

Supporting information :

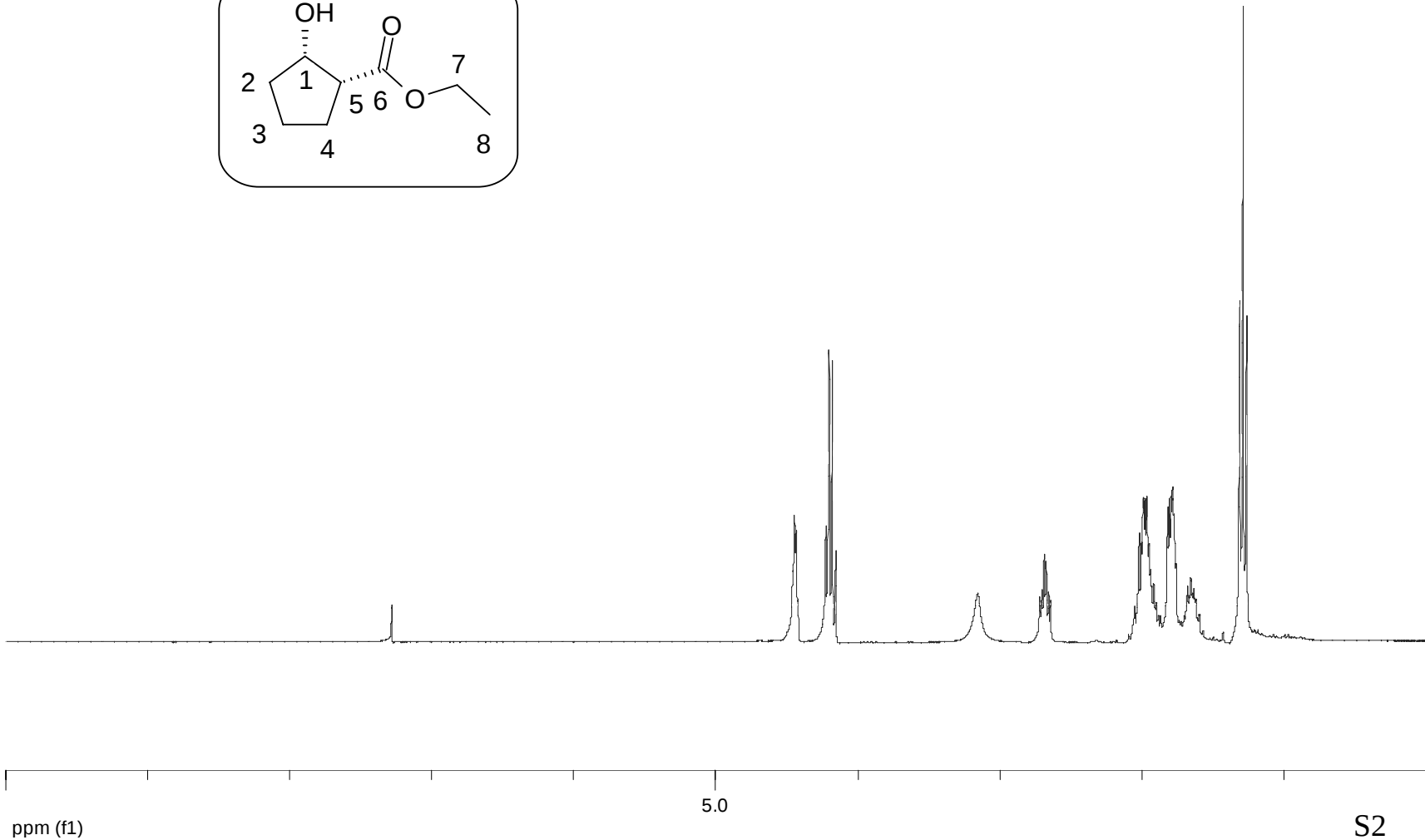
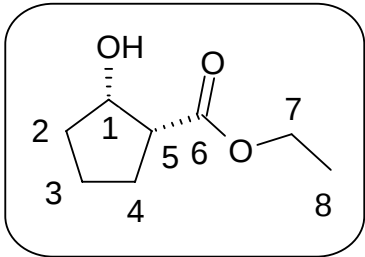
“First straightforward asymmetric synthesis of Ala- Ψ [CF=CH]-Pro, a proline-containing pseudodipeptides bearing a fluoroolefin as a peptide bond mimic”

Authors : Guillaume Dutheuil, Camille Pierry, Emilie Villiers, Samuel Couve-Bonnaire* and Xavier Pannecoucke*

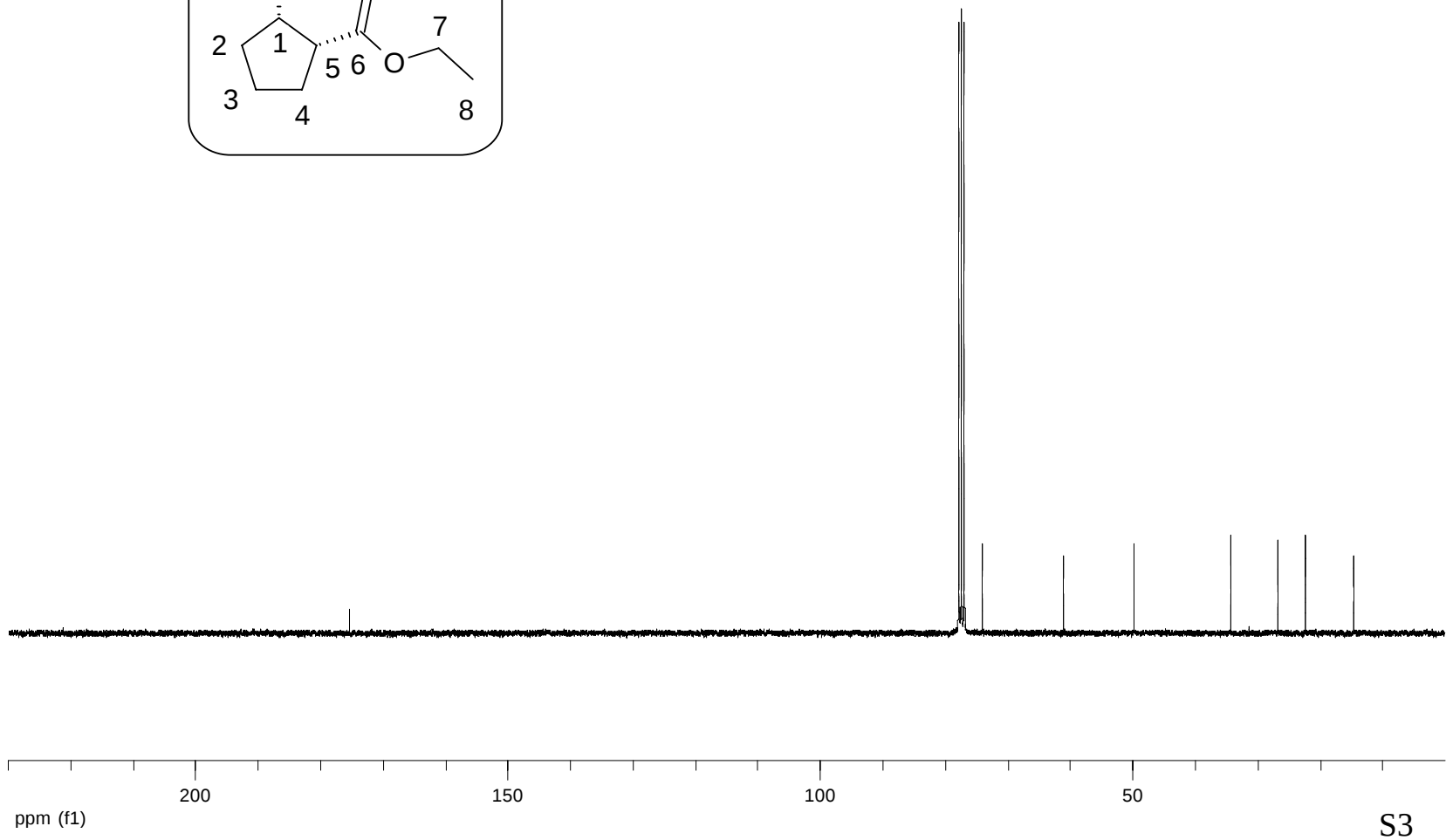
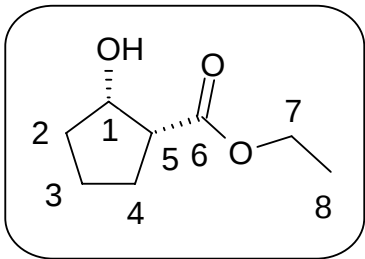
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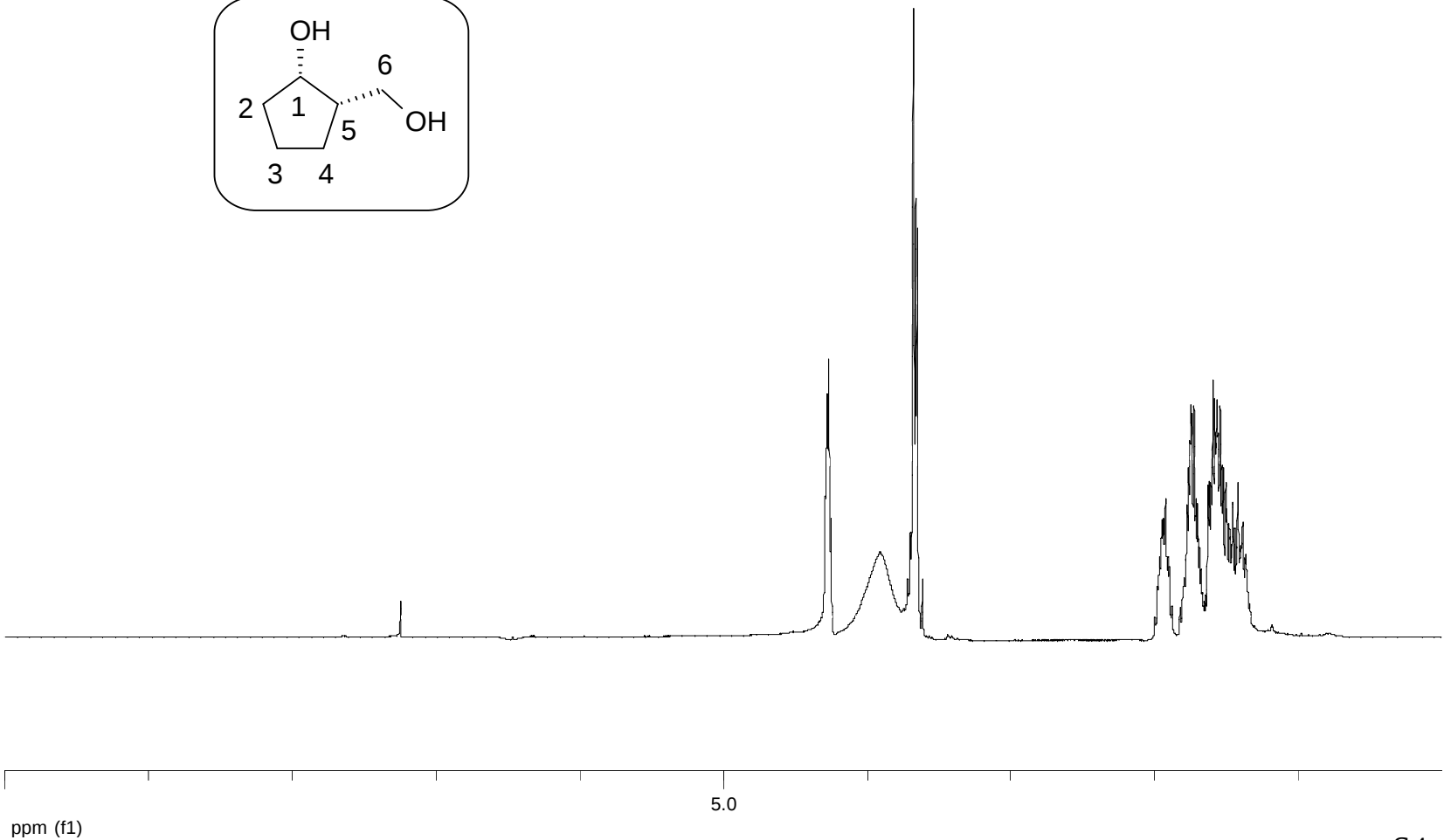
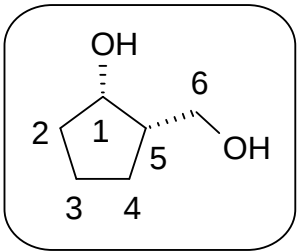
Compound 7: ¹H
Ethyl-2-(*S*)-hydroxy-(*R*)-cyclopentanecarboxylate



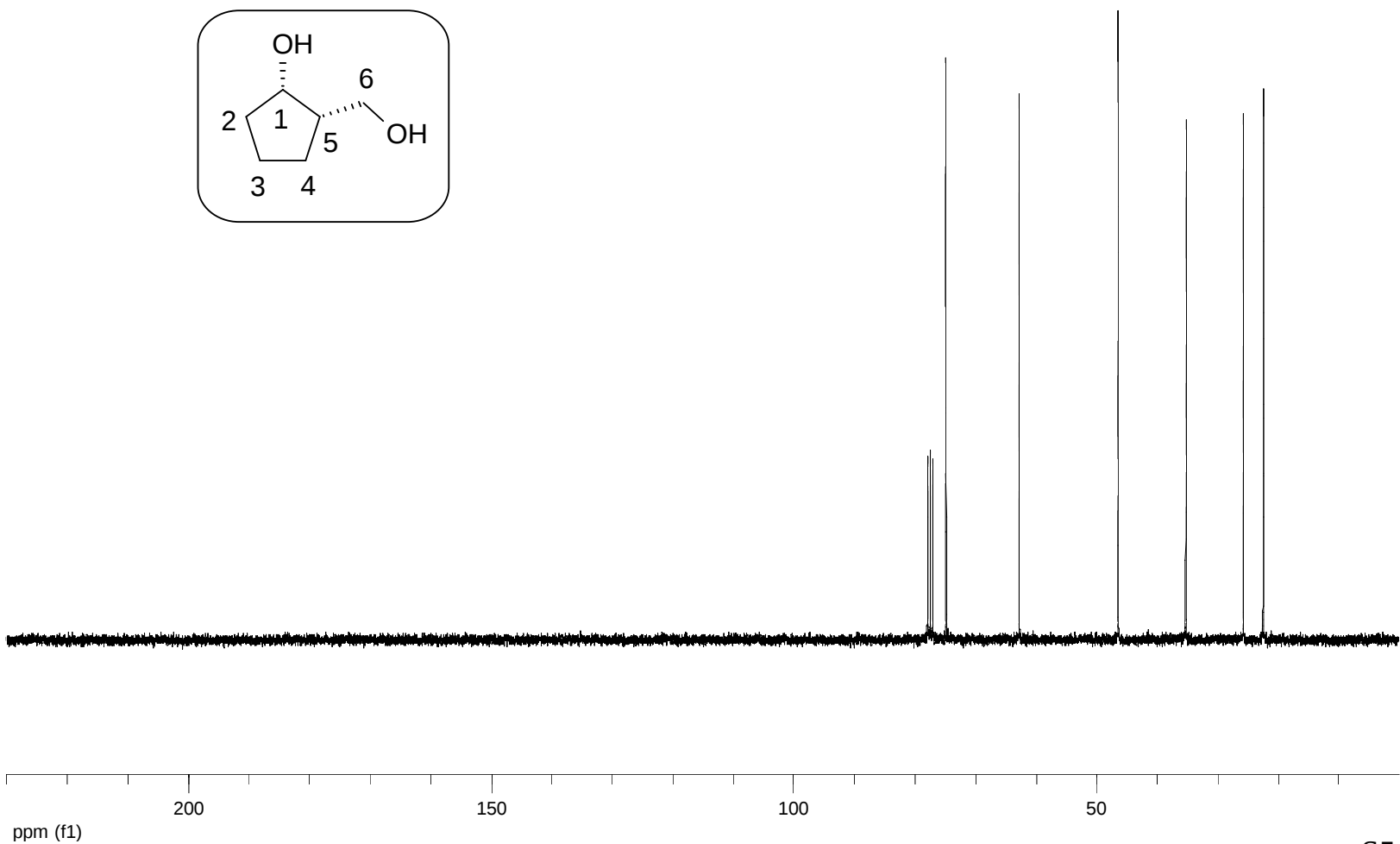
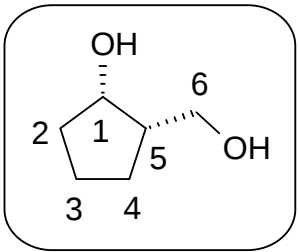
Compound 7: ¹³C
Ethyl-2-(*S*)-hydroxy-(*R*)-cyclopentanecarboxylate



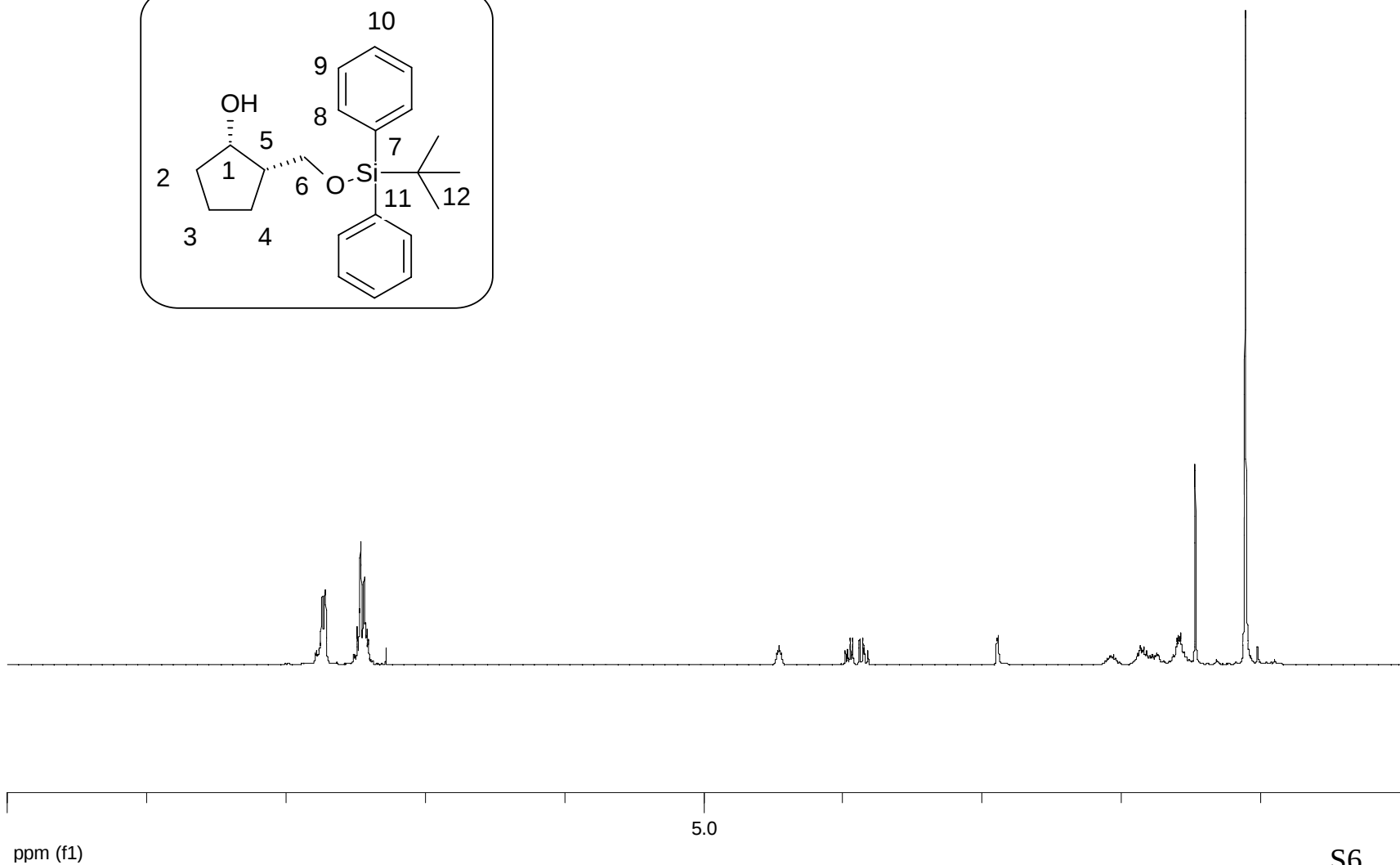
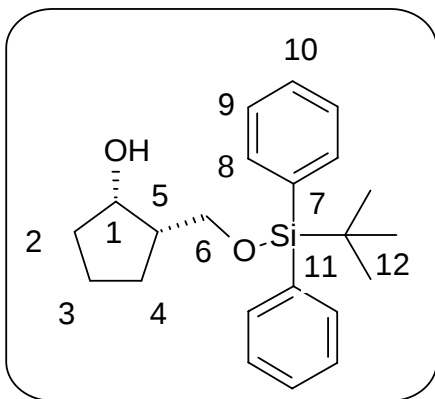
Compound 8: ^1H
(1*S*,2*S*)-2-Methanolhydroxycyclopentane



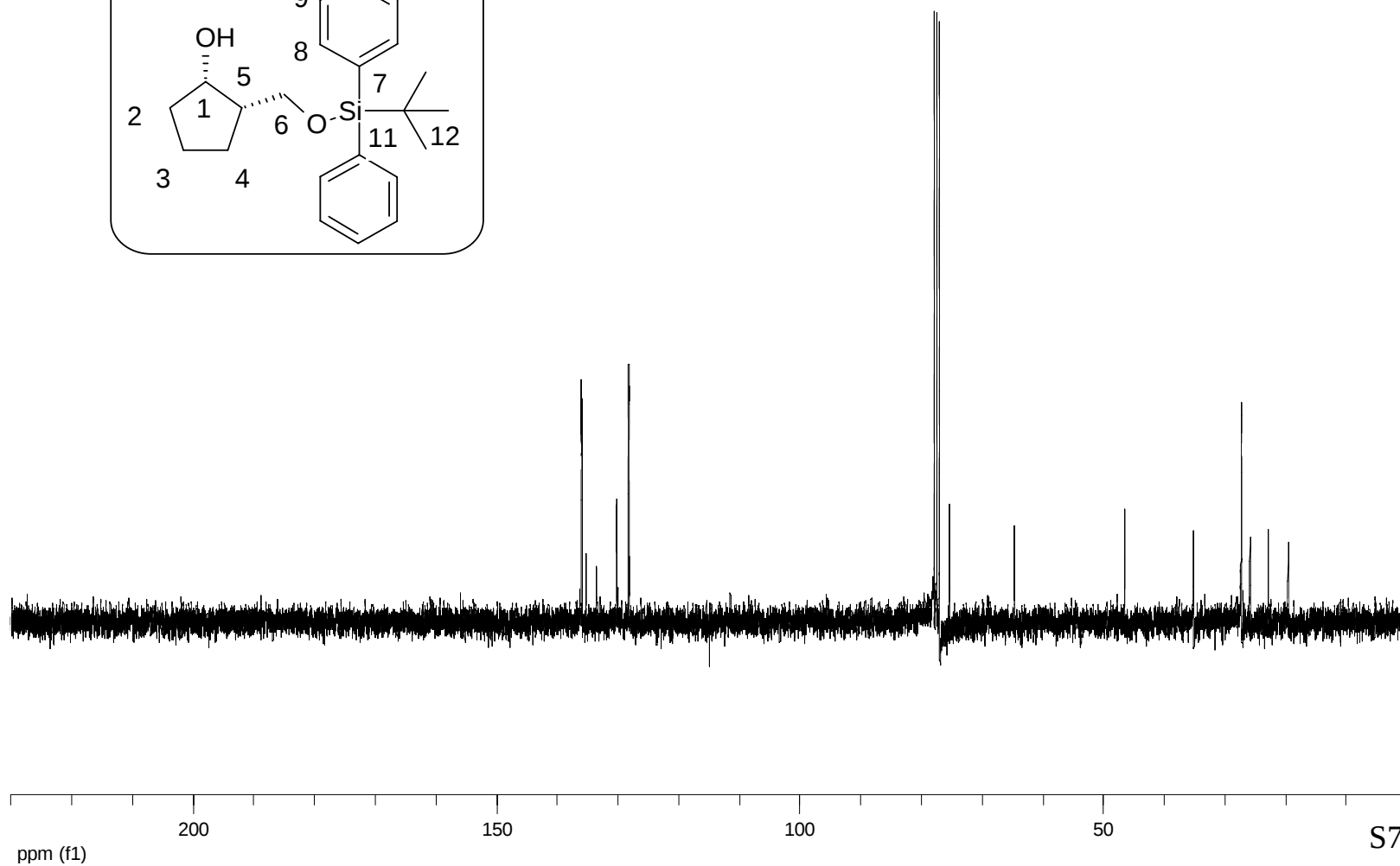
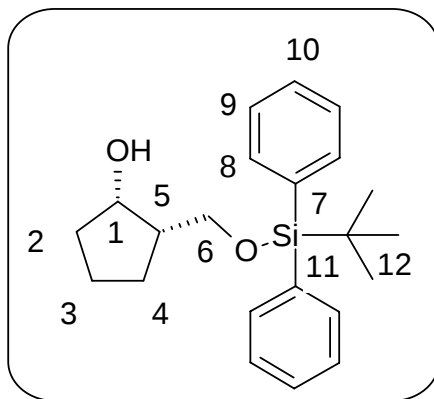
Compound 8: ^{13}C
(1*S*,2*S*)-2-Methanolhydroxycyclopentane



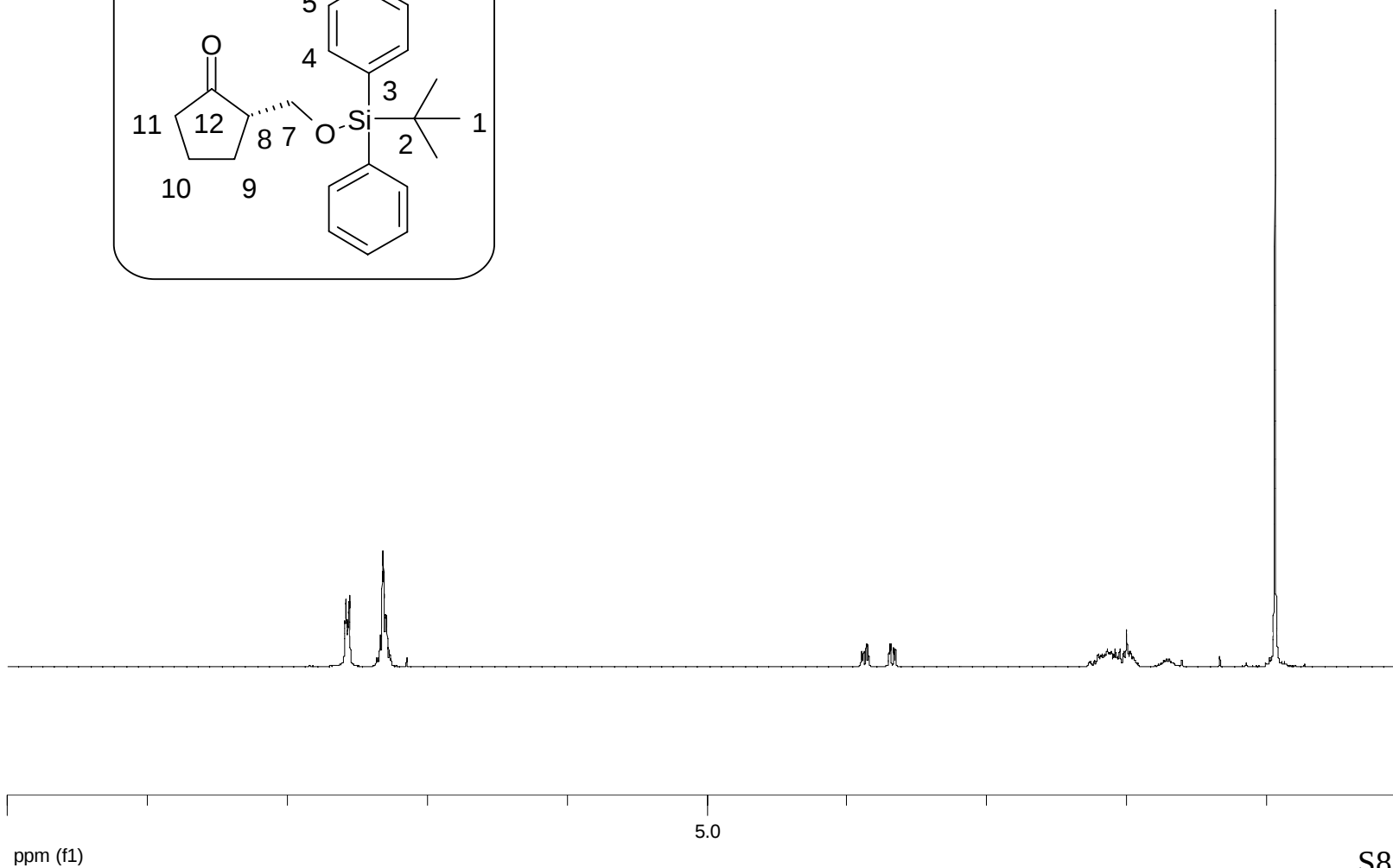
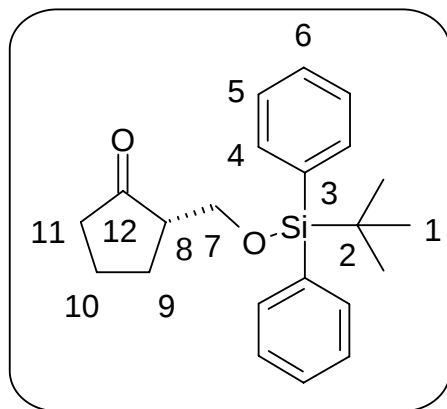
Compound 9: ^1H
2-(*S*)-(tert-Butyldiphenylsilyloxymethyl)-(*S*)-hydroxycyclopentane



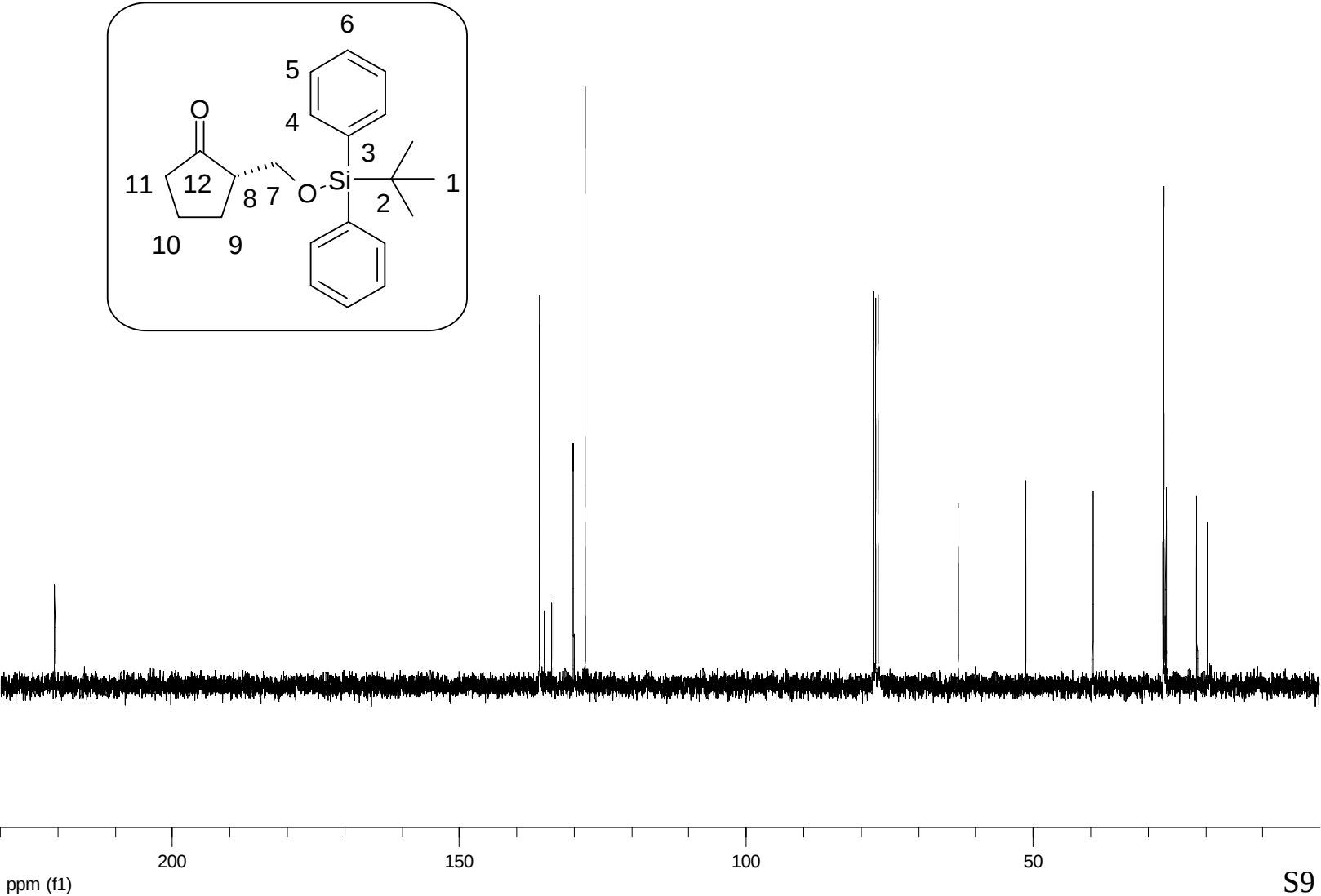
Compound 9: ^{13}C
2-(*S*)-(tert-Butyldiphenylsilyloxymethyl)-(*S*)-hydroxycyclopentane



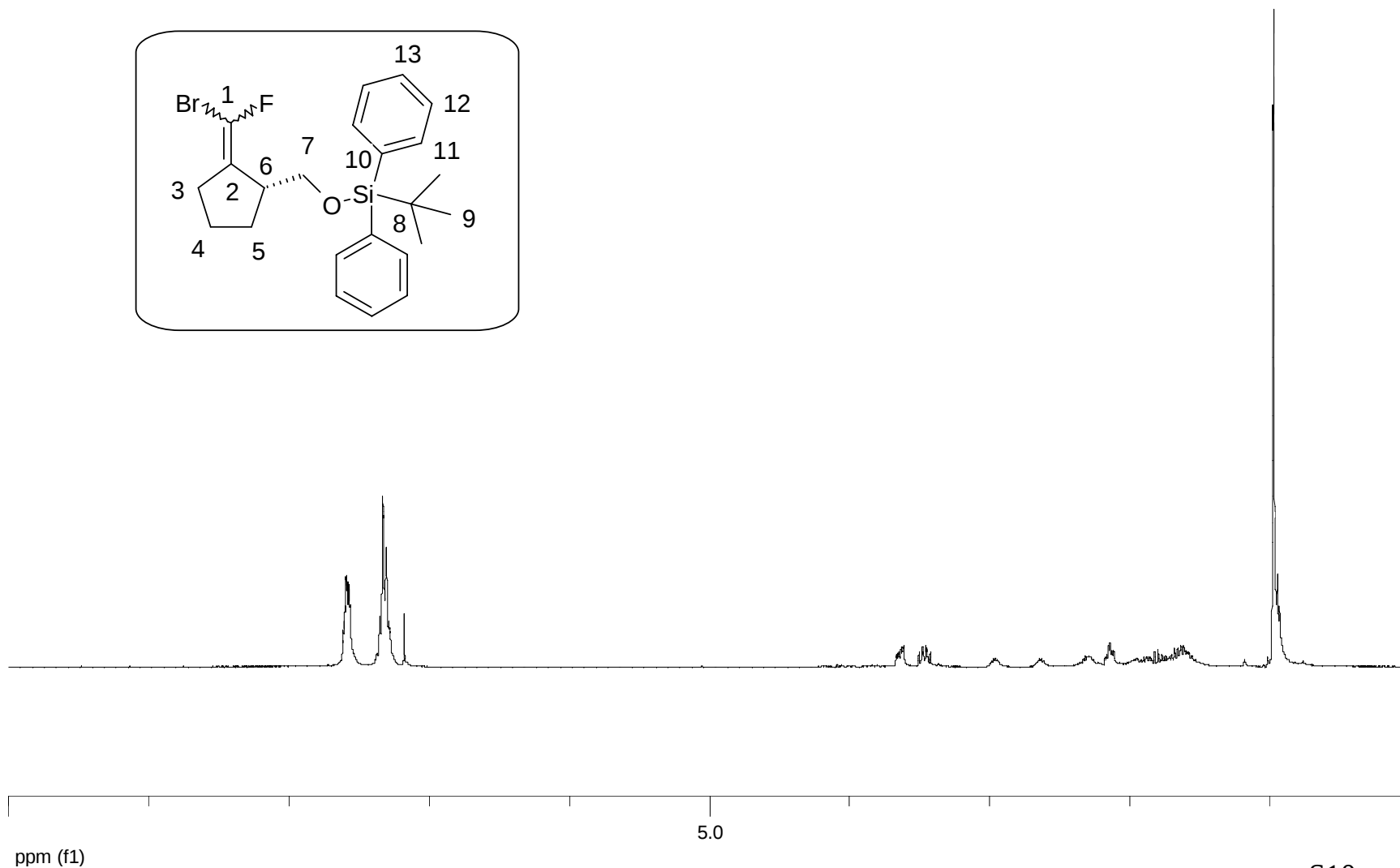
Compound 5: ^1H
2-(*S*)-(*tert*-Butyldiphenylsilyloxymethyl)cyclopentanone



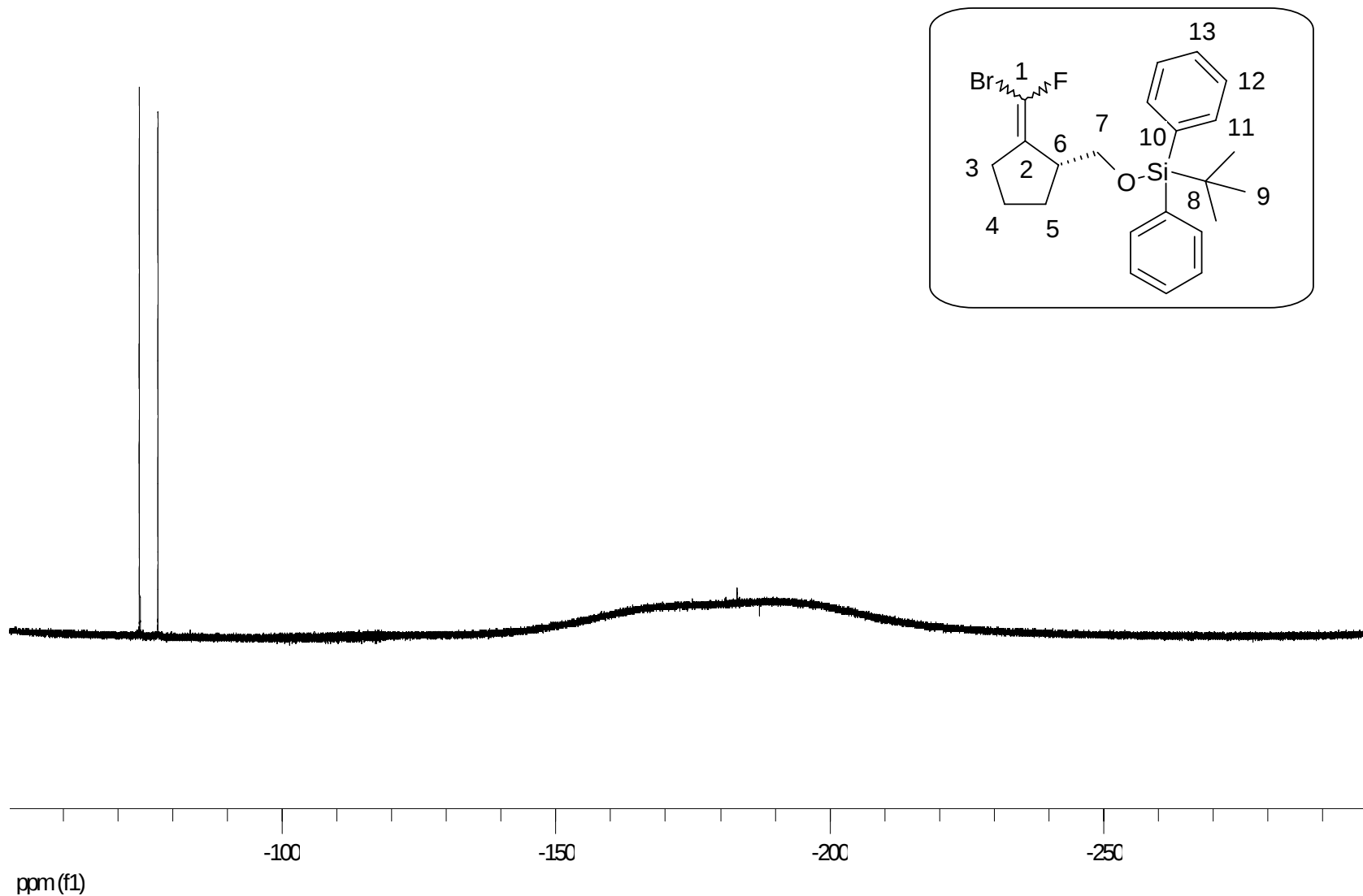
Compound 5: ¹³C
2-(S)-(tert-Butyldiphenylsilyloxymethyl)cyclopentanone



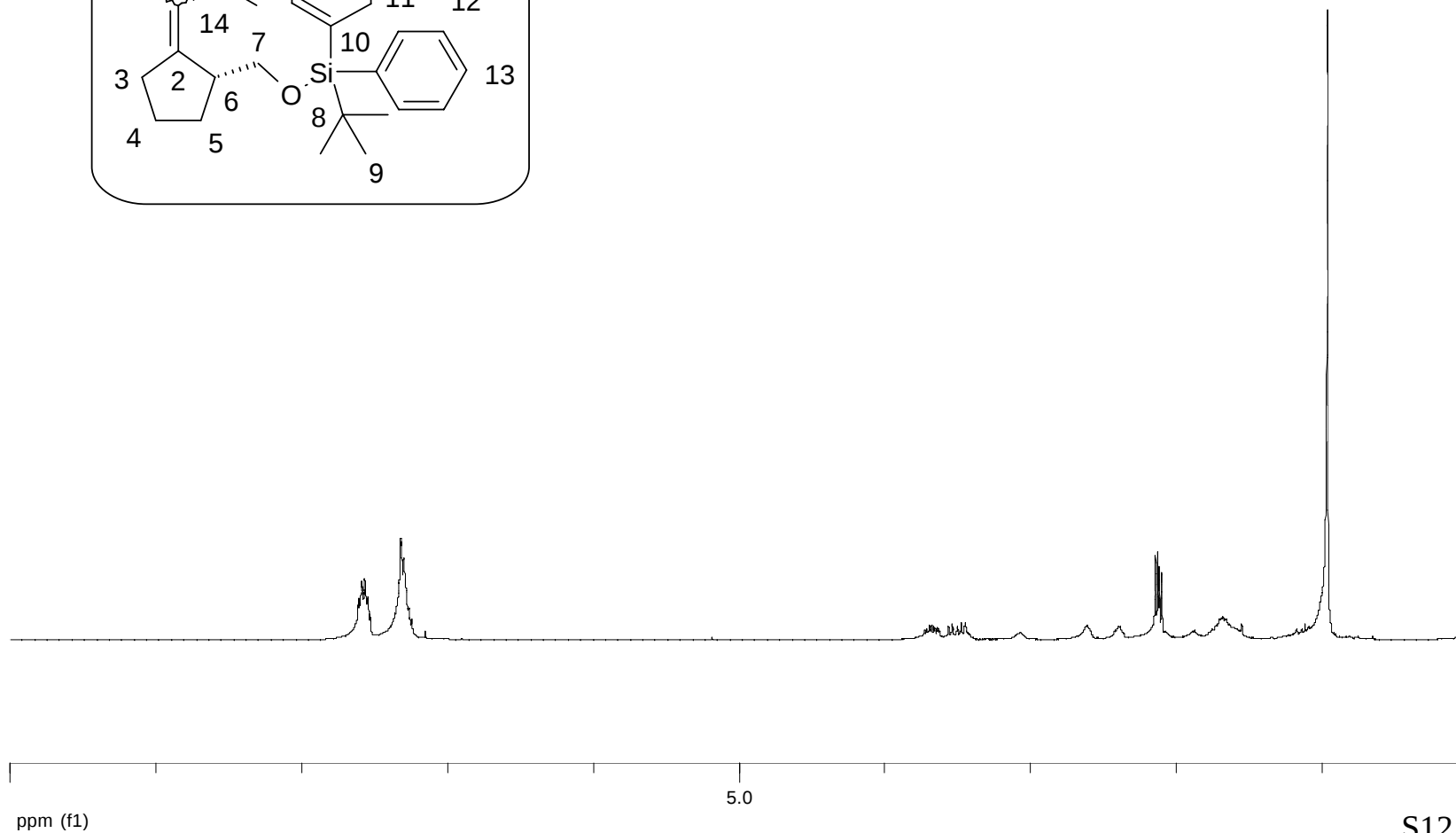
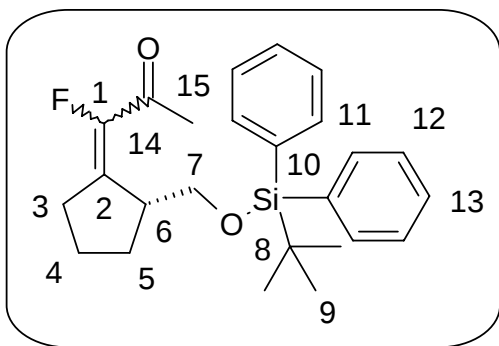
Compound 4: ^1H
(*Z*) & (*E*) ((2-(Bromofluoromethylene)cyclopentyl)-(*R*)-methoxy)*tert*-butyldiphenylsilane



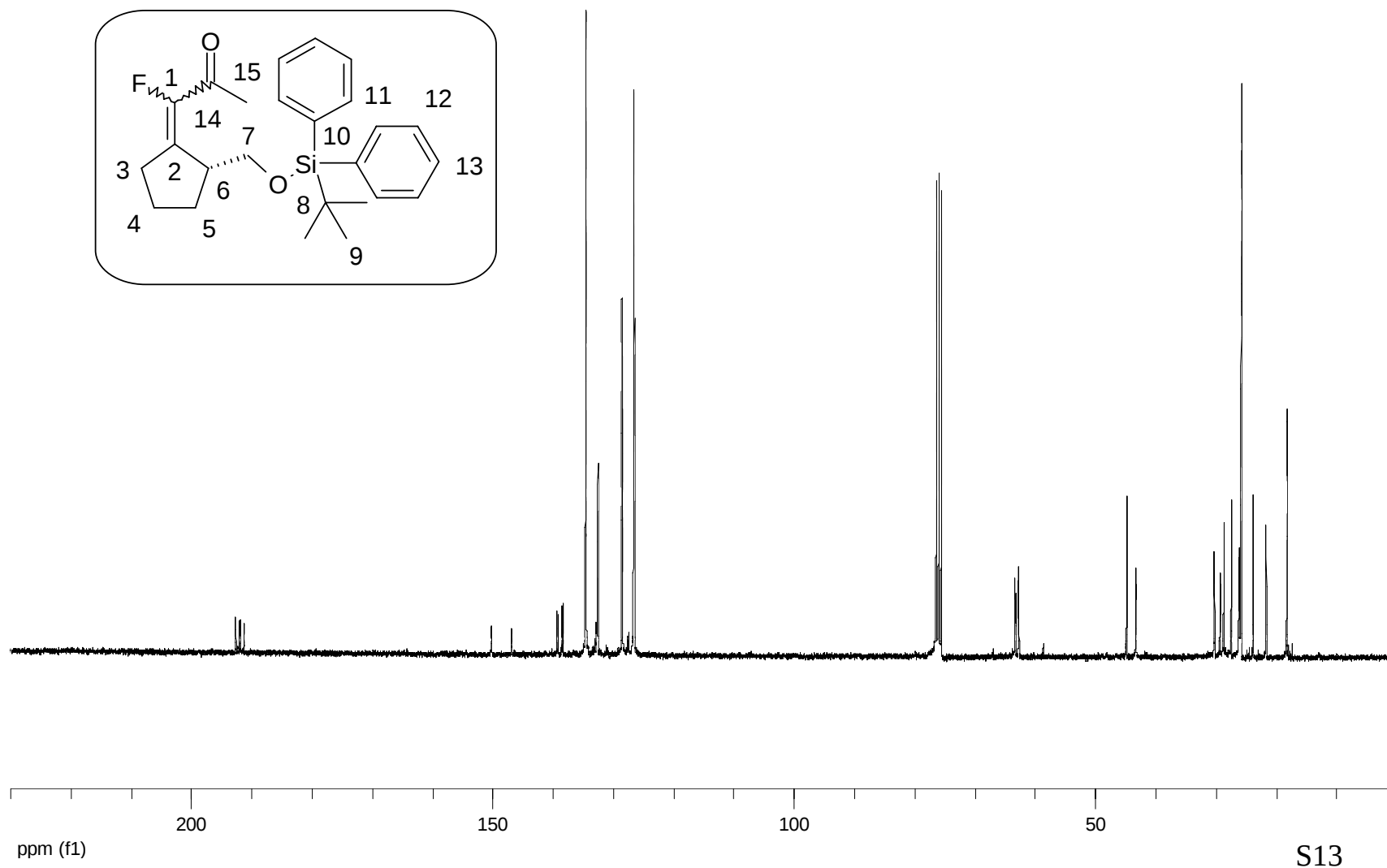
Compound 4: ^{19}F
(*Z*) & (*E*) ((2-(Bromofluoromethylene)cyclopentyl)-(*R*)-methoxy)*tert*-butyldiphenylsilane



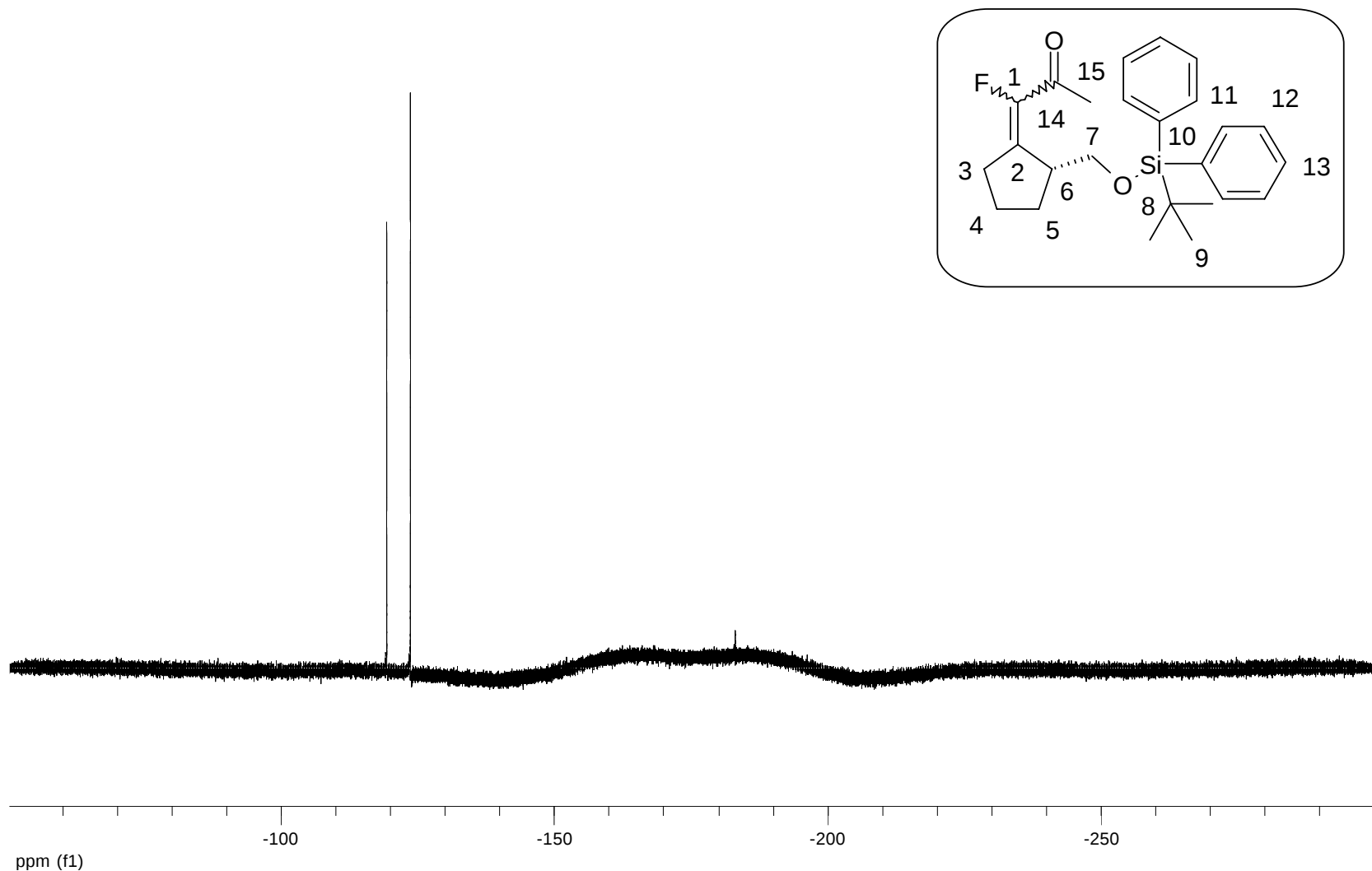
Compound 3: ^1H
(*Z*) & (*E*) 1-(2-(*R*)-Methoxy*tert*-butyldiphenylsilane)-cyclopentylidene-1-fluoropropan-2-one



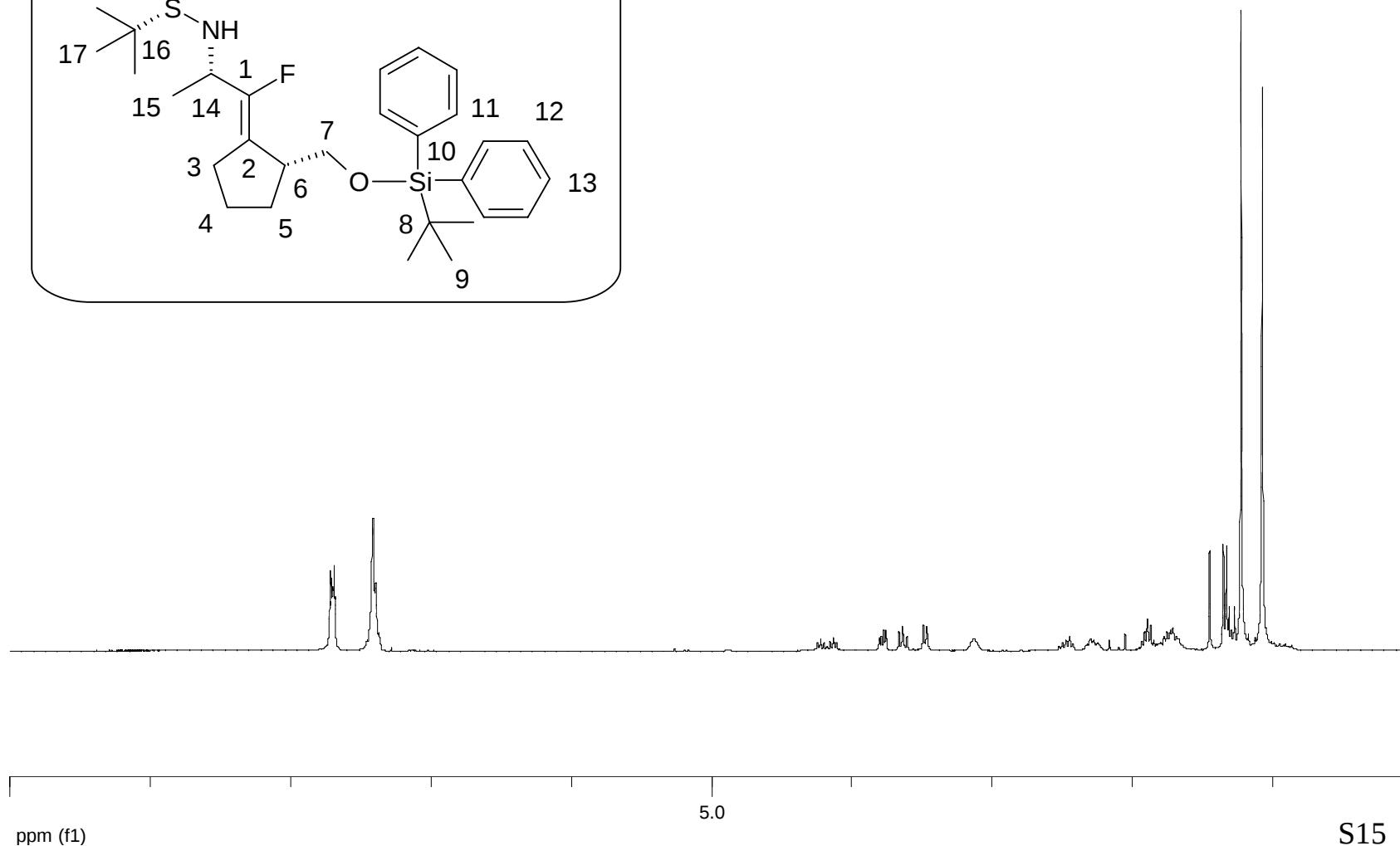
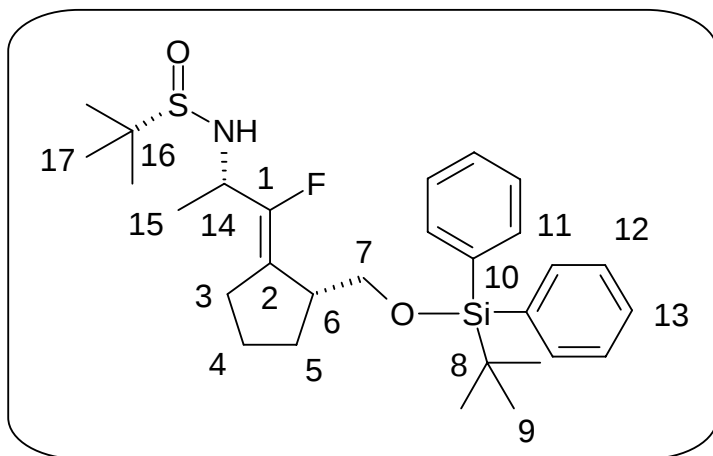
Compound 3: ^{13}C
(*Z*) & (*E*) 1-(2-(*R*)-Methoxy*tert*-butyldiphenylsilane)-cyclopentylidene-1-fluoropropan-2-one



Compound 3: ^{19}F
(*Z*) & (*E*) 1-(2-(*R*)-Methoxy*tert*-butyldiphenylsilane)-cyclopentylidene-1-fluoropropan-2-one

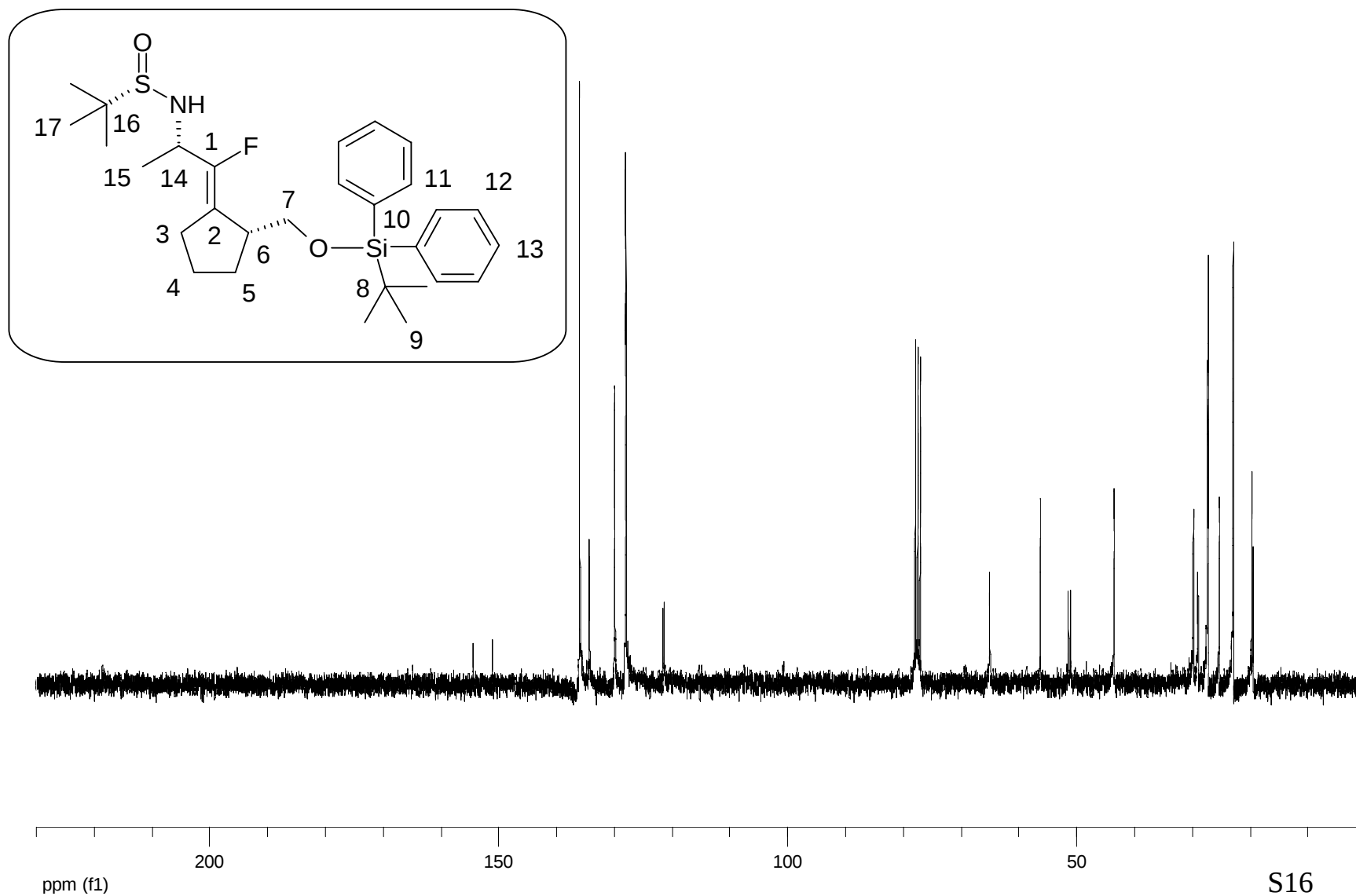


Compound (Z)-2: ¹H
**(Z) 1-(2(R)-Methoxytert-butylidiphenylsilane)-cyclopentylidene-1-fluoro propan-2(S)-yl-
2(S)-tert-butylsulfonamide**

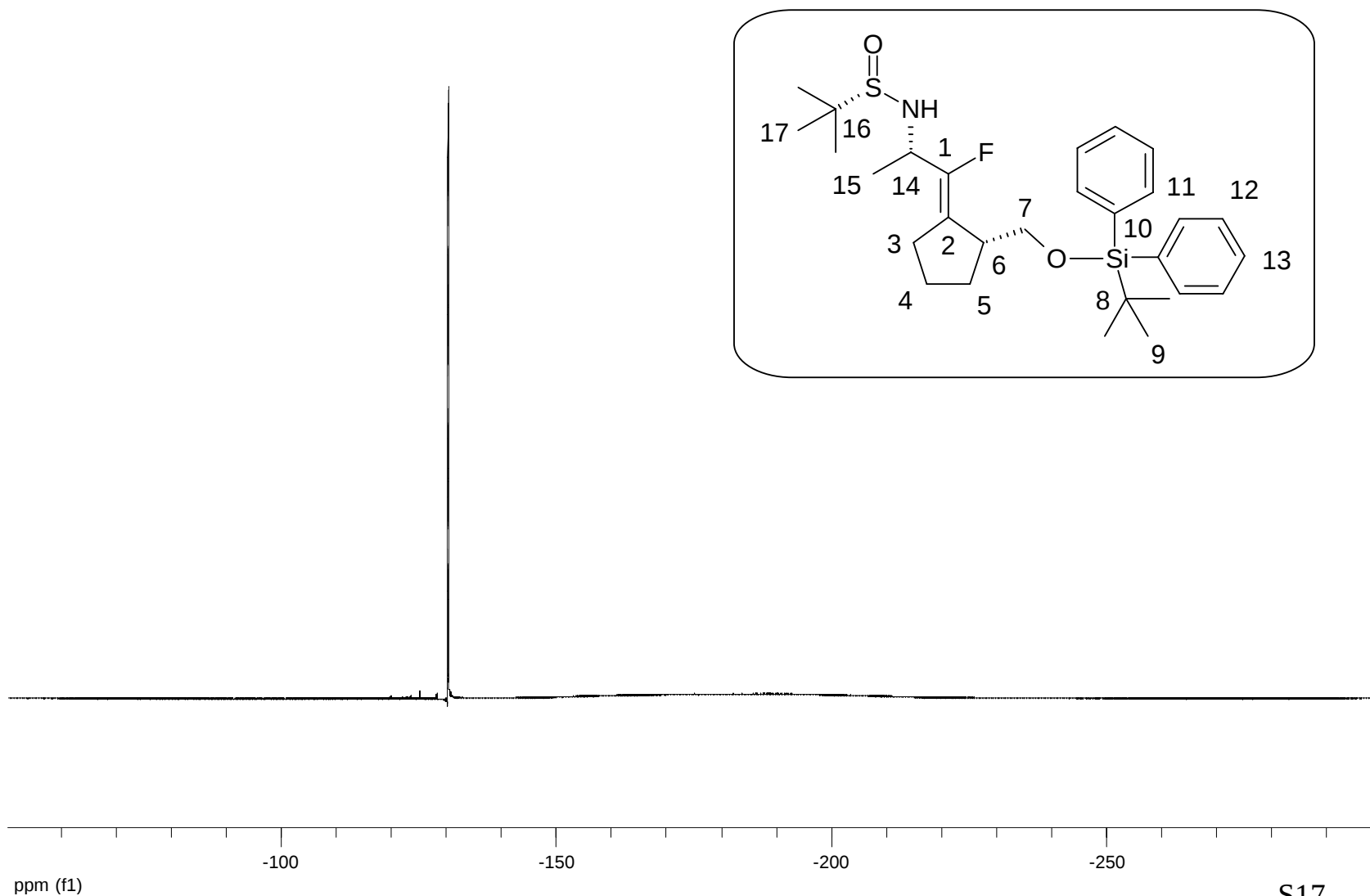


Compound (Z)-2: ¹³C

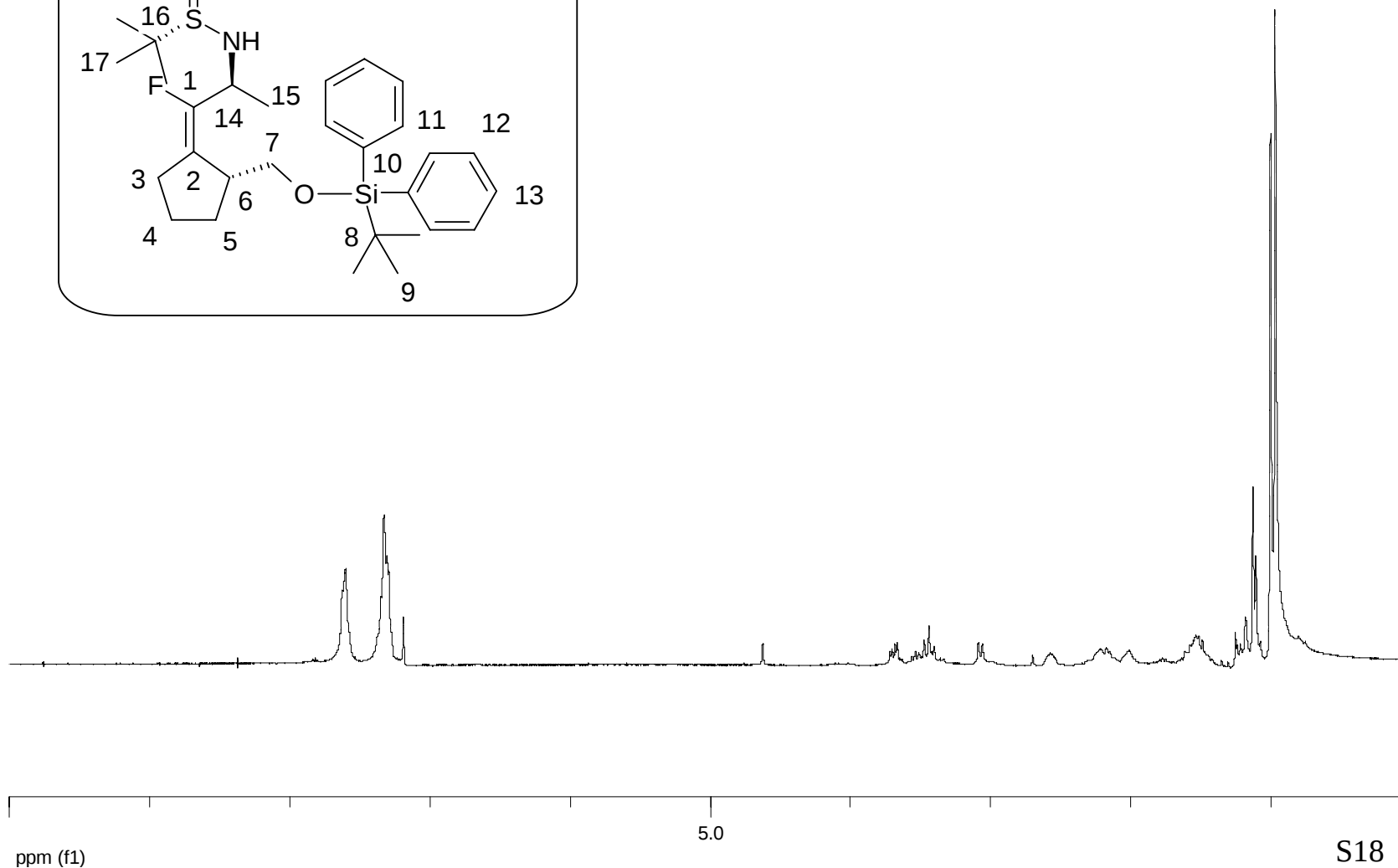
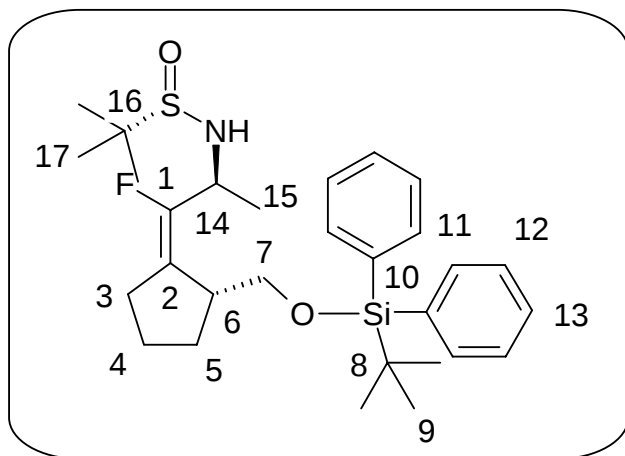
**(Z) 1-(2(R)-Methoxytert-butyl)diphenylsilane)-cyclopentylidene-1-fluoro propan-2(S)-yl-
2(S)-tert-butylsulfinamide**



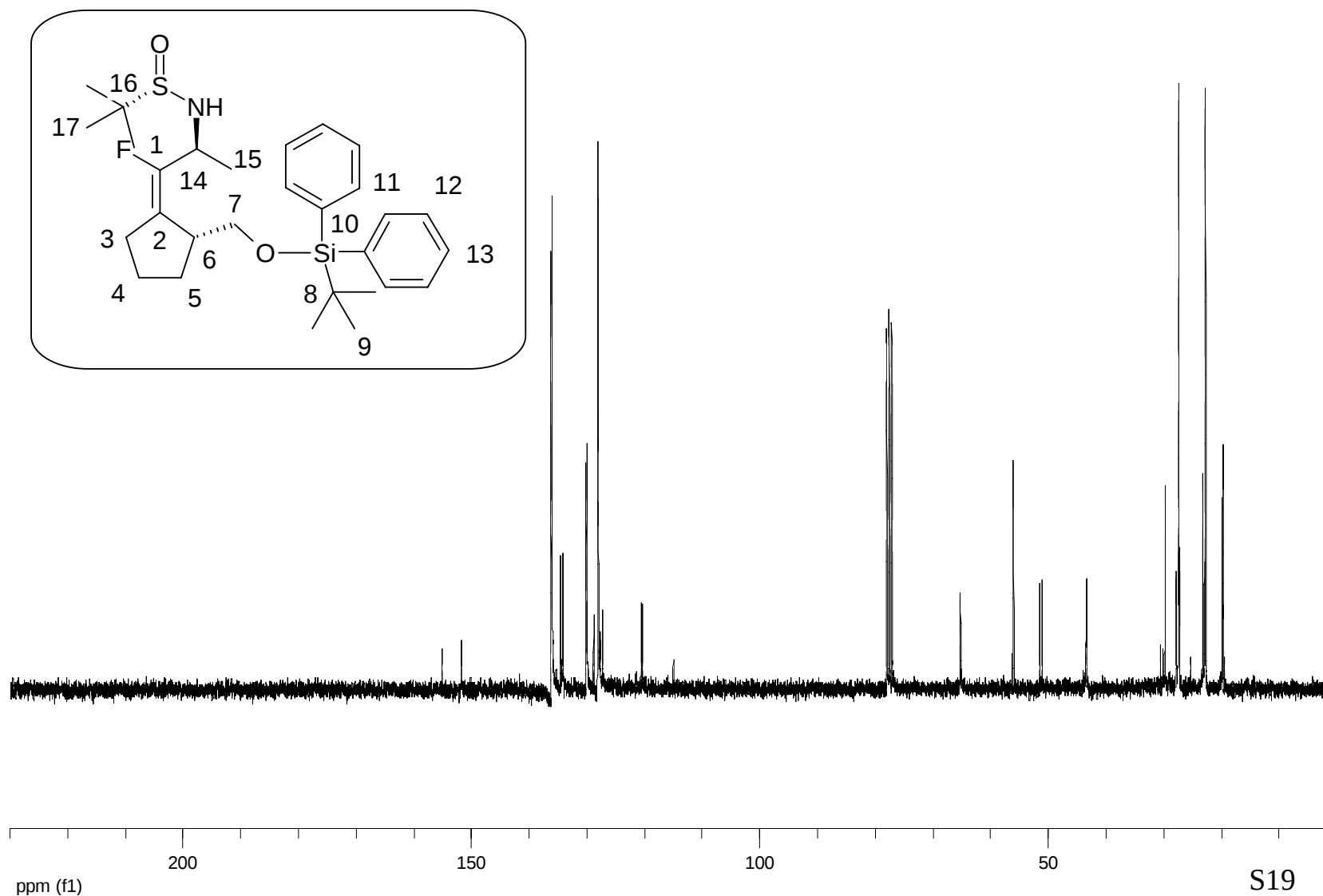
Compound (Z)-2: ^{19}F
**(Z) 1-(2(R)-Methoxytert-butyl)diphenylsilane)-cyclopentylidene-1-fluoro propan-2(S)-yl-
2(S)-tert-butylsulfonamide**



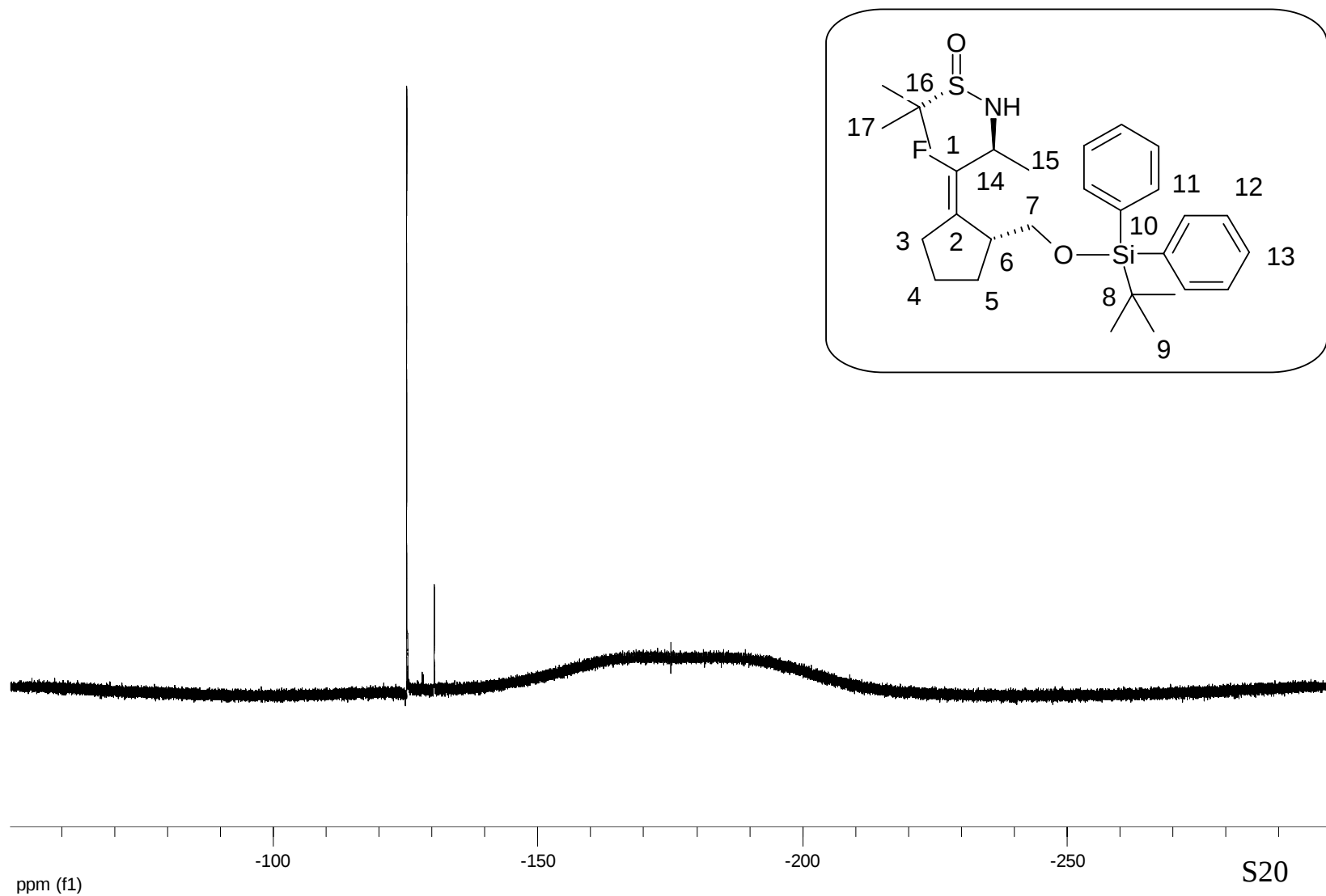
Compound (E)-2: ¹H
(E) 1-(2(R)-Methoxytert-butylidiphenylsilane)-cyclopentylidene-1-fluoro propan-2(S)-yl-2(S)-tert-butylsulfonamide



Compound (E)-2: ¹³C
(E) 1-(2(R)-Methoxytert-butylidiphenylsilane)-cyclopentylidene-1-fluoro propan-2(S)-yl-2(S)-tert-butylsulfinamide

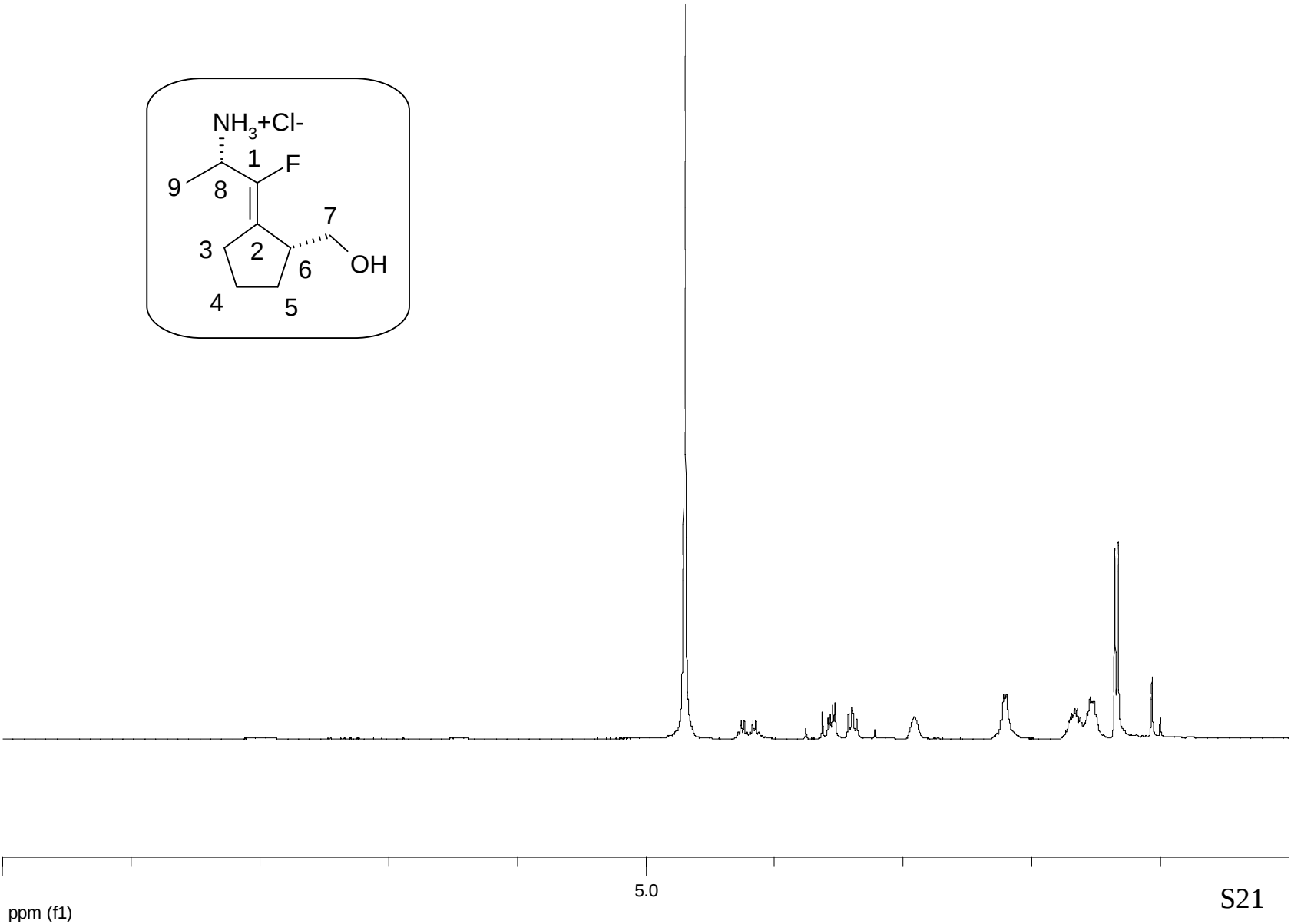
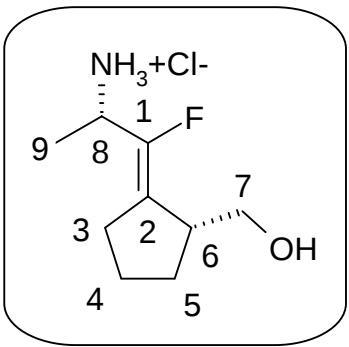


Compound (E)-2: ^{19}F
(E) 1-(2(R)-Methoxy*tert*-butyldiphenylsilane)-cyclopentylidene-1-fluoro propan-2(S)-yl-2(S)-*tert*-butylsulfonamide



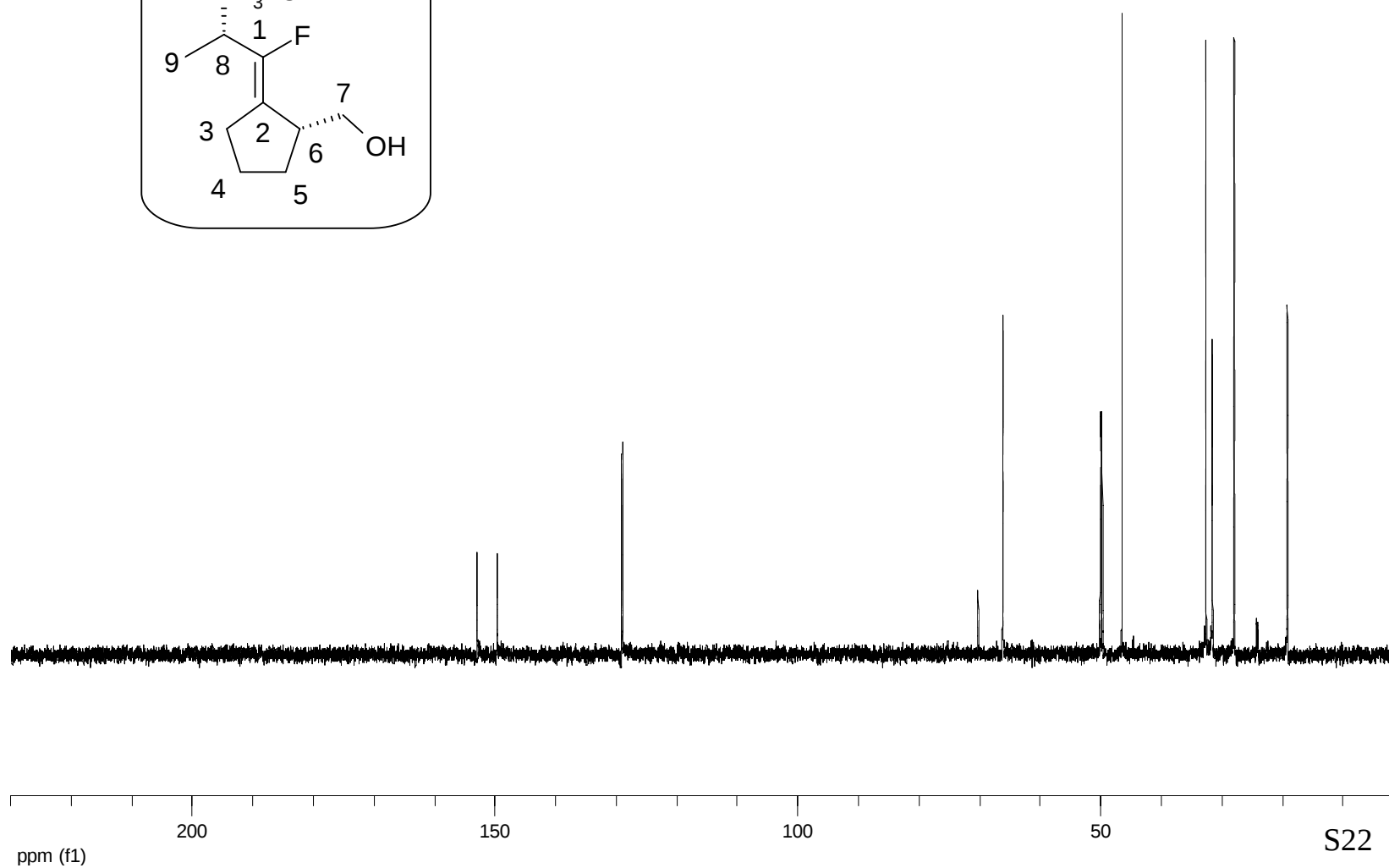
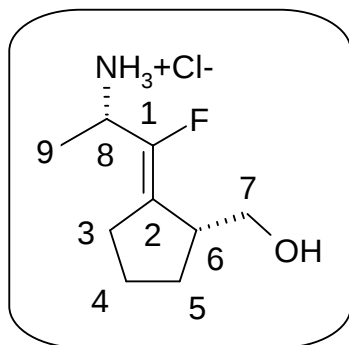
Compound (Z)-10: ¹H

(Z) 1-fluoro-1-(2(R)-(hydroxymethyl)cyclopentylidene)-2(S)-amino propane hydrochloride



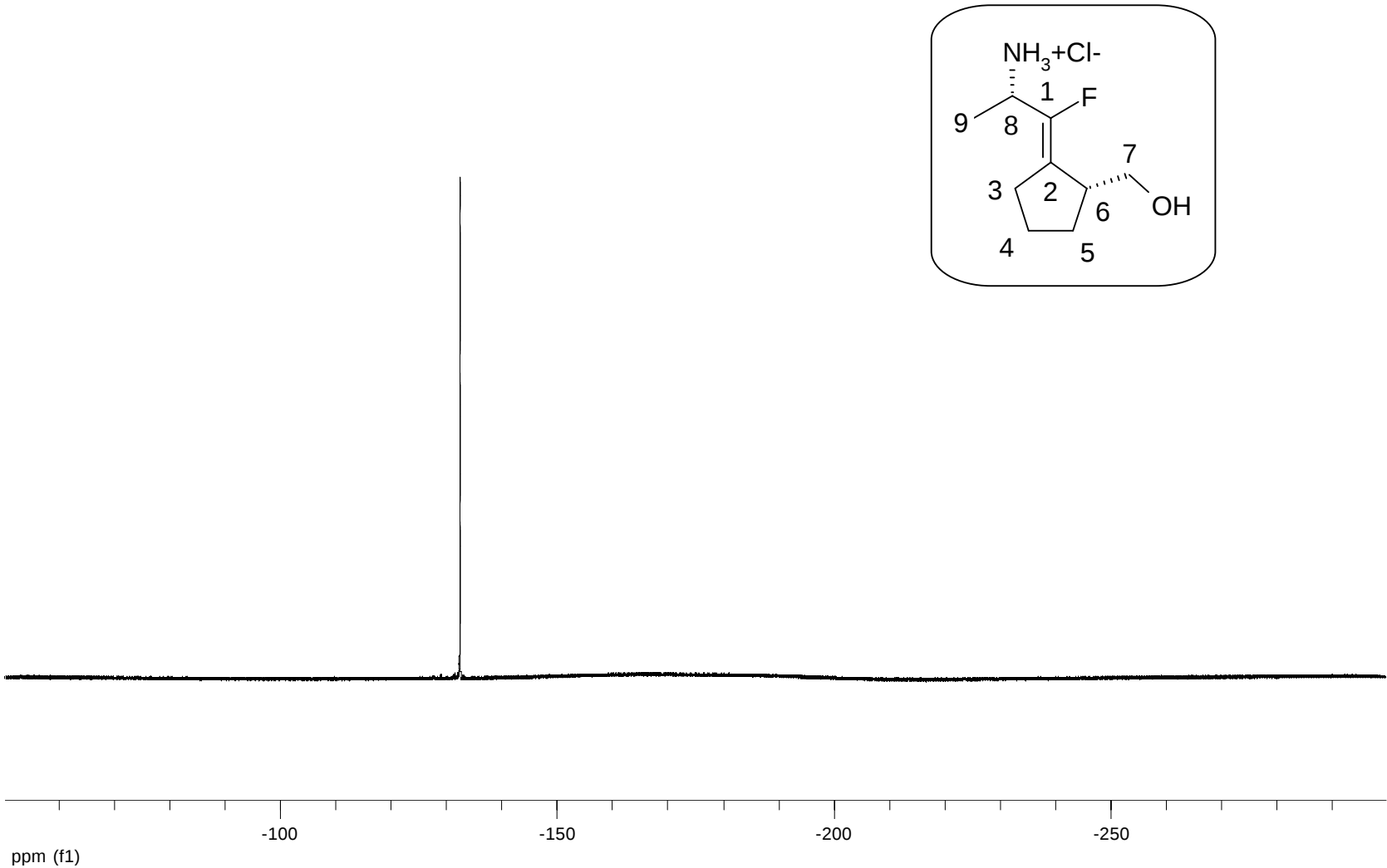
Compound (Z)-10: ^{13}C

(Z) 1-fluoro-1-(2(R)-(hydroxymethyl)cyclopentylidene)-2(S)-amino propane hydrochloride

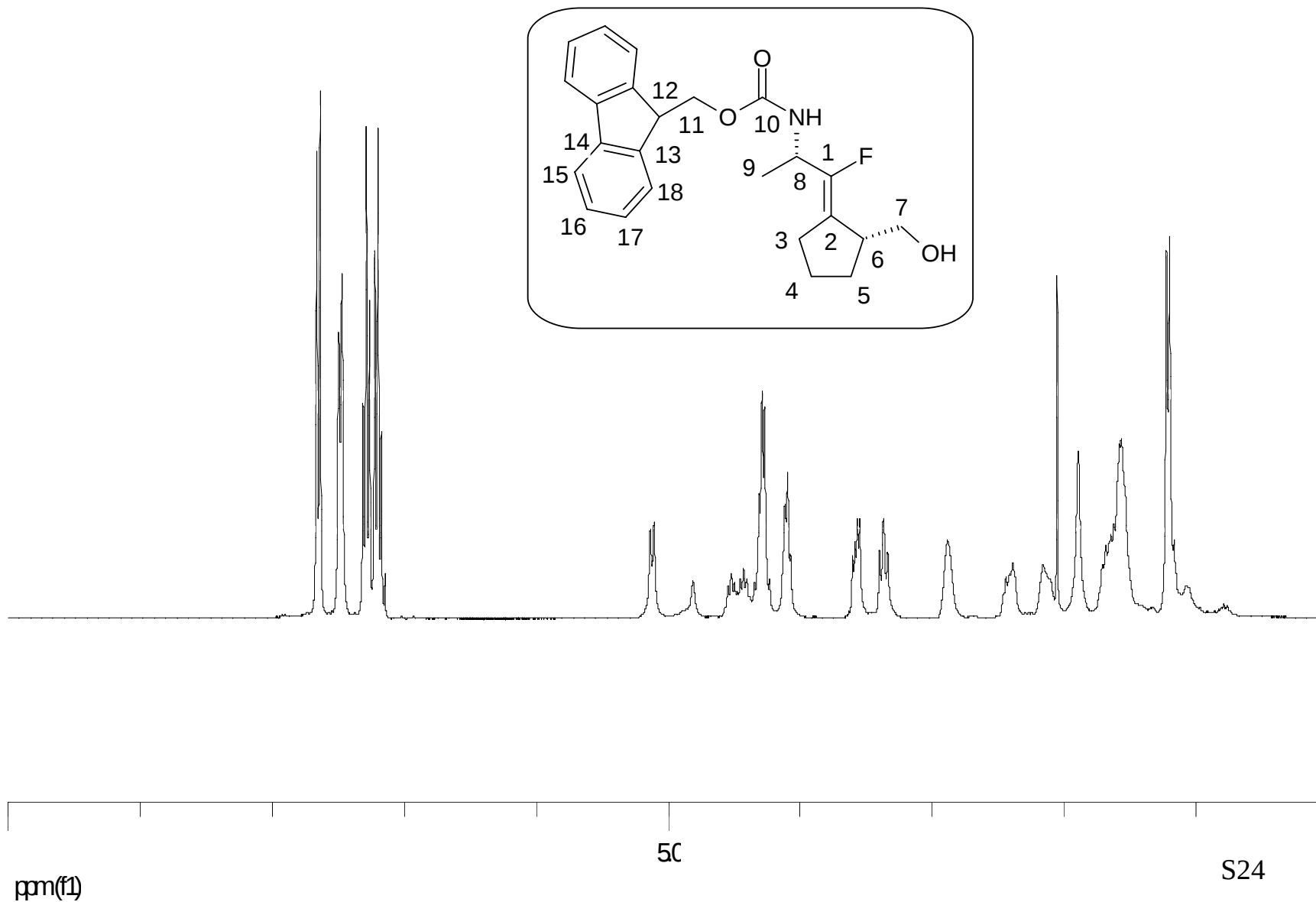


Compound (Z)-10: ¹⁹F

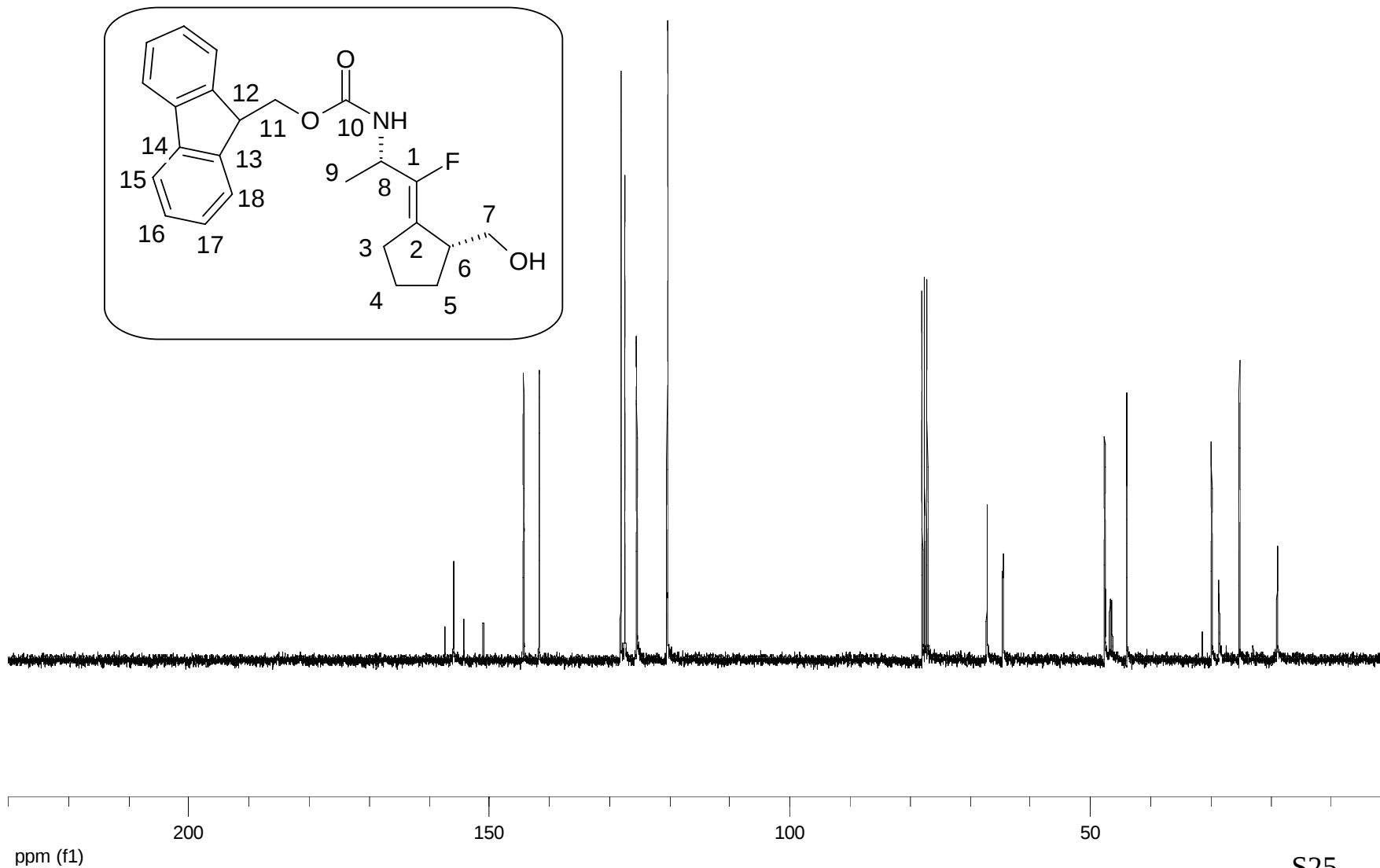
(Z) 1-fluoro-1-(2(R)-(hydroxymethyl)cyclopentylidene)-2(S)-amino propane hydrochloride



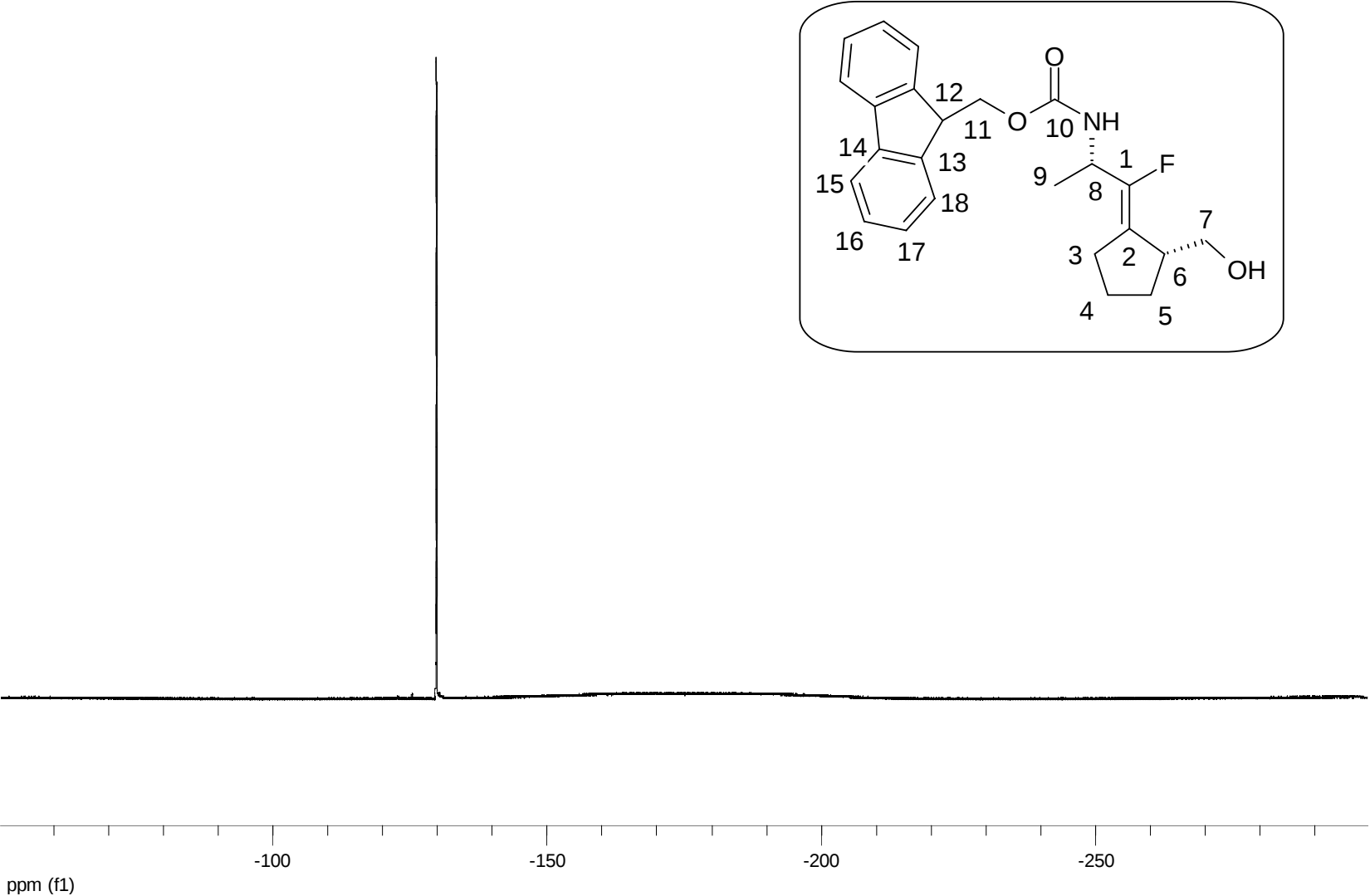
Compound (Z)-11 : ^1H
**(Z) *N*-Fluorenylmethoxycarbonyl-1-fluoro-1-(2(*R*)-(hydroxymethyl)
cyclopentylidene)-2(*S*)-aminopropane**



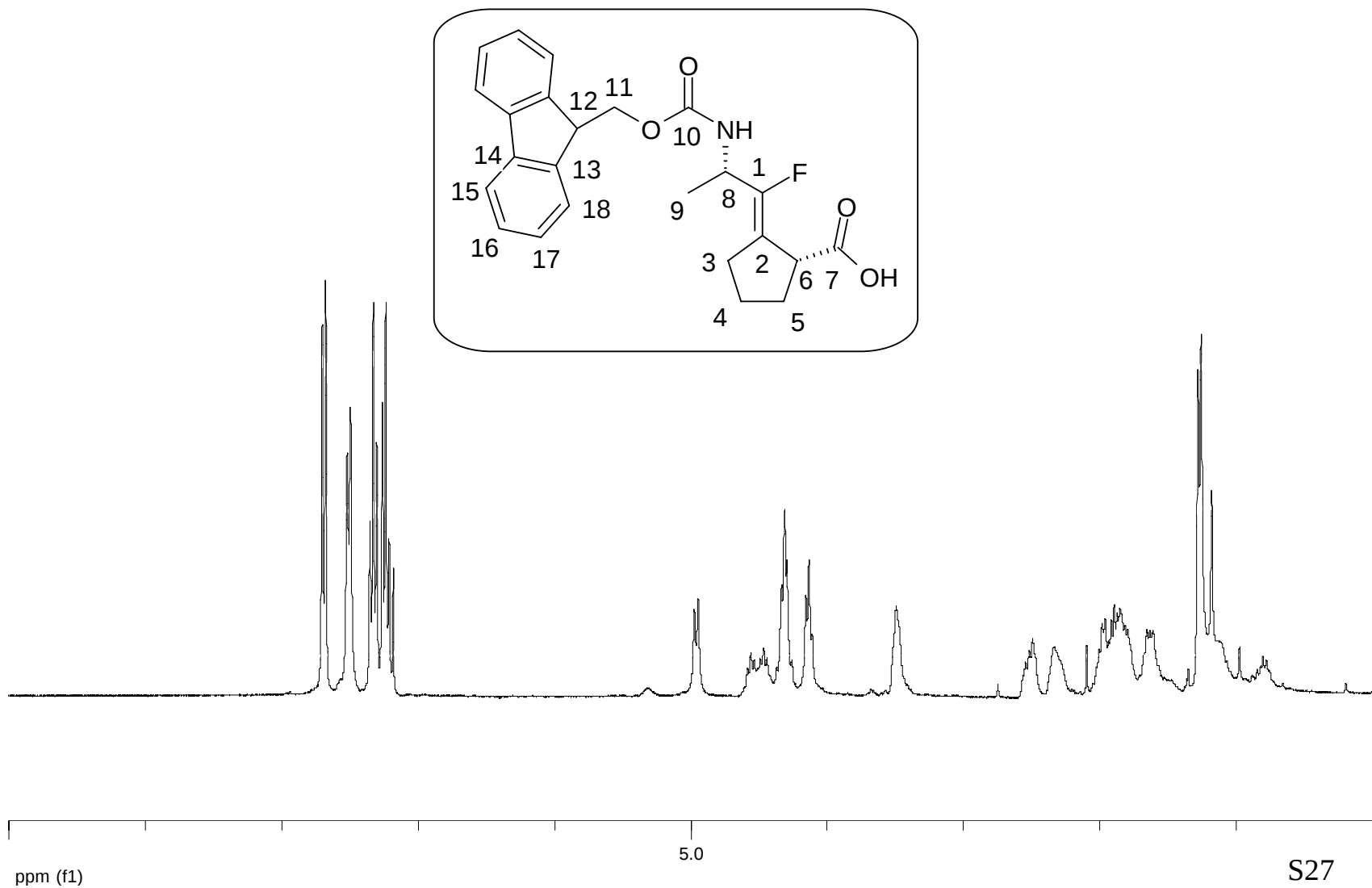
Compound (Z)-11 : ^{13}C
**(Z) N-Fluorenylmethoxycarbonyl-1-fluoro-1-(2(R)-(hydroxymethyl)
cyclopentylidene)-2(S)-aminopropane**



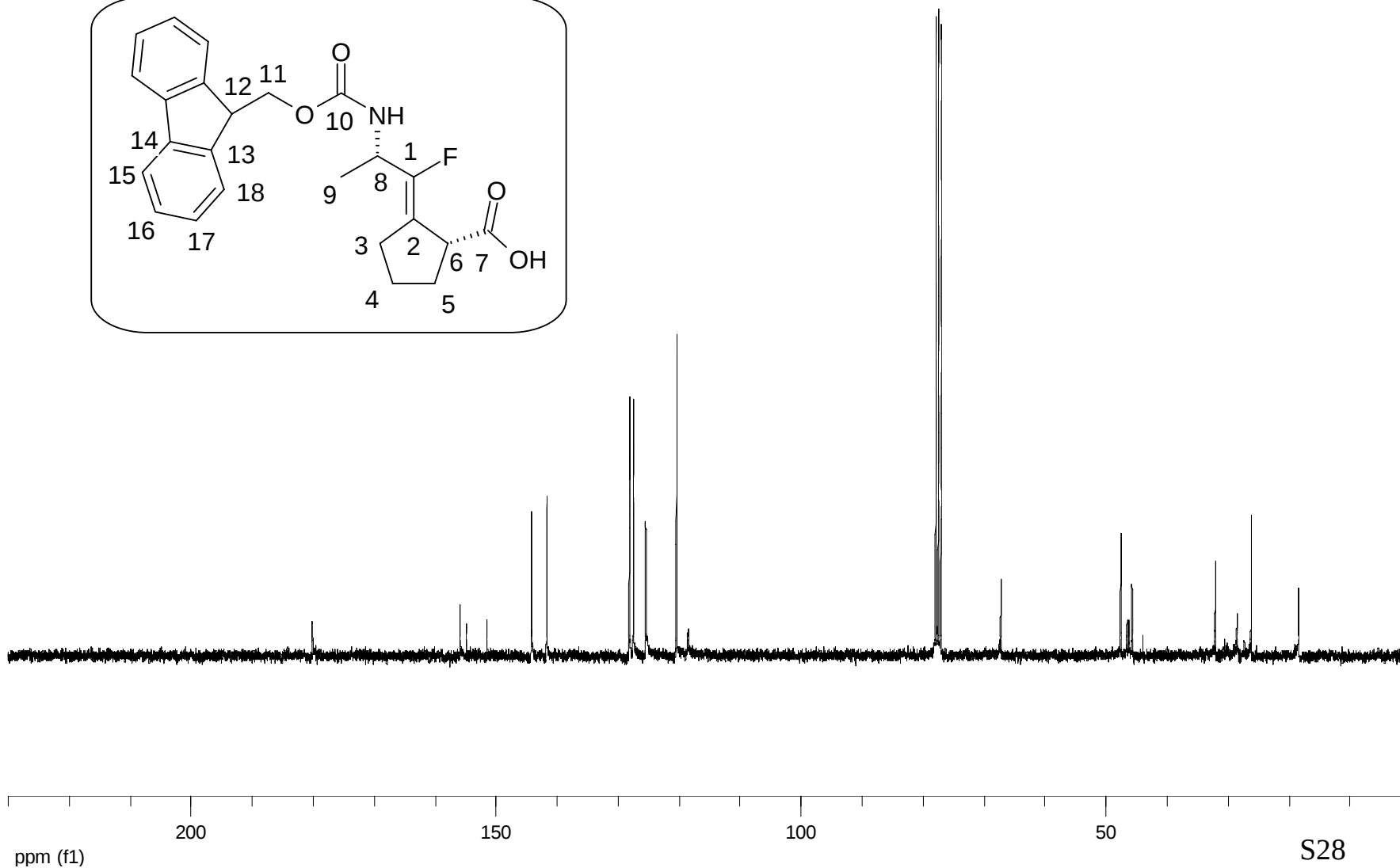
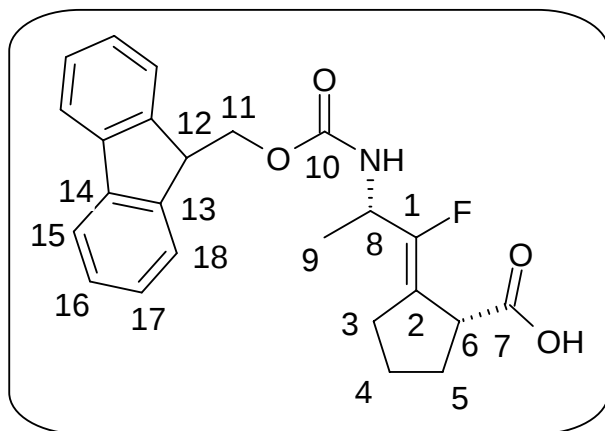
Compound (Z)-11 : ¹⁹F
(Z) N-Fluorenylmethoxycarbonyl-1-fluoro-1-(2(R)-(hydroxymethyl)
cyclopentylidene)-2(S)-aminopropane



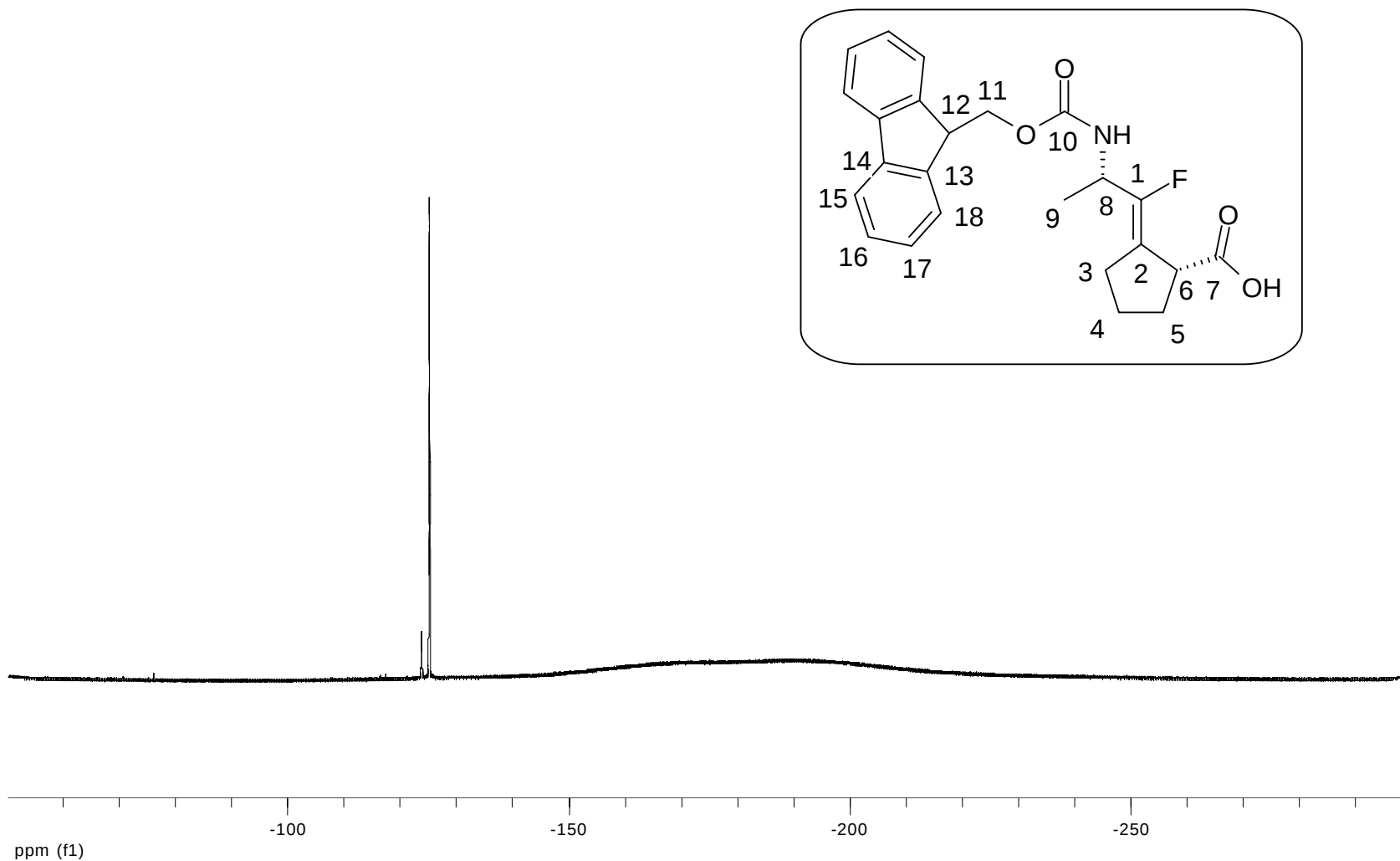
Compound 1: ^1H
Fmoc-Ala-Y[(Z) CF=C]-Pro:
(Z) N-Fluorenylmethoxycarbonyl-1-fluoro -1-(2(R)-(acid)cyclopentylidene)-2(S)-
aminopropane

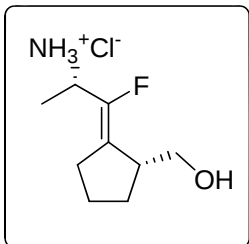


Compound 1: ^{13}C
Fmoc-Ala-Y[(Z) CF=C]-Pro:
(Z) N-Fluorenylmethoxycarbonyl-1-fluoro -1-(2(R)-(acid)cyclopentylidene)-2(S)-
aminopropane



Compound 1: ^{19}F
Fmoc-Ala-Y[(Z) CF=C]-Pro:
(Z) N-Fluorenylmethoxycarbonyl-1-fluoro -1-(2(R)-(acid)cyclopentylidene)-2(S)-aminopropane





Compound 10: thermal ellipsoid plot for the crystal structure

