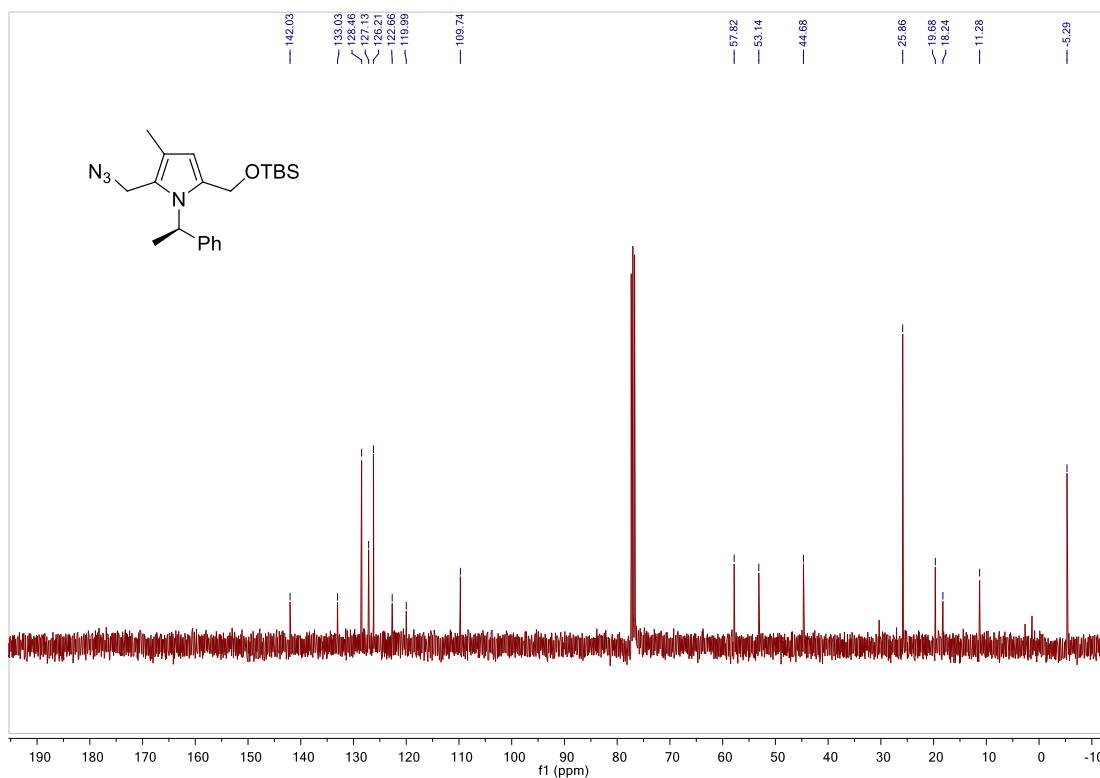
¹³C NMR spectrum of (R)-2-(azidomethyl)-3-methyl-5-phenyl-1-(1-phenylethyl)-1H-pyrrole (2h):



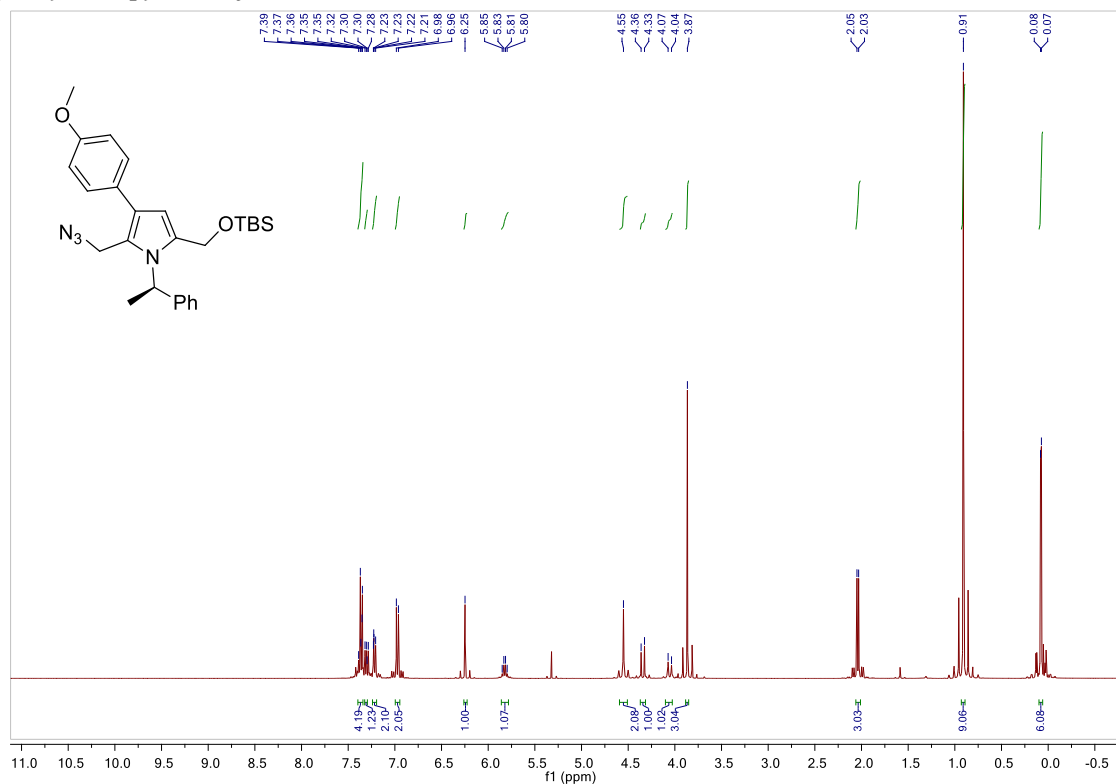
¹H NMR spectrum of (R)-2-(azidomethyl)-5-(((tert-butyldimethylsilyl)oxy)methyl)-3-methyl-1-(1-phenylethyl)-1H-pyrrole (2i):



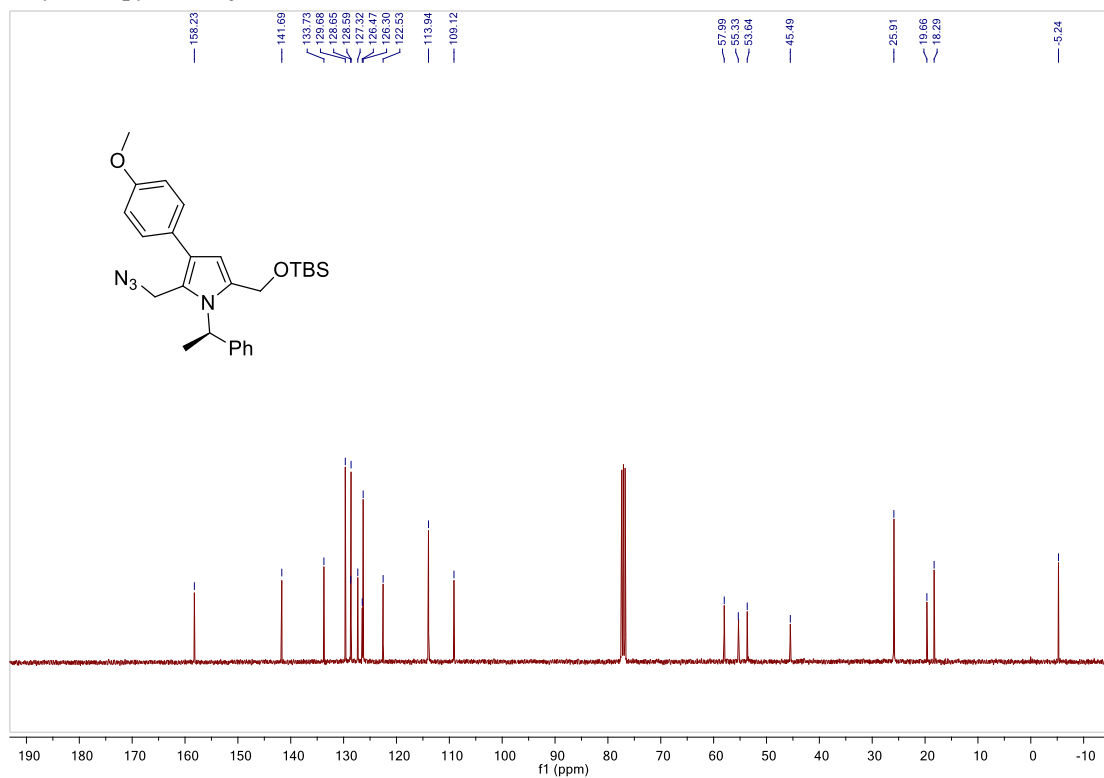
¹³C NMR spectrum of (R)-2-(azidomethyl)-5-(((tert-butyldimethylsilyl)oxy)methyl)-3-methyl-1-(1-phenylethyl)-1H-pyrrole (2i):



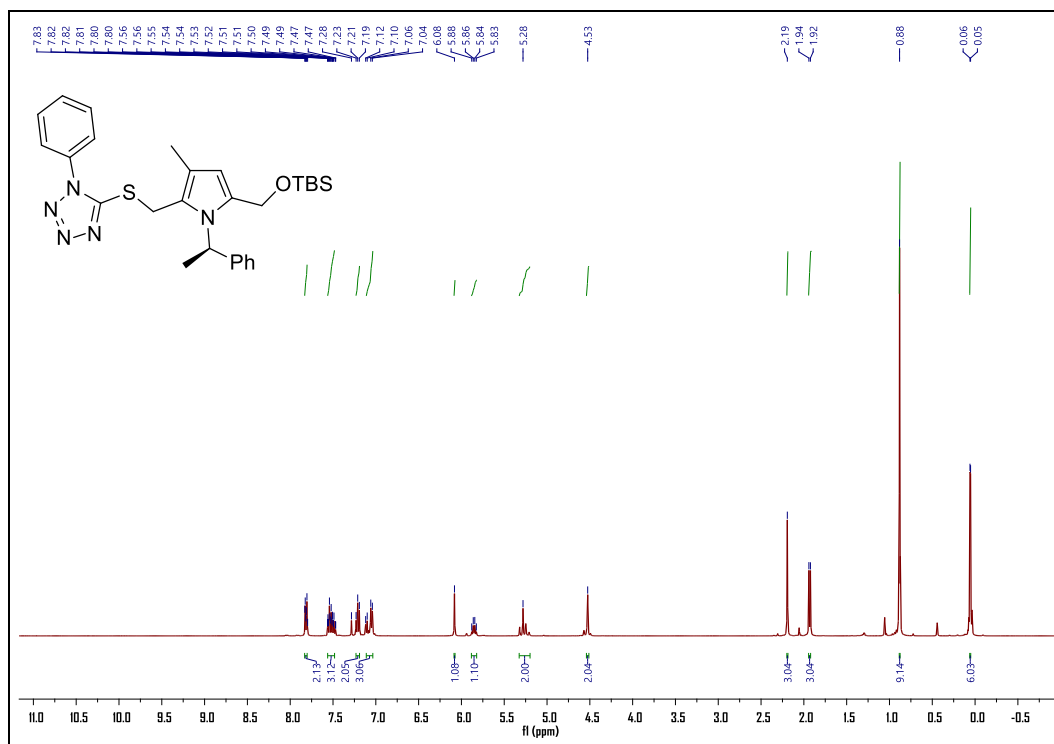
¹H NMR spectrum of (R)-2-(azidomethyl)-5-(((tert-butyl dimethylsilyl)oxy)methyl)-3-(4-methoxyphenyl)-1-(1-phenylethyl)-1H-pyrrole (2j):



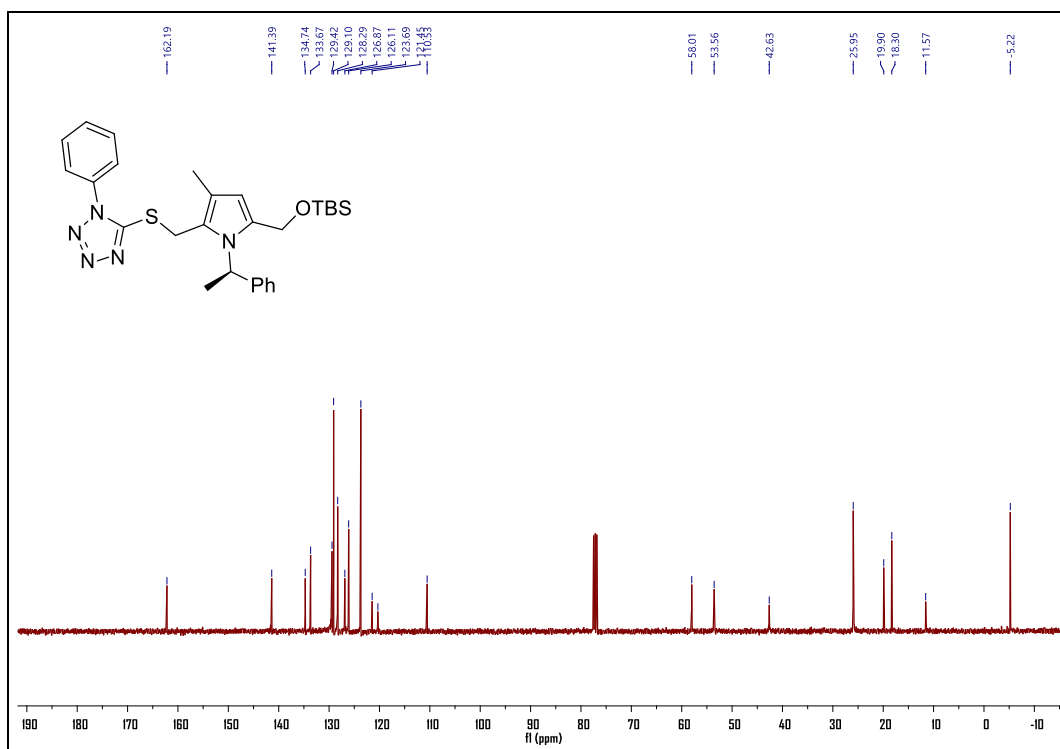
¹³C NMR spectrum of (R)-2-(azidomethyl)-5-(((tert-butyl dimethylsilyl)oxy)methyl)-3-(4-methoxyphenyl)-1-(1-phenylethyl)-1H-pyrrole (2j):



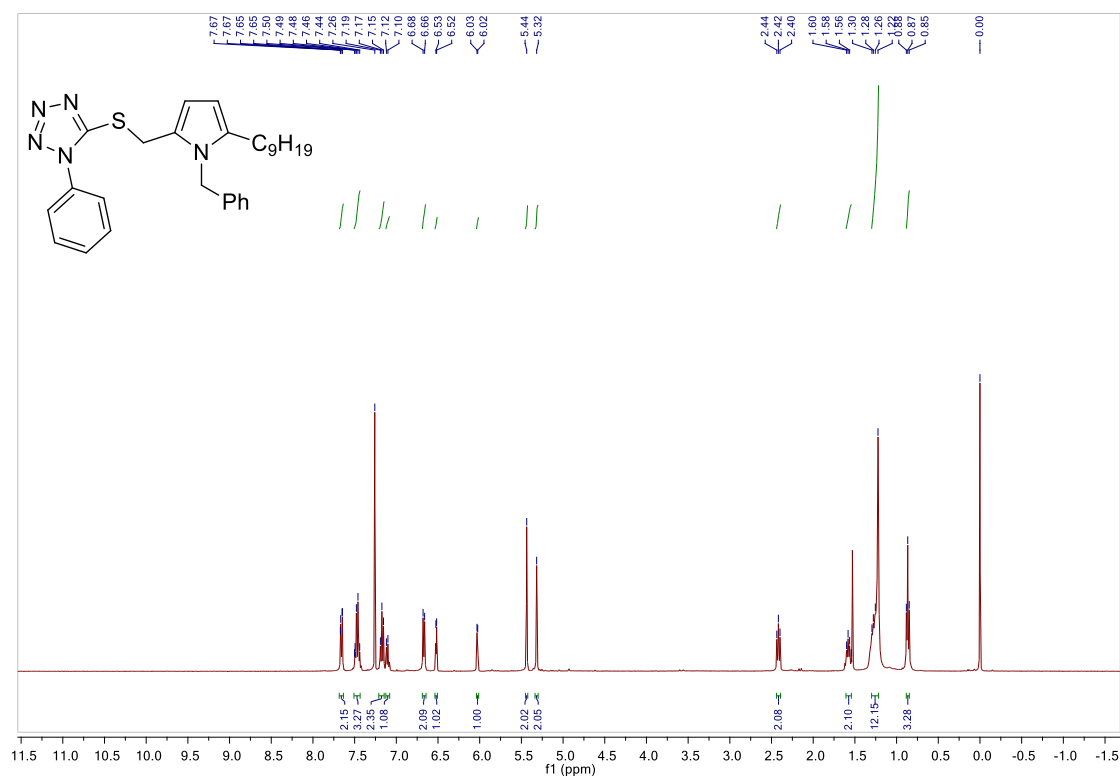
¹H NMR spectrum of (R)-5-(((5-(((tert-butyldimethylsilyl)oxy)methyl)-3-methyl-1-(1-phenylethyl)-1H-pyrrol-2-yl)methyl)thio)-1-phenyl-1H-tetrazole (2k):



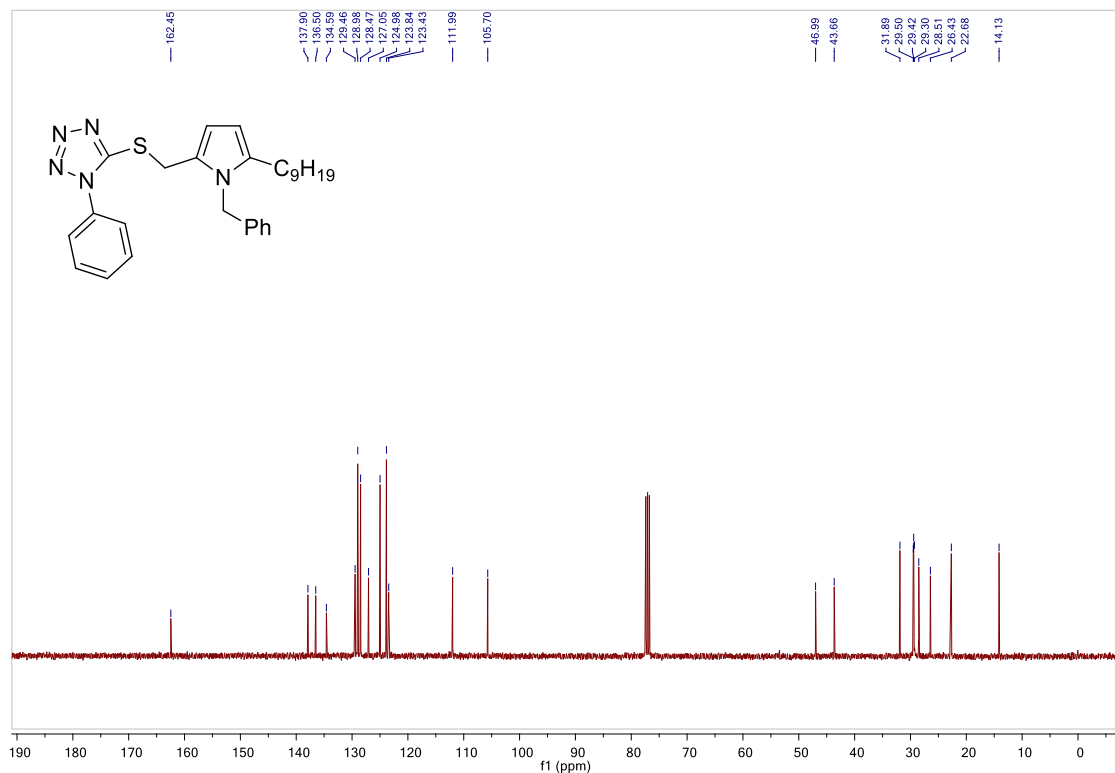
¹³C NMR spectrum of (R)-5-(((5-(((tert-butyldimethylsilyl)oxy)methyl)-3-methyl-1-(1-phenylethyl)-1H-pyrrol-2-yl)methyl)thio)-1-phenyl-1H-tetrazole (2k):



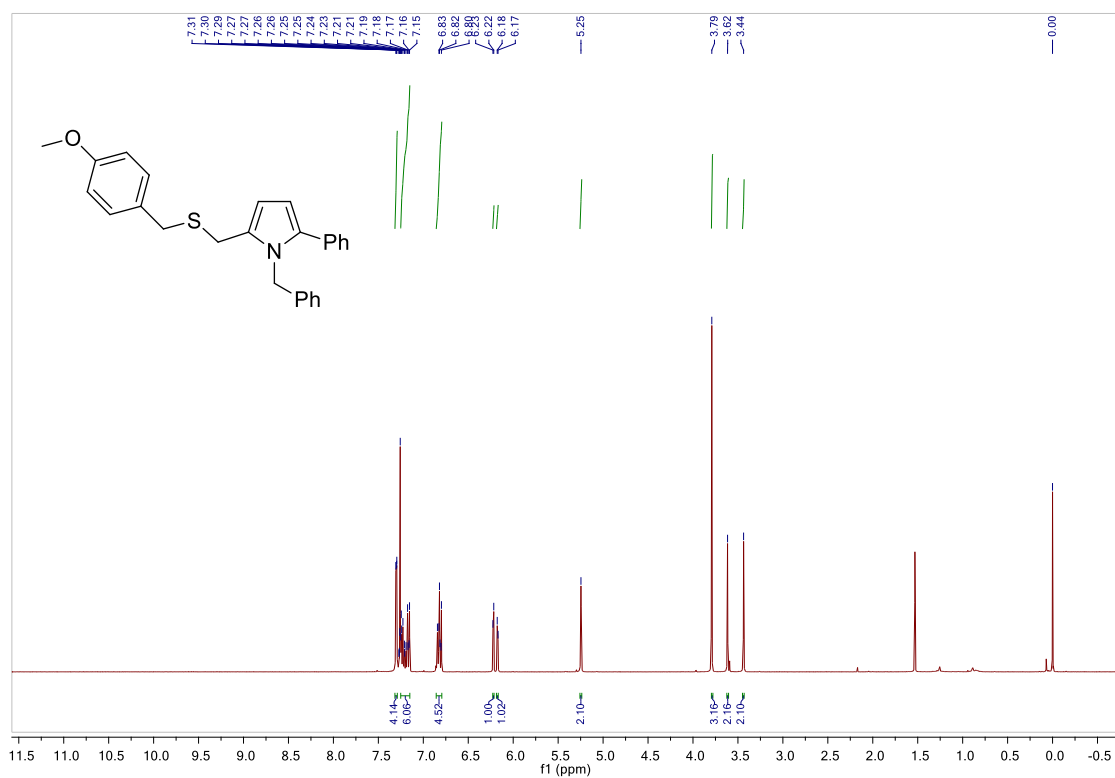
¹H NMR spectrum of 5-(((1-benzyl-5-nonyl-1H-pyrrol-2-yl)methyl)thio)-1-phenyl-1H-tetrazole (2l):



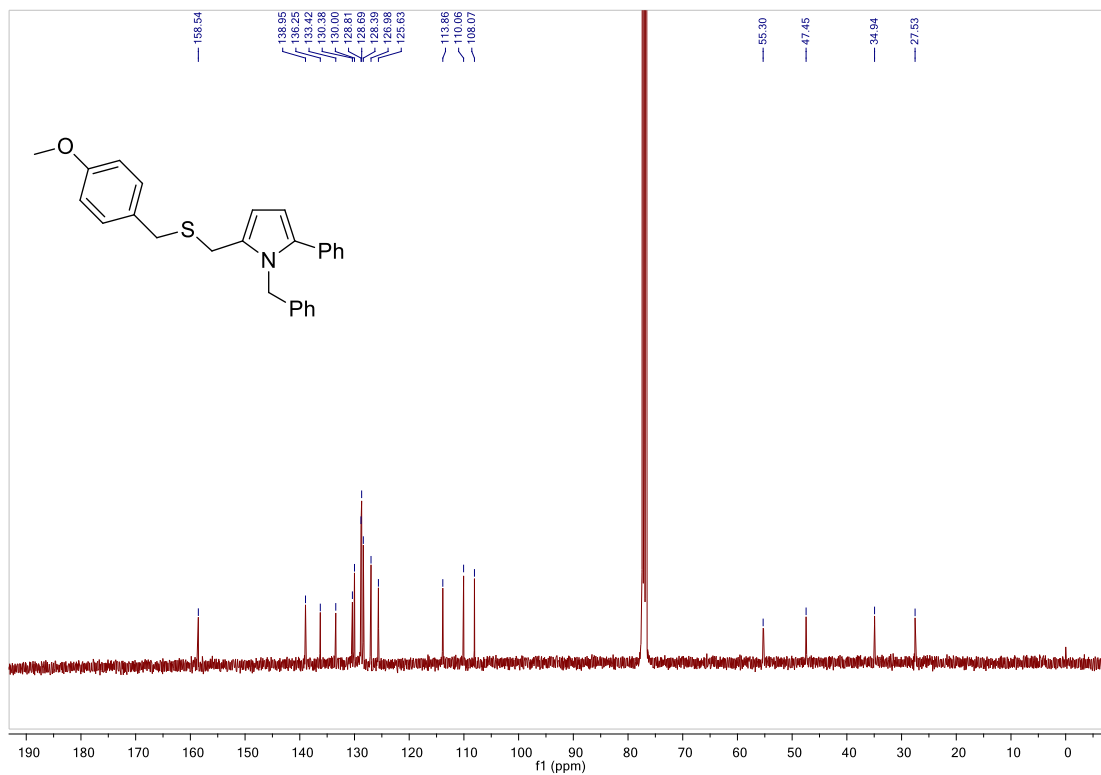
¹³C NMR spectrum of 5-(((1-benzyl-5-nonyl-1H-pyrrol-2-yl)methyl)thio)-1-phenyl-1H-tetrazole (2l):



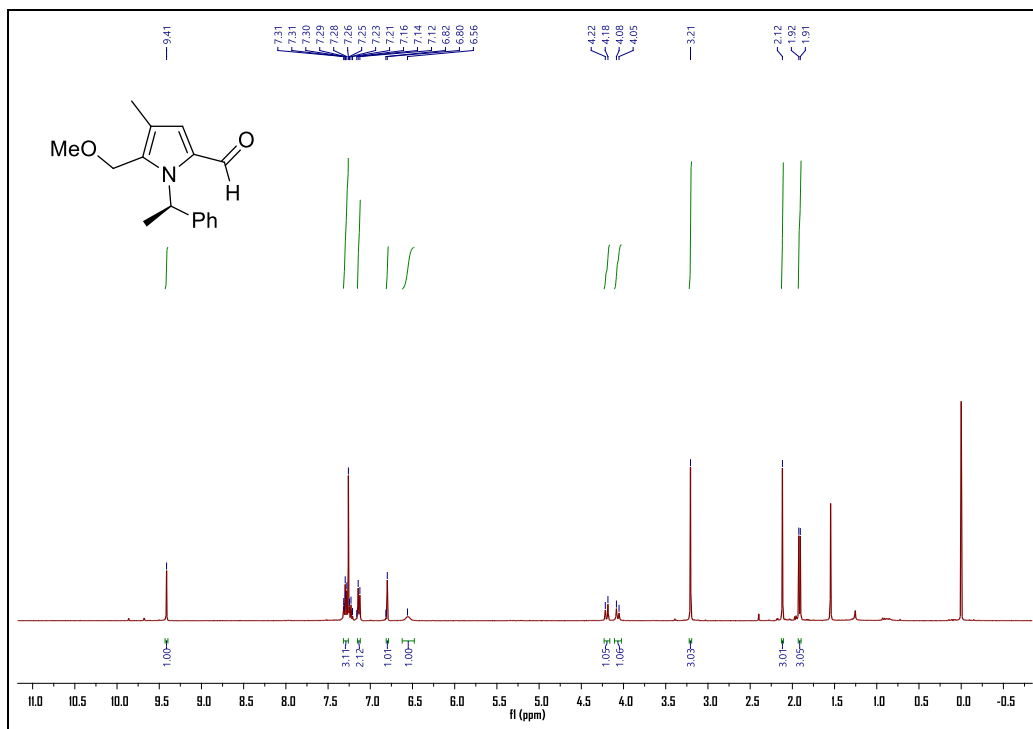
¹H NMR spectrum of 1-benzyl-2-(((4-methoxybenzyl)thio)methyl)-5-phenyl-1H-pyrrole (2m):



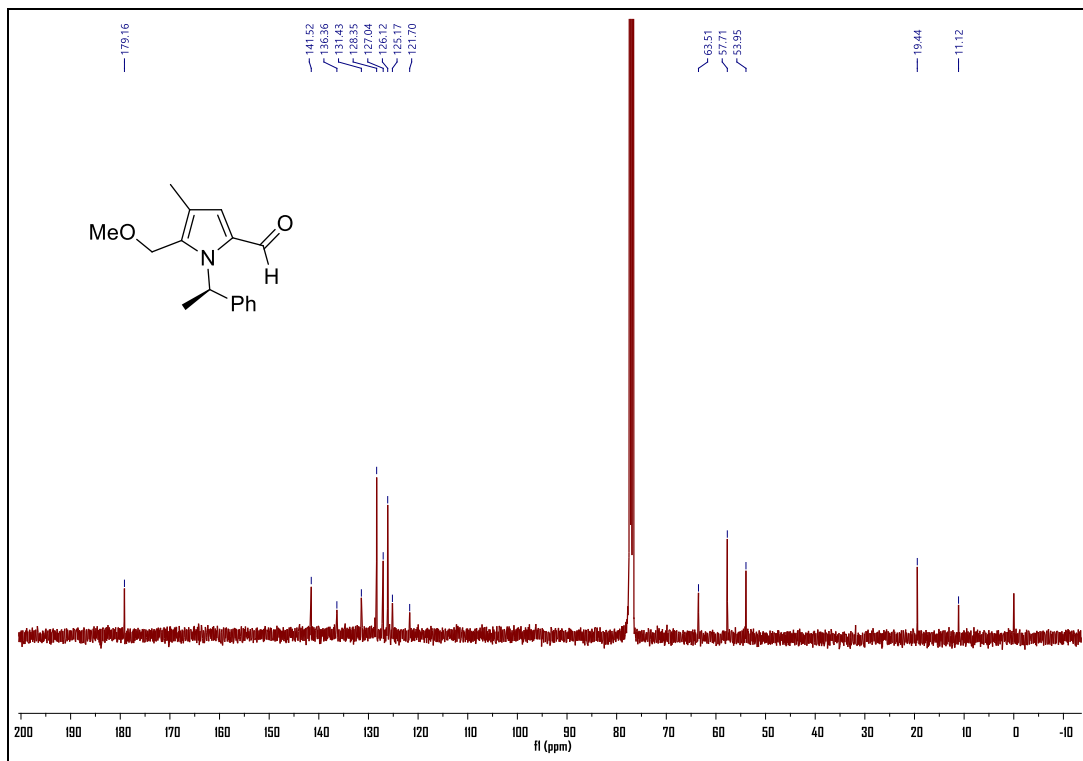
¹³C NMR spectrum of 1-benzyl-2-(((4-methoxybenzyl)thio)methyl)-5-phenyl-1H-pyrrole (2m):



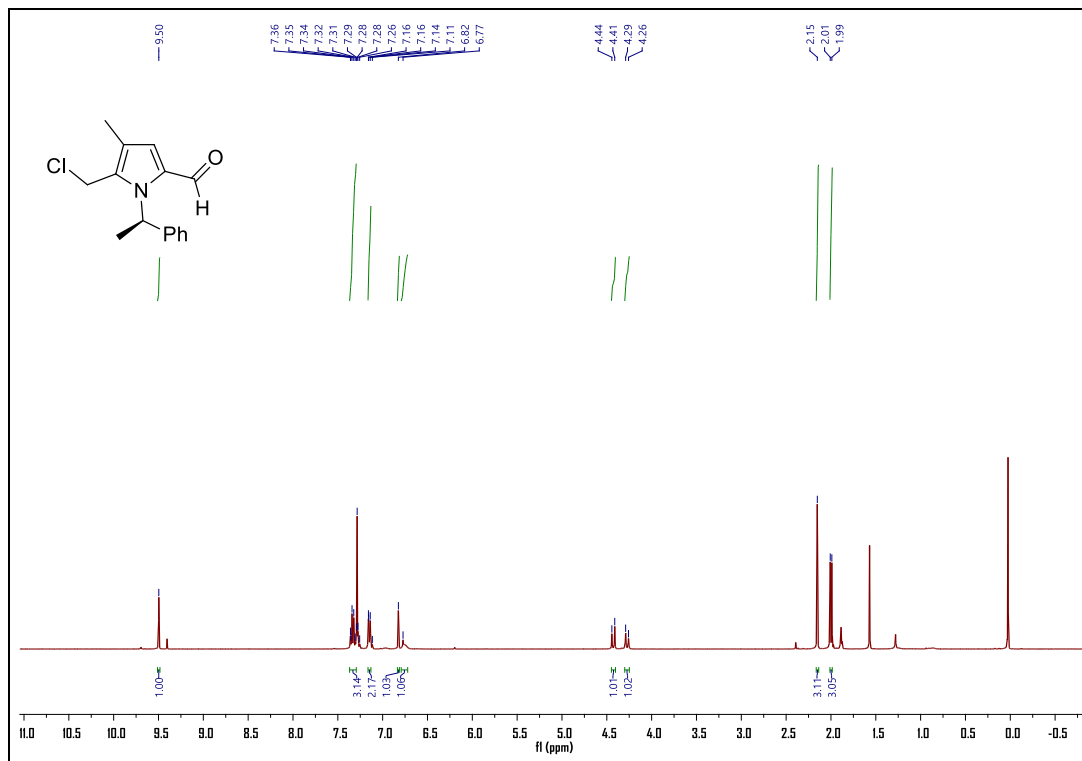
¹H NMR spectrum of (R)-5-(methoxymethyl)-4-methyl-1-(1-phenylethyl)-1H-pyrrole-2-carbaldehyde (4a):



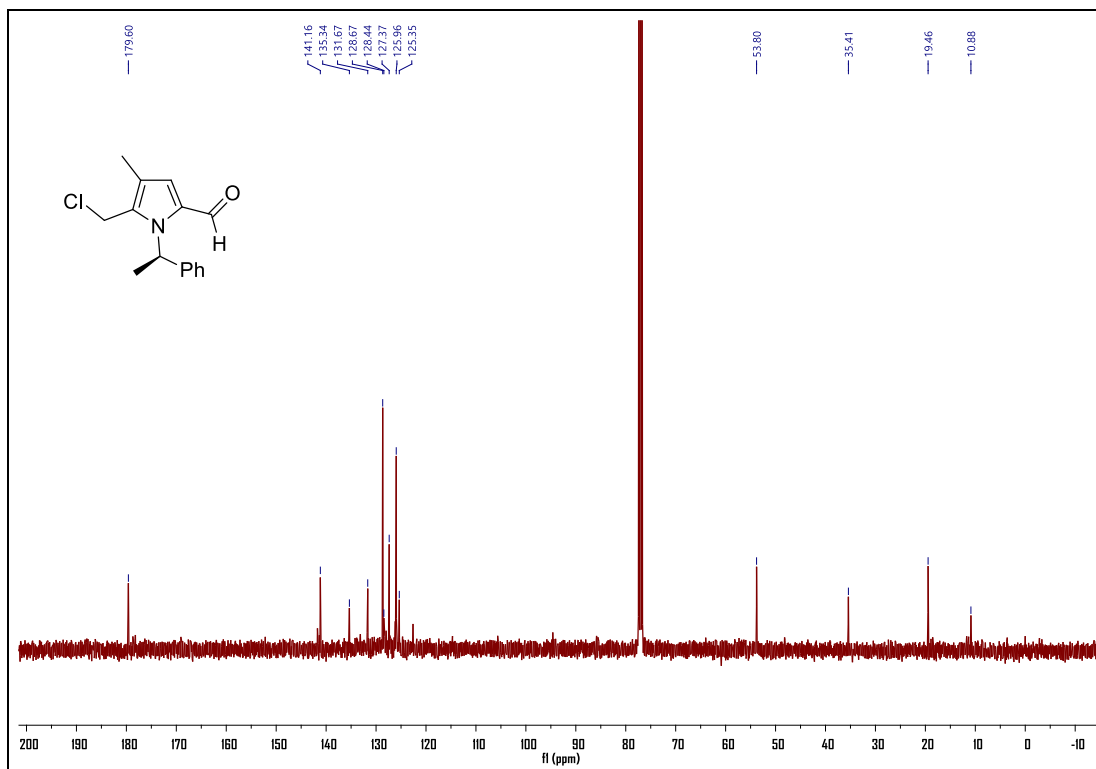
¹³C NMR spectrum of (R)-5-(methoxymethyl)-4-methyl-1-(1-phenylethyl)-1H-pyrrole-2-carbaldehyde (4a):



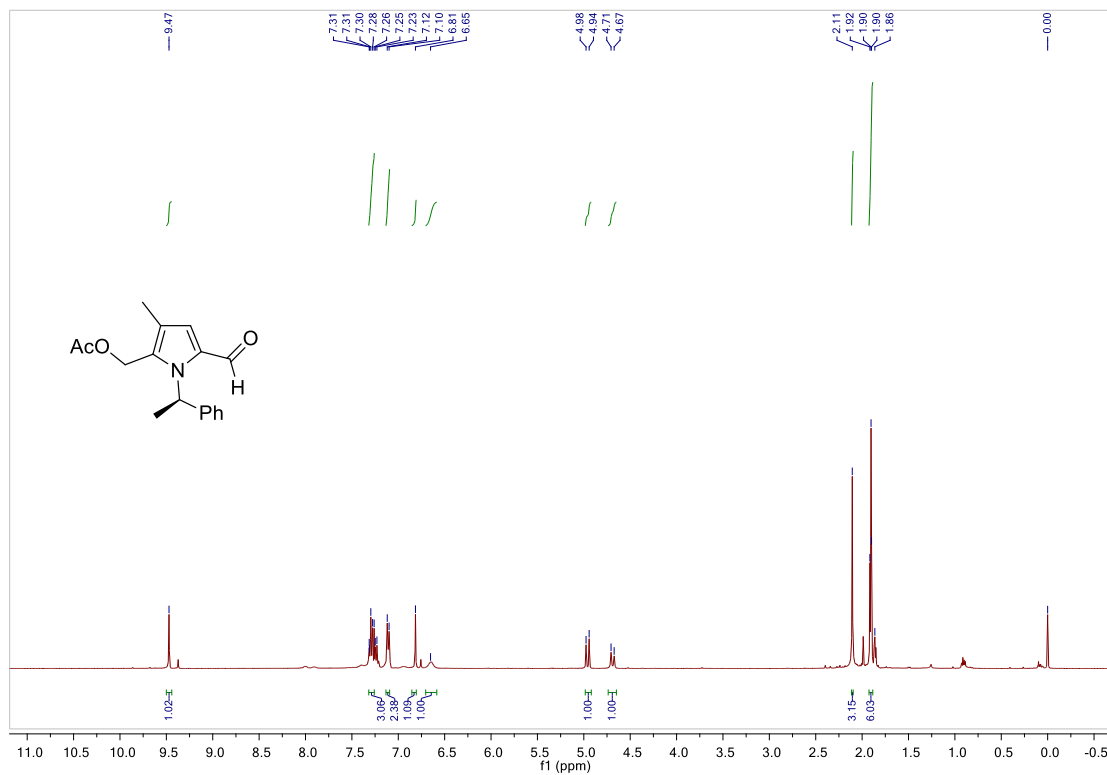
¹H NMR spectrum of (R)-5-(chloromethyl)-4-methyl-1-(1-phenylethyl)-1H-pyrrole-2-carbaldehyde (4b):



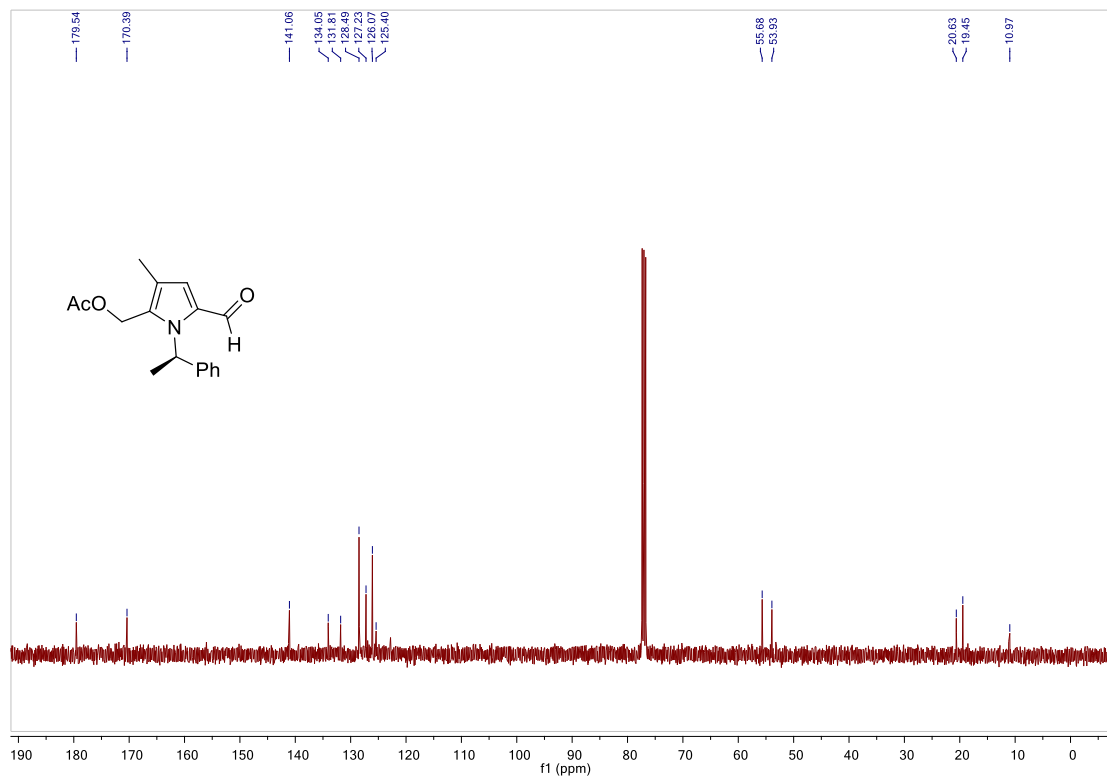
¹³C NMR spectrum of (R)-5-(chloromethyl)-4-methyl-1-(1-phenylethyl)-1H-pyrrole-2-carbaldehyde (4b):



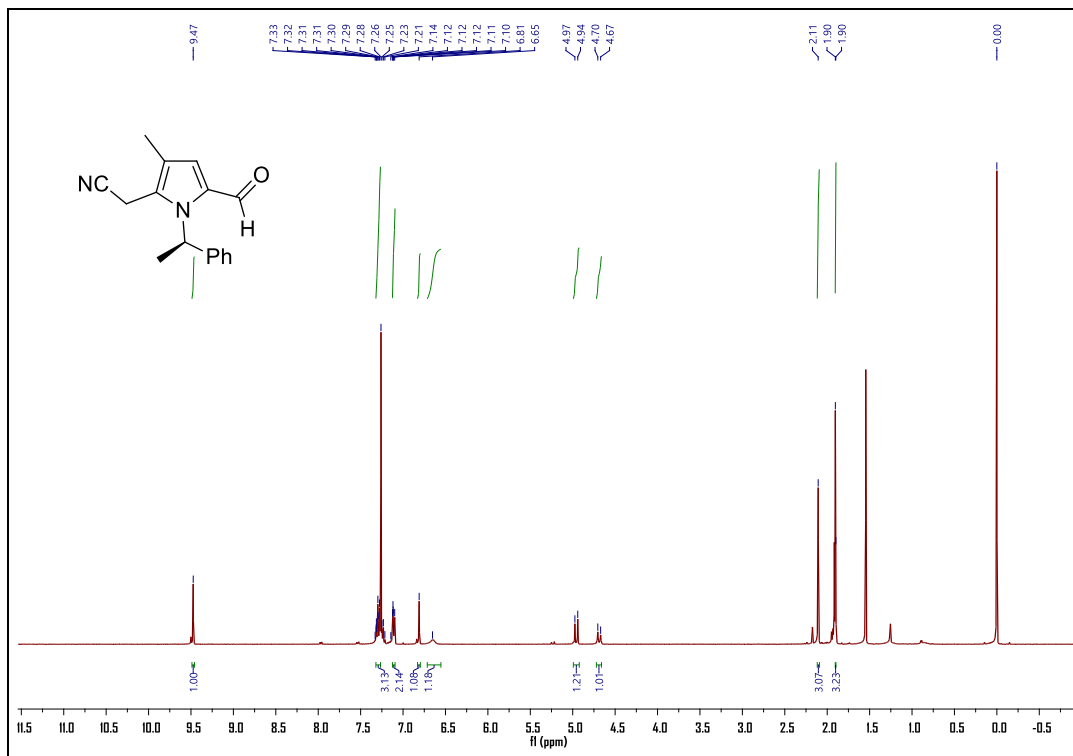
¹H NMR spectrum of (R)-(5-formyl-3-methyl-1-(1-phenylethyl)-1H-pyrrol-2-yl)methyl acetate (4c):



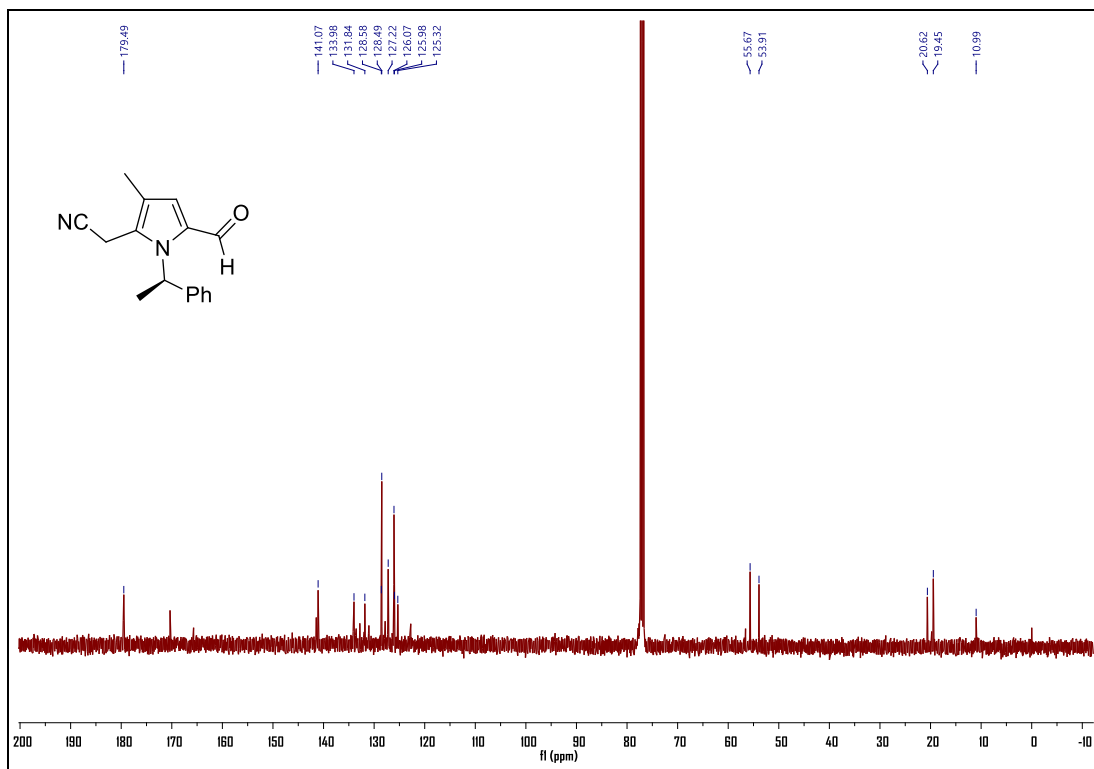
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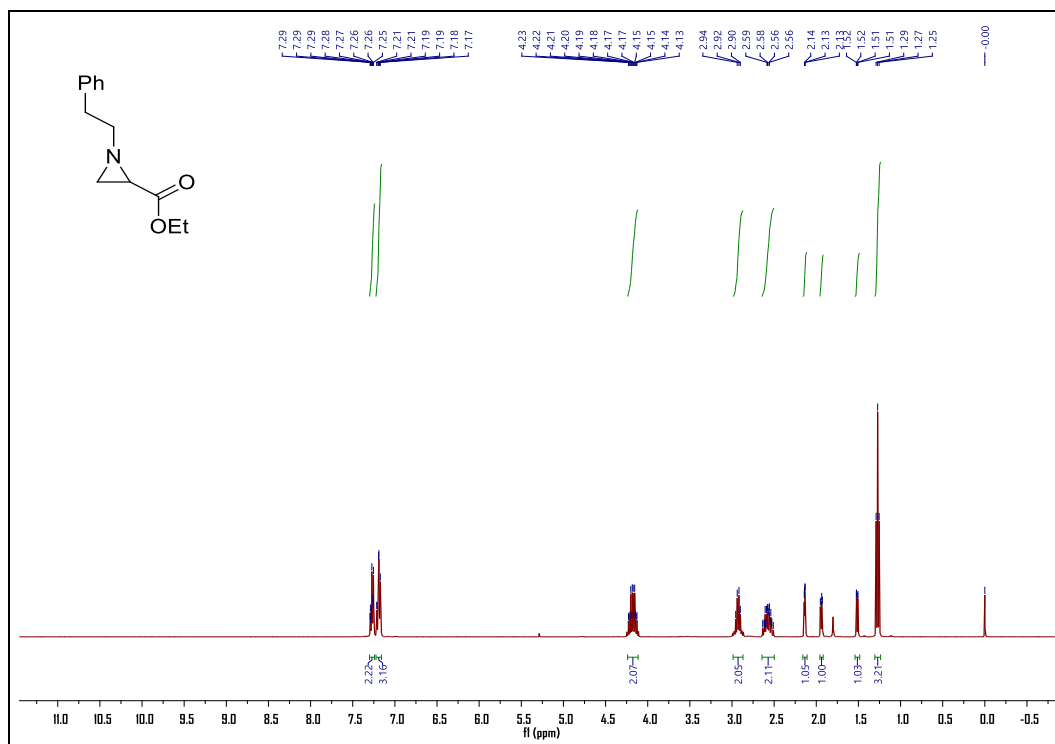
***¹H* NMR spectrum of (R)-2-(5-formyl-3-methyl-1-(1-phenylethyl)-1H-pyrrol-2-yl)acetonitrile (4d):**



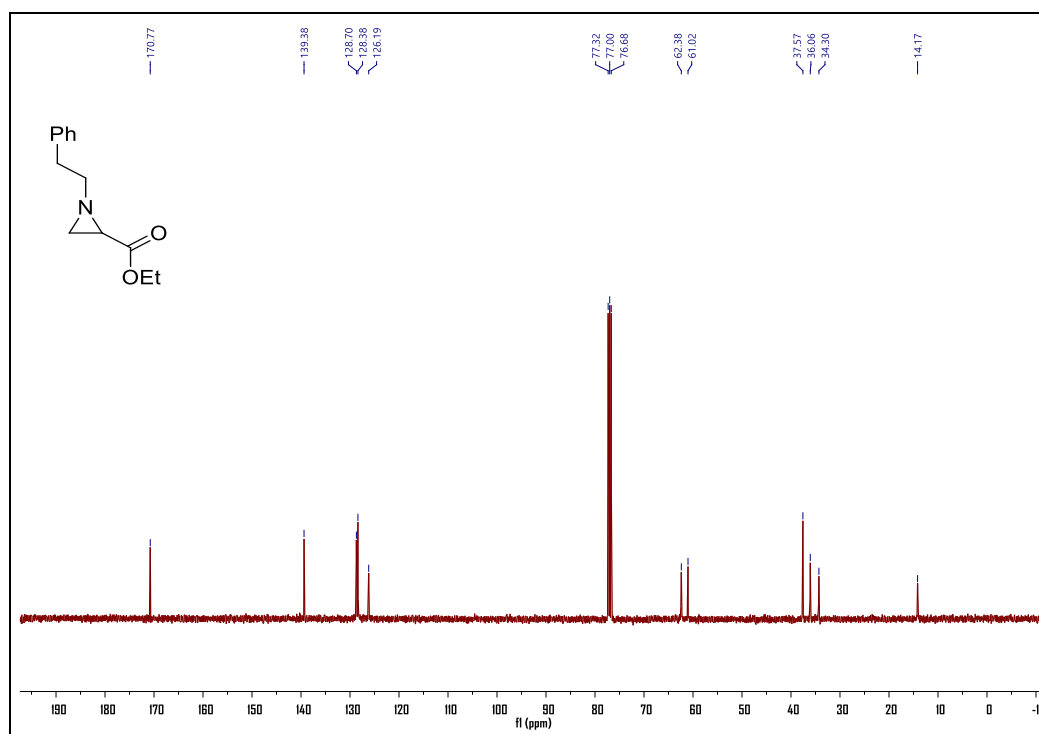
***¹³C* NMR spectrum of (R)-2-(5-formyl-3-methyl-1-(1-phenylethyl)-1H-pyrrol-2-yl)acetonitrile (4d):**



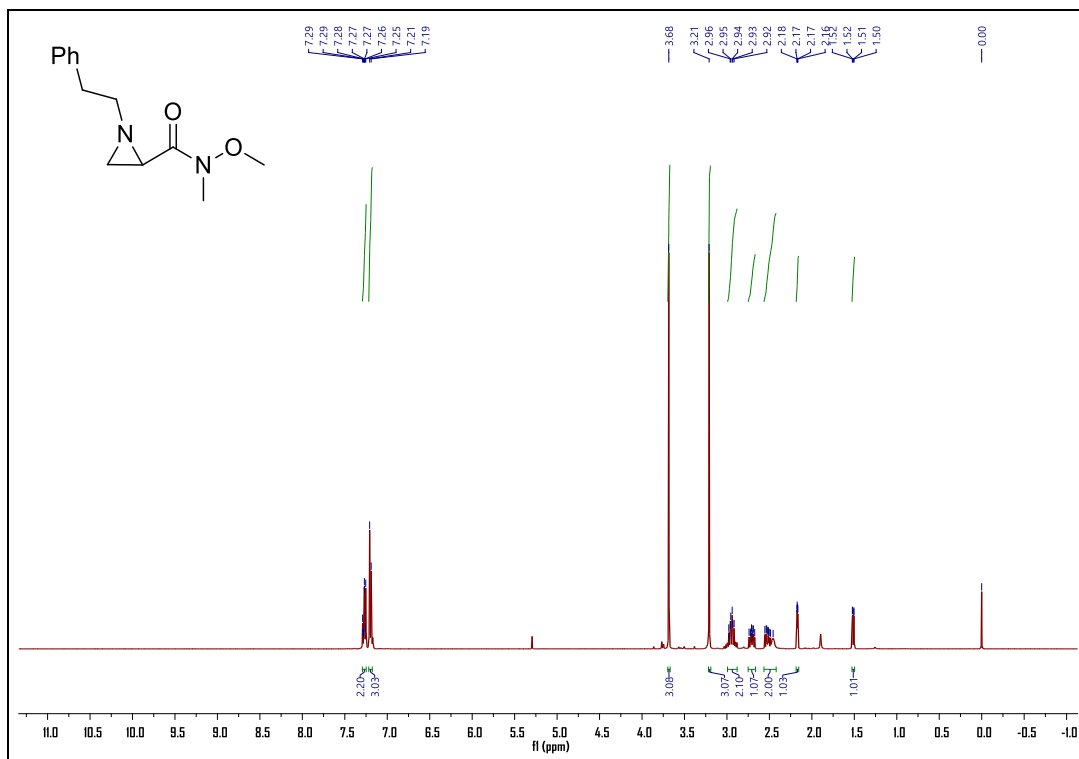
¹H NMR spectrum of Ethyl 1-phenethylaziridine-2-carboxylate (11):



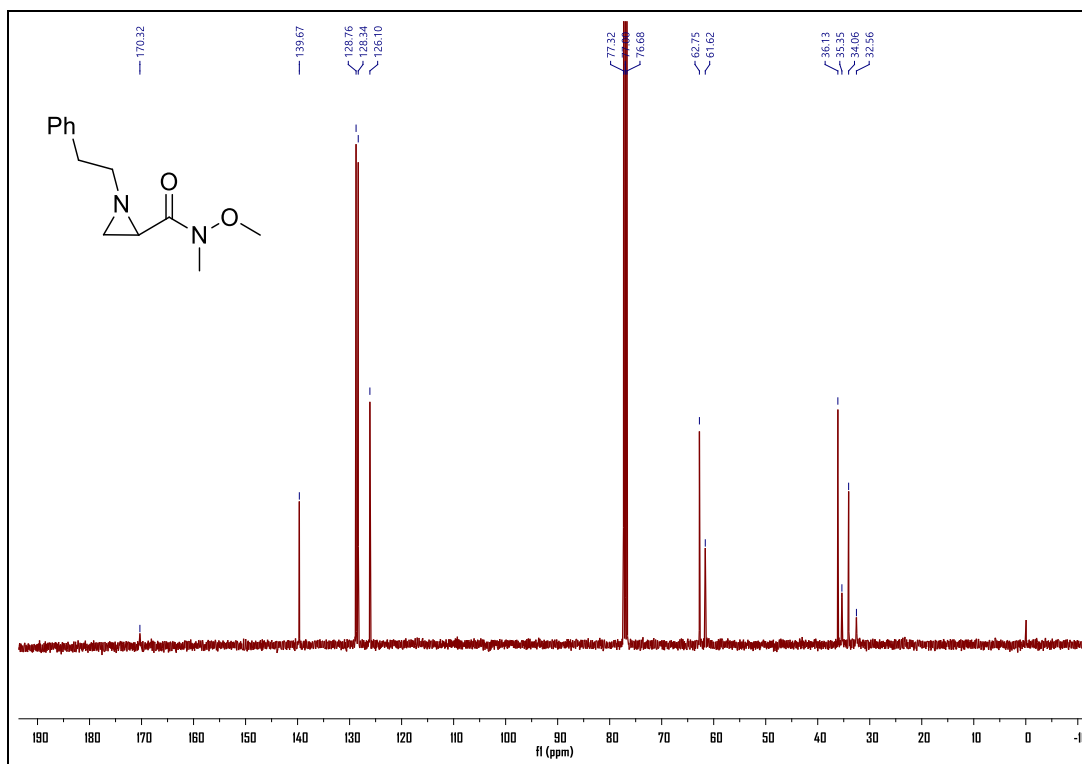
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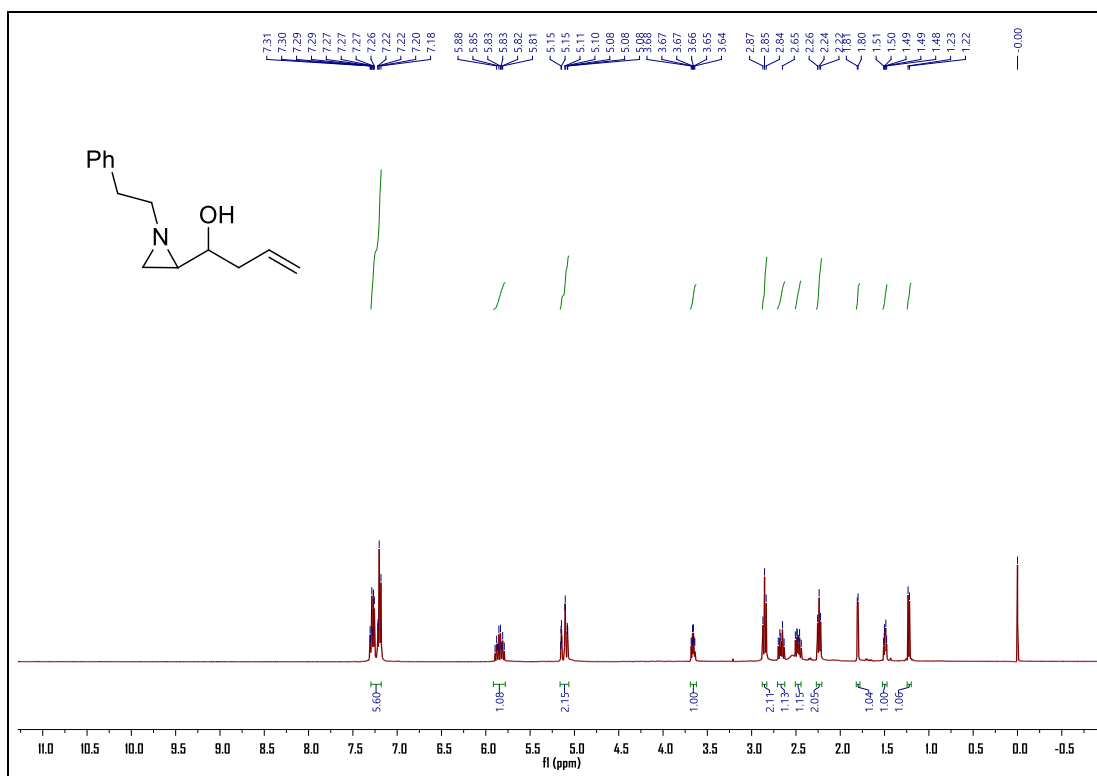
¹H NMR spectrum of *N*-methoxy-*N*-methyl-1-phenethylaziridine-2-carboxamide (12):



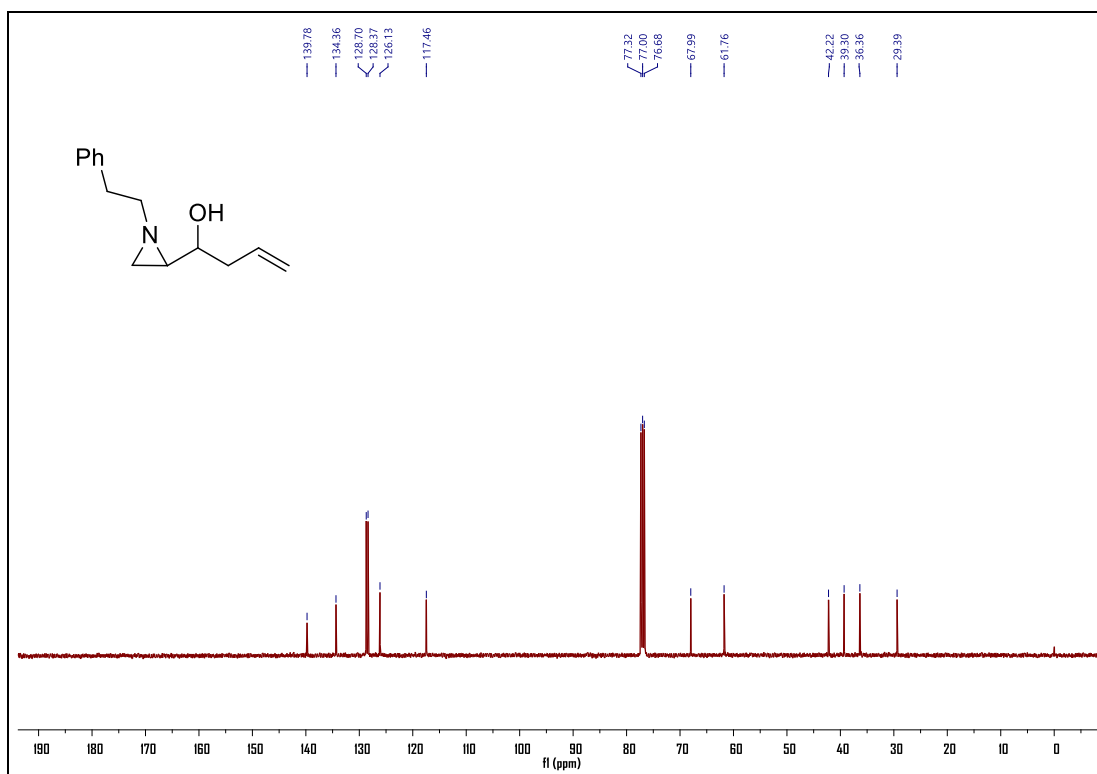
¹³C NMR spectrum of *N*-methoxy-*N*-methyl-1-phenethylaziridine-2-carboxamide (12):



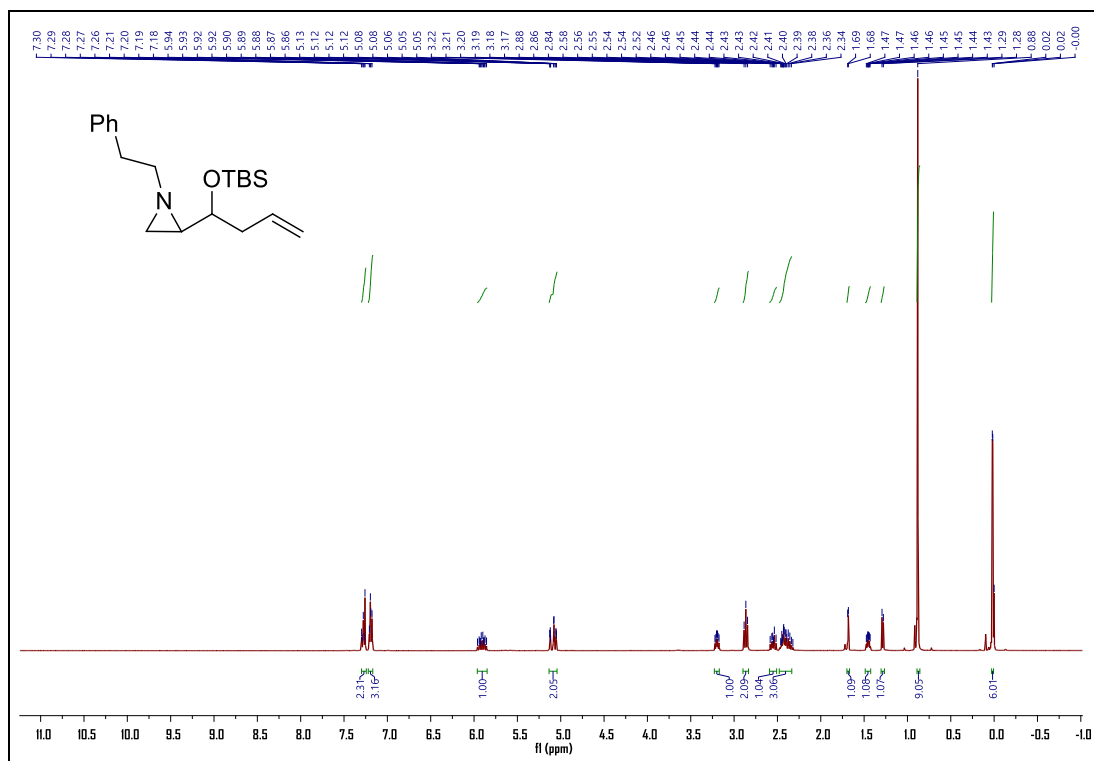
¹H NMR spectrum of 1-(1-phenethylaziridin-2-yl)but-3-en-1-ol (13):



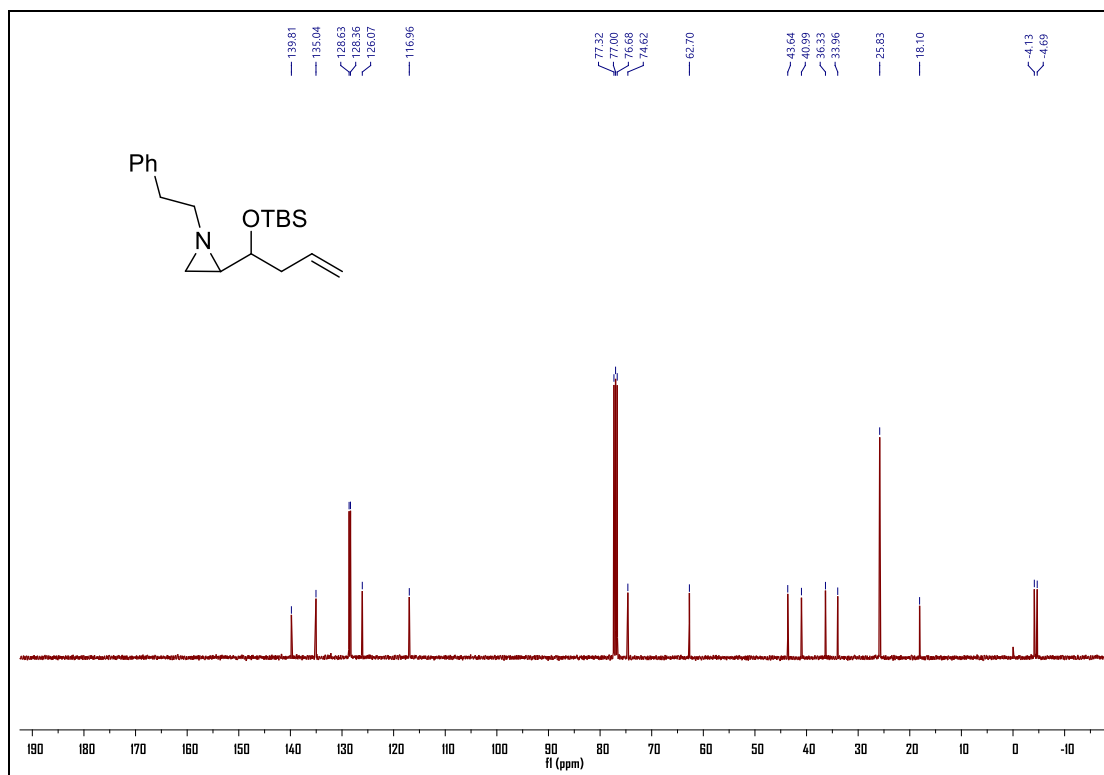
¹³C NMR spectrum of 1-(1-phenethylaziridin-2-yl)but-3-en-1-ol (13):



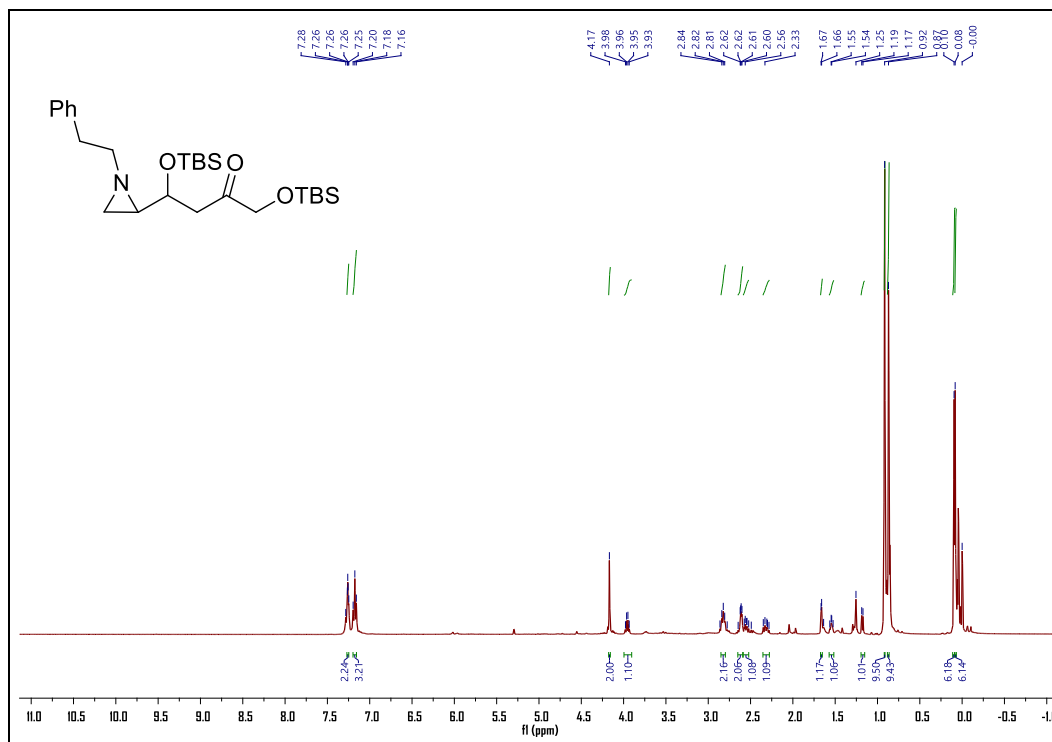
¹H NMR spectrum of 2-(1-((tert-butyldimethylsilyl)oxy)but-3-en-1-yl)-1-phenethylaziridine (14):



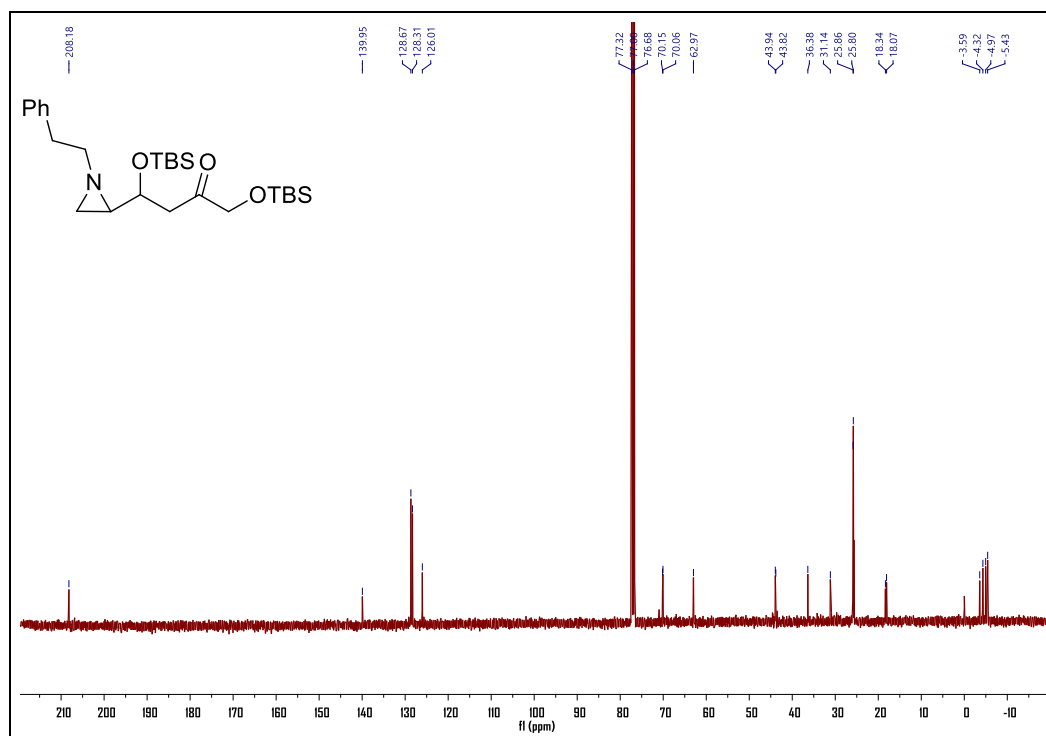
¹³C NMR spectrum of 2-(1-((tert-butyldimethylsilyl)oxy)but-3-en-1-yl)-1-phenethylaziridine (14):



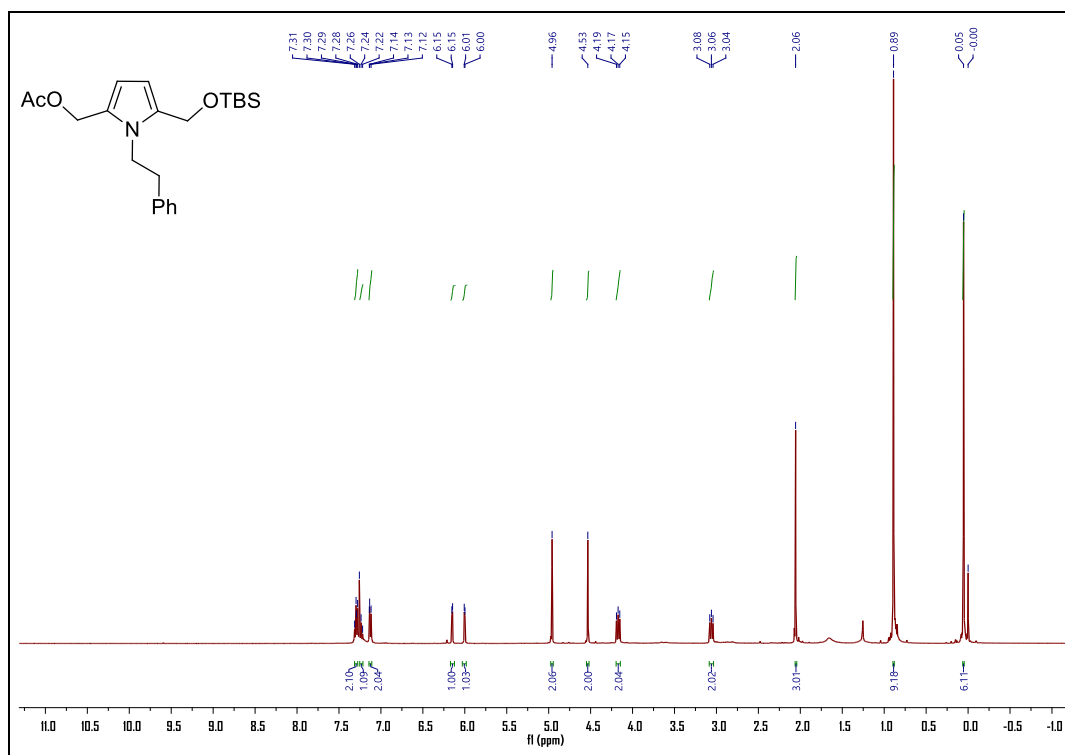
¹H NMR spectrum of Octamethyl-8-(1-phenethylaziridin-2-yl)-4,9-dioxo-3,10-disiladodecan-6-one (15):



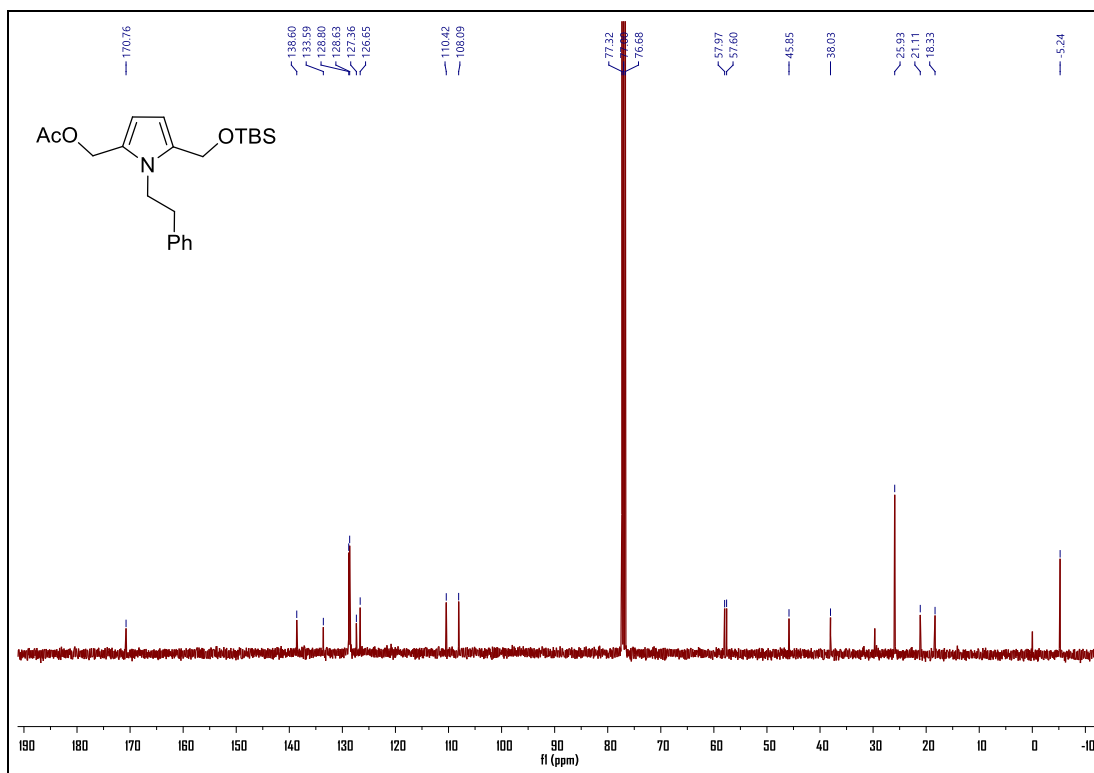
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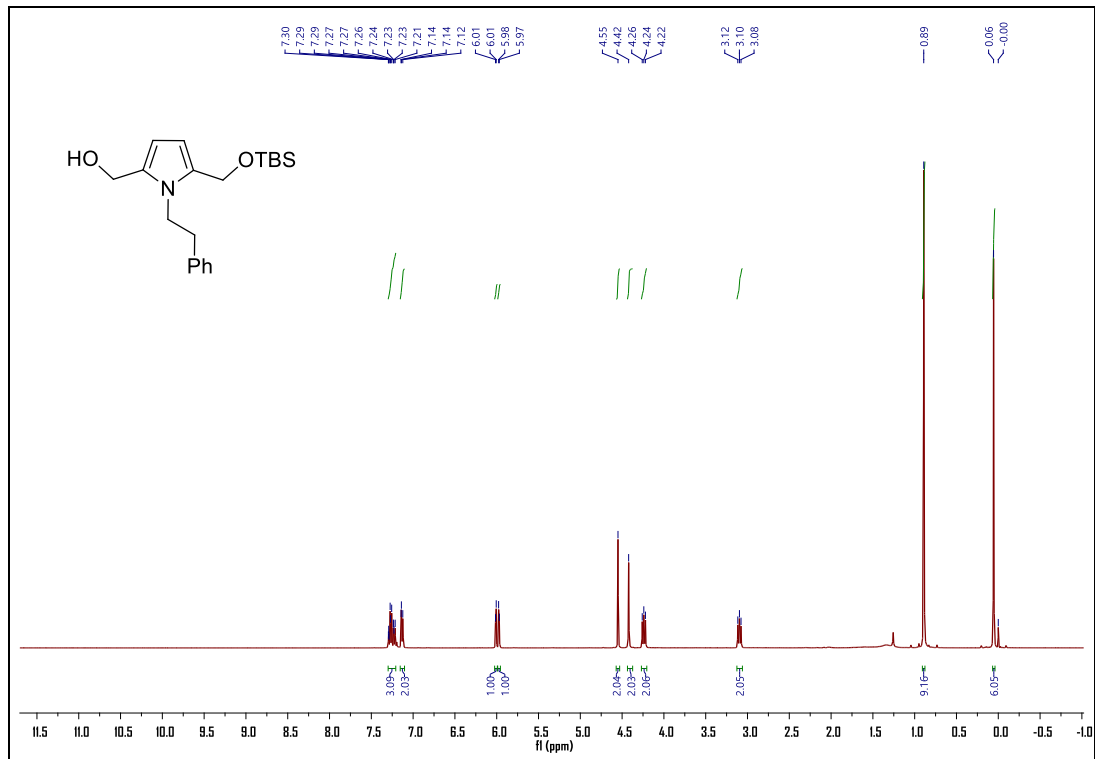
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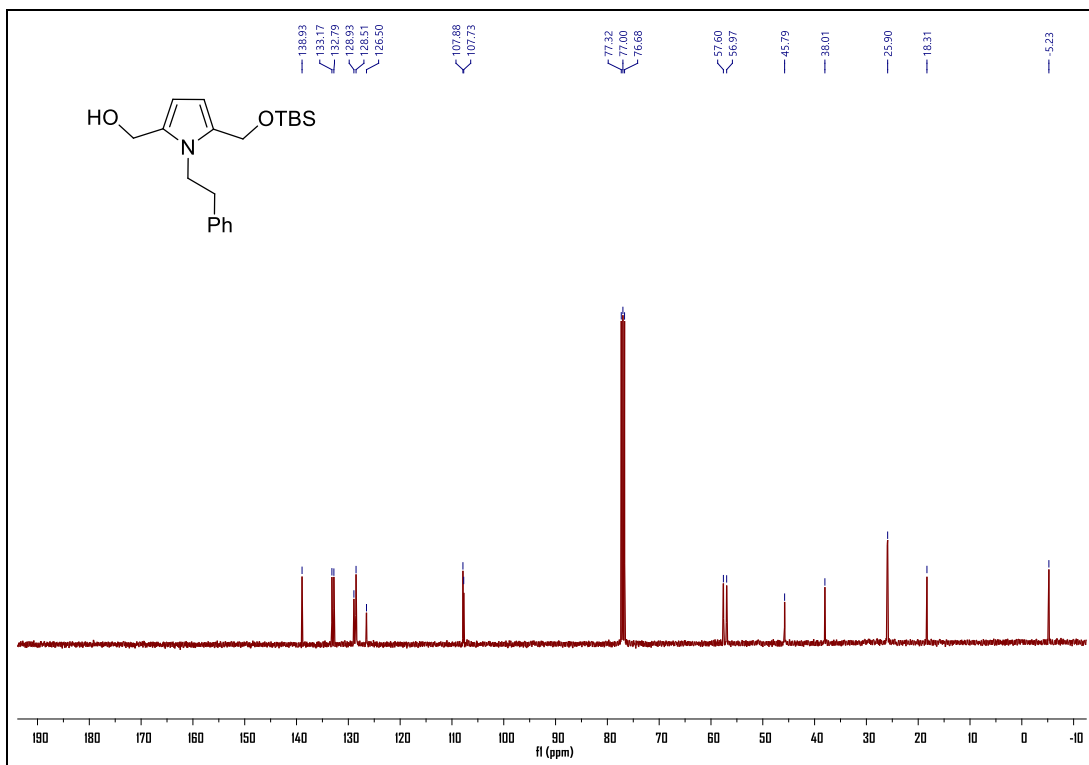
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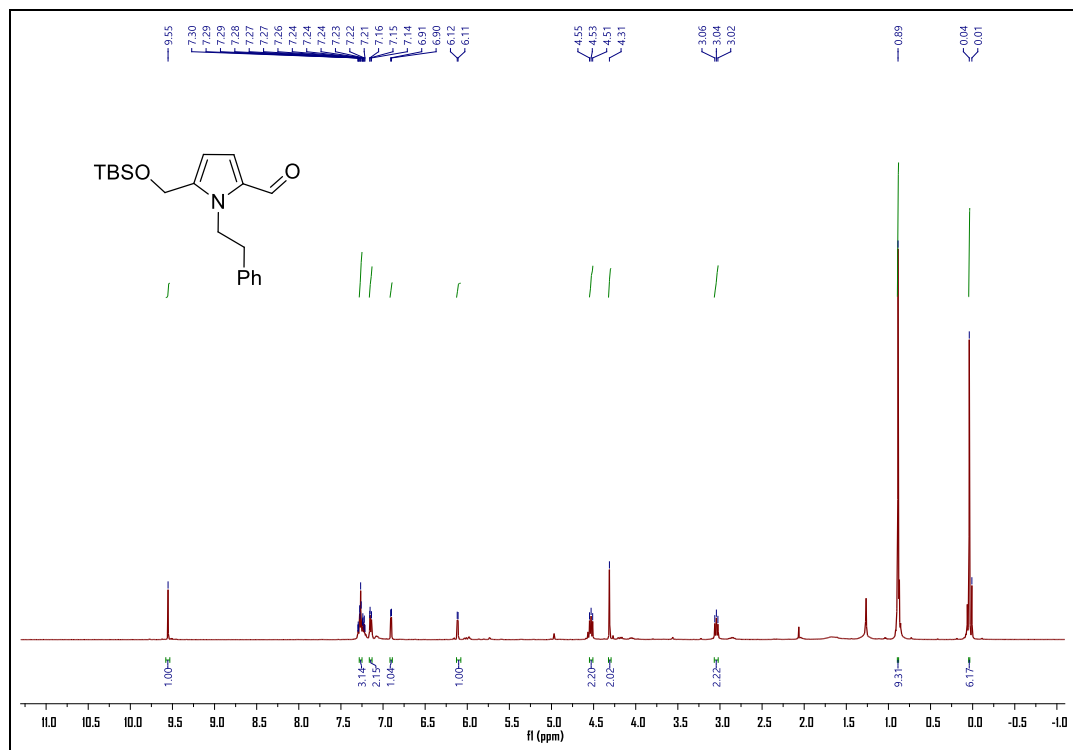
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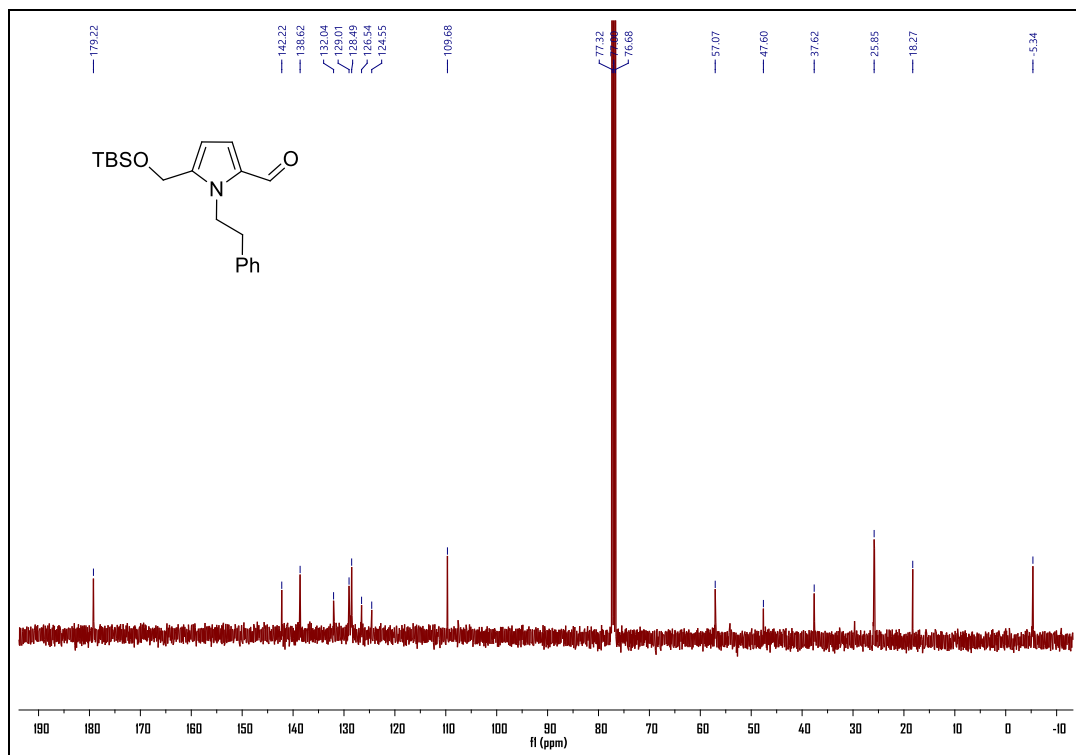
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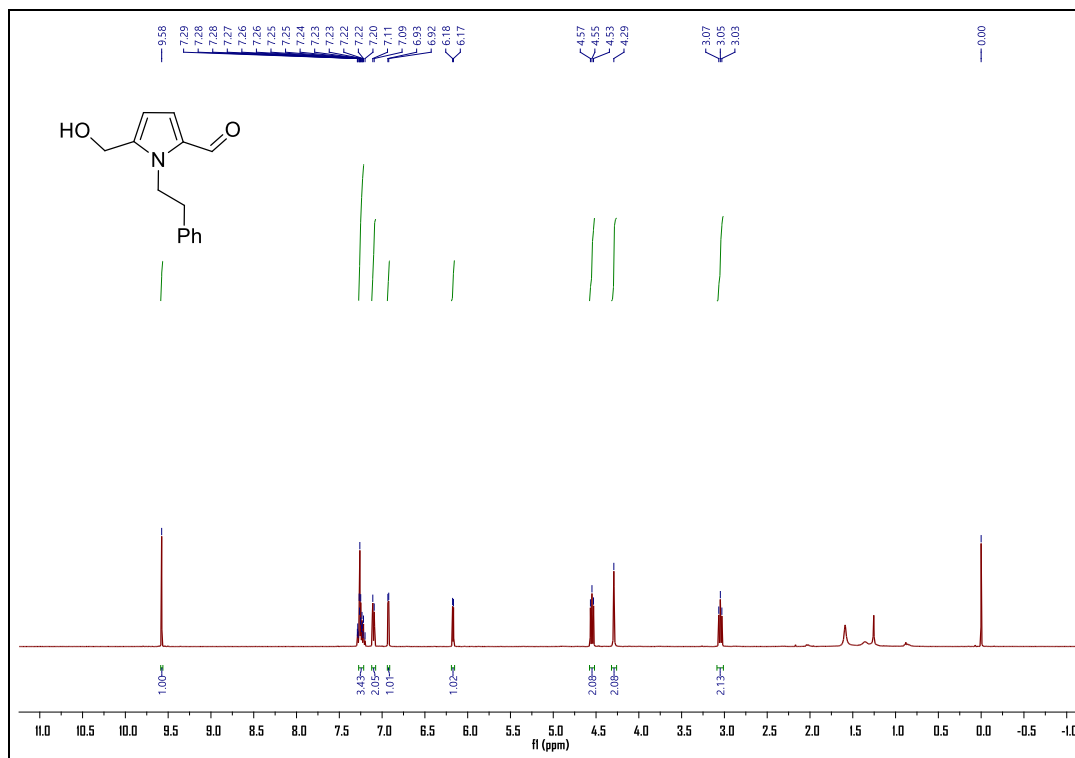
¹H NMR spectrum of 5-(((tert-butyldimethylsilyl)oxy)methyl)-1-phenethyl-1H-pyrrole-2-carbaldehyde (18):



¹³C NMR spectrum of 5-(((tert-butyldimethylsilyl)oxy)methyl)-1-phenethyl-1H-pyrrole-2-carbaldehyde (18):



¹H NMR spectrum of 5-(hydroxymethyl)-1-phenethyl-1H-pyrrole-2-carbaldehyde (19):



¹³C NMR spectrum of 5-(hydroxymethyl)-1-phenethyl-1H-pyrrole-2-carbaldehyde (19):

