

Synthesis and Wittig Rearrangement of 3- and 4-Benzyloxyphenylphosphonates

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Supplementary Material

Figure

¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 8	S1, S2, S3
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 9	S4, S5, S6
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 10	S7, S8, S9
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 11	S10, S11, S12
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 12	S13, S14, S15
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 13a	S16, S17, S18
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 13b	S19, S20, S21
¹ H NMR, ¹⁹ F NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 13c	S22, S23, S24, S25
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 13d	S26, S27, S28
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 13e	S29, S30, S31
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 14a	S32, S33, S34
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¹ H NMR, ¹⁹ F NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 14c	S38, S39, S40, S41
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 14d	S42, S43, S44
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 16	S45, S46, S47
¹ H NMR, ³¹ P NMR and DEPTQ ¹³ C NMR spectra of 17	S48, S49, S50

^1H NMR, ^{31}P NMR and DEPTQ ^{13}C NMR spectra of **18**

S51, S52, S53

^1H NMR, ^{31}P NMR and DEPTQ ^{13}C NMR spectra of **19**

S54, S55, S56, S57

Figure S1. 400 MHz DEPTQ ^1H NMR spectrum of **8**

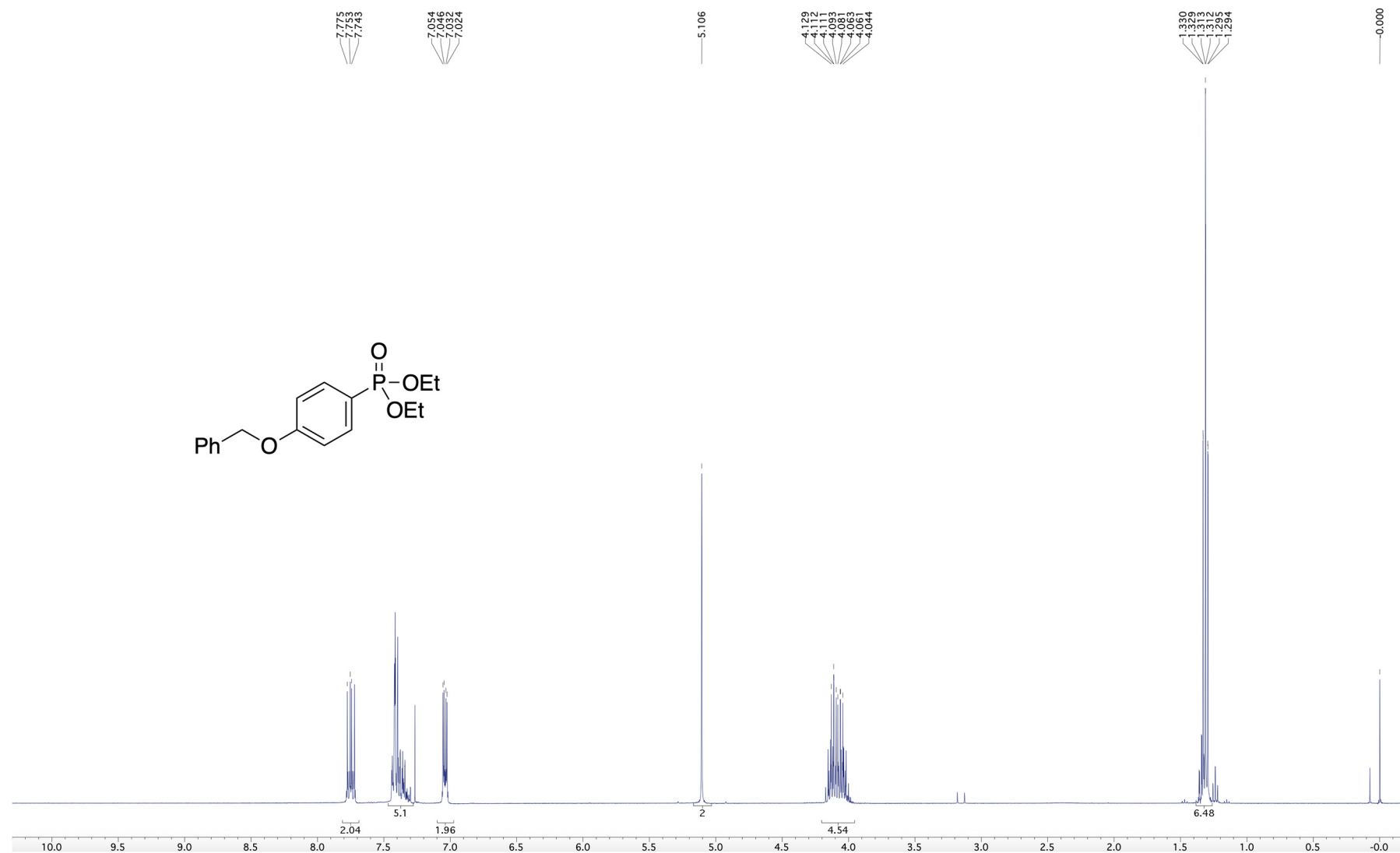


Figure S2. 162 MHz ^{31}P NMR spectrum of **8**

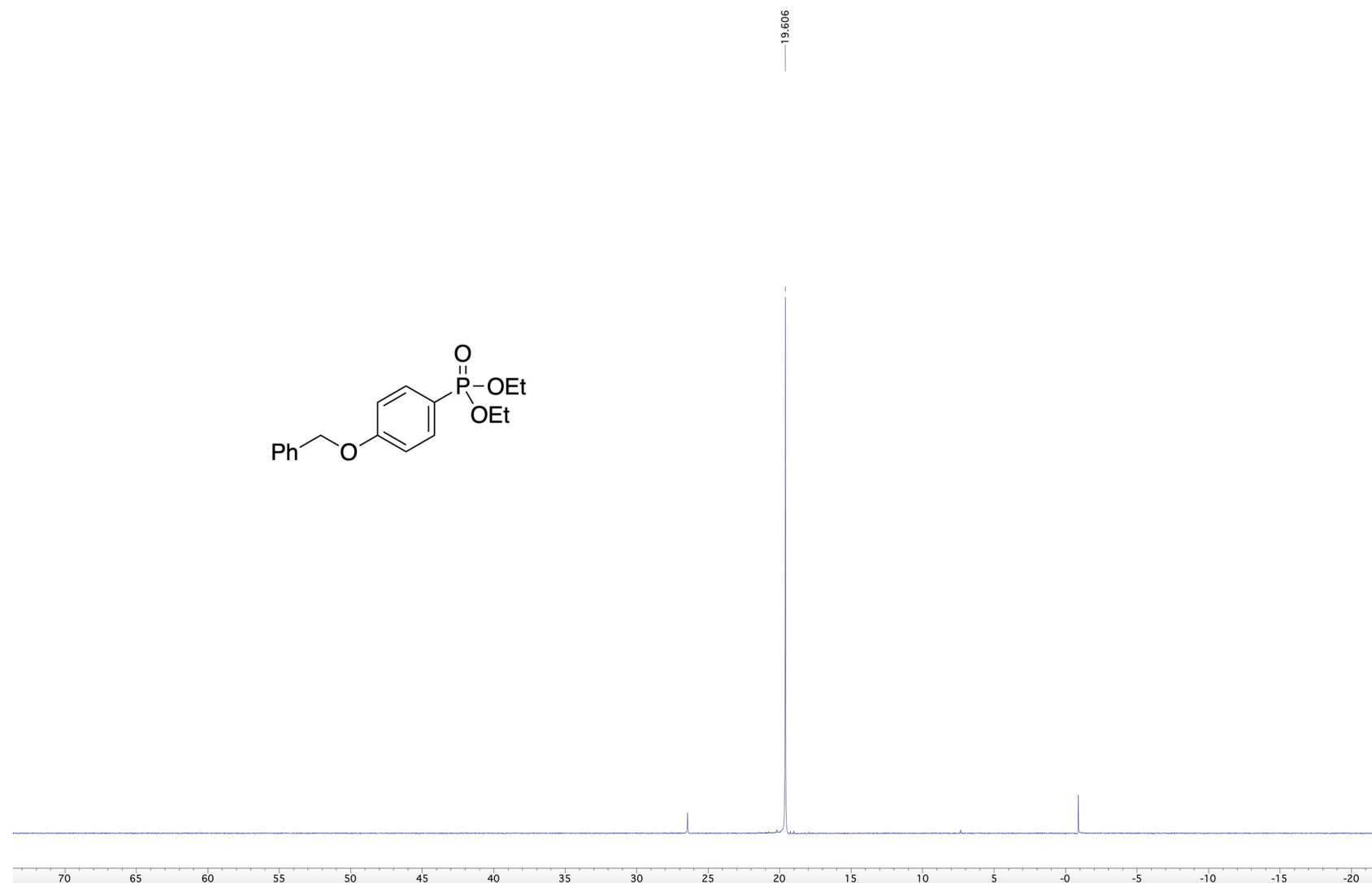


Figure S3. 100 MHz DEPTQ ^{13}C NMR spectrum of **8**

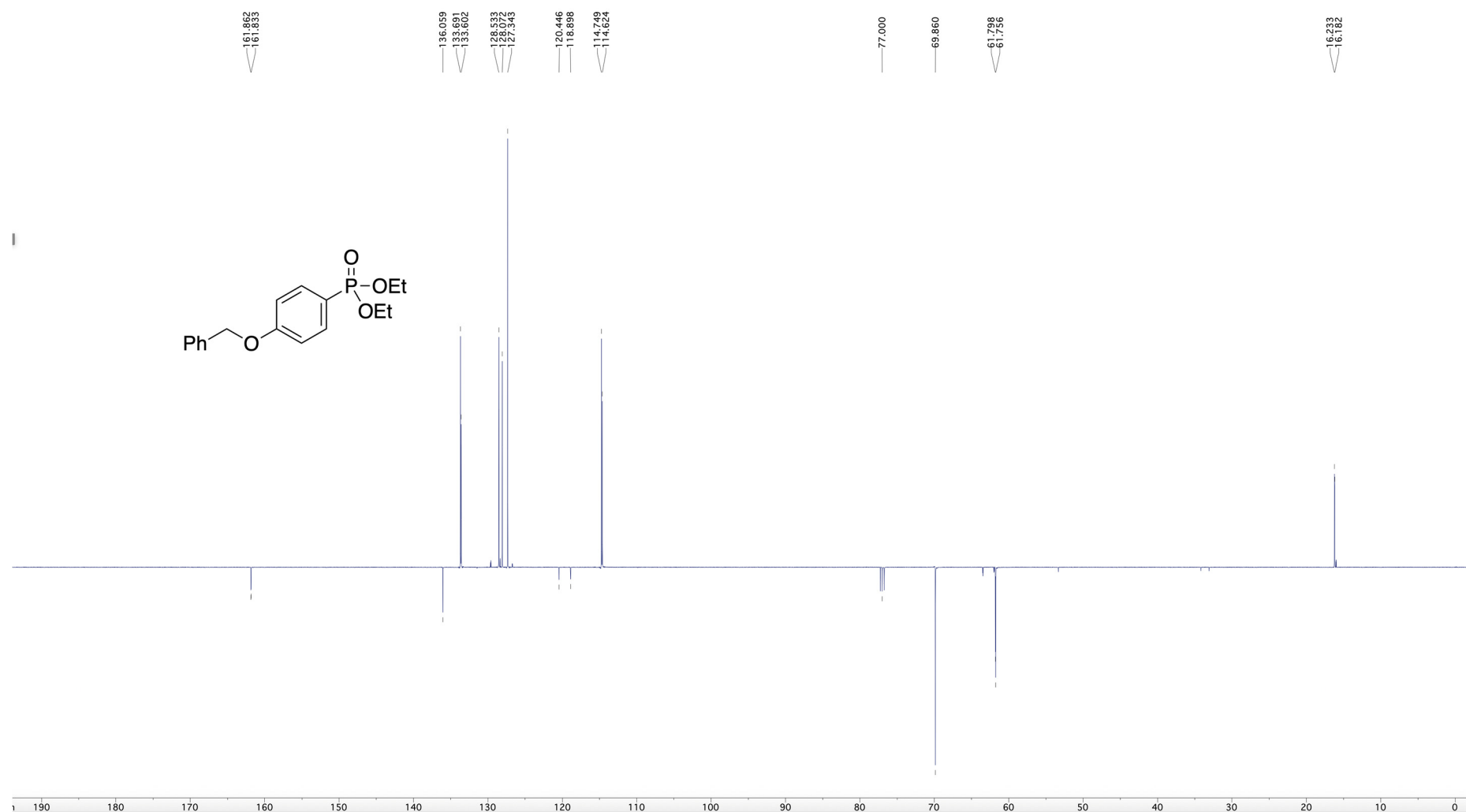


Figure S4. 400 MHz ^1H NMR spectrum of **9**

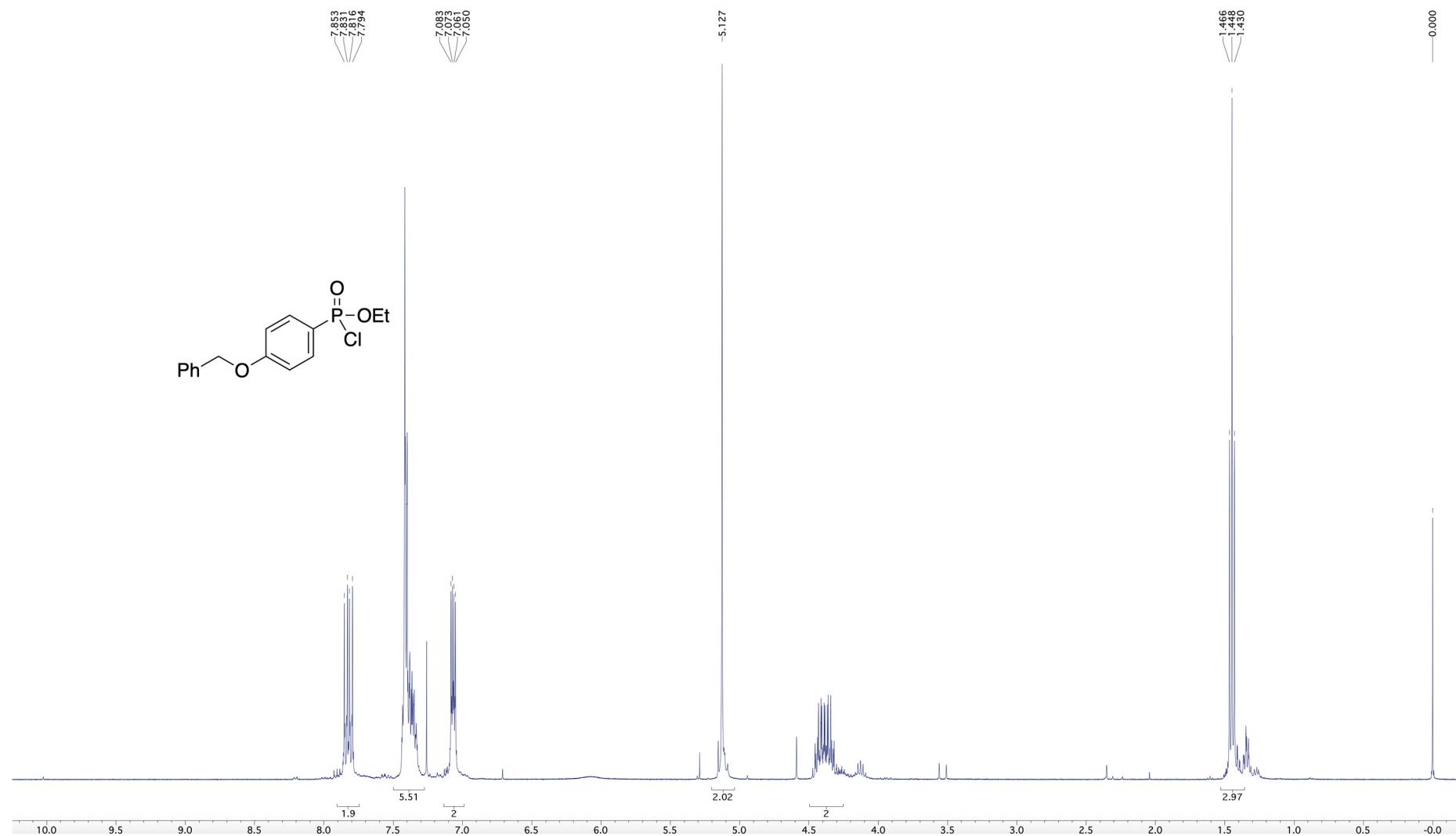


Figure S5. 162 MHz ^{31}P NMR spectrum of **9**

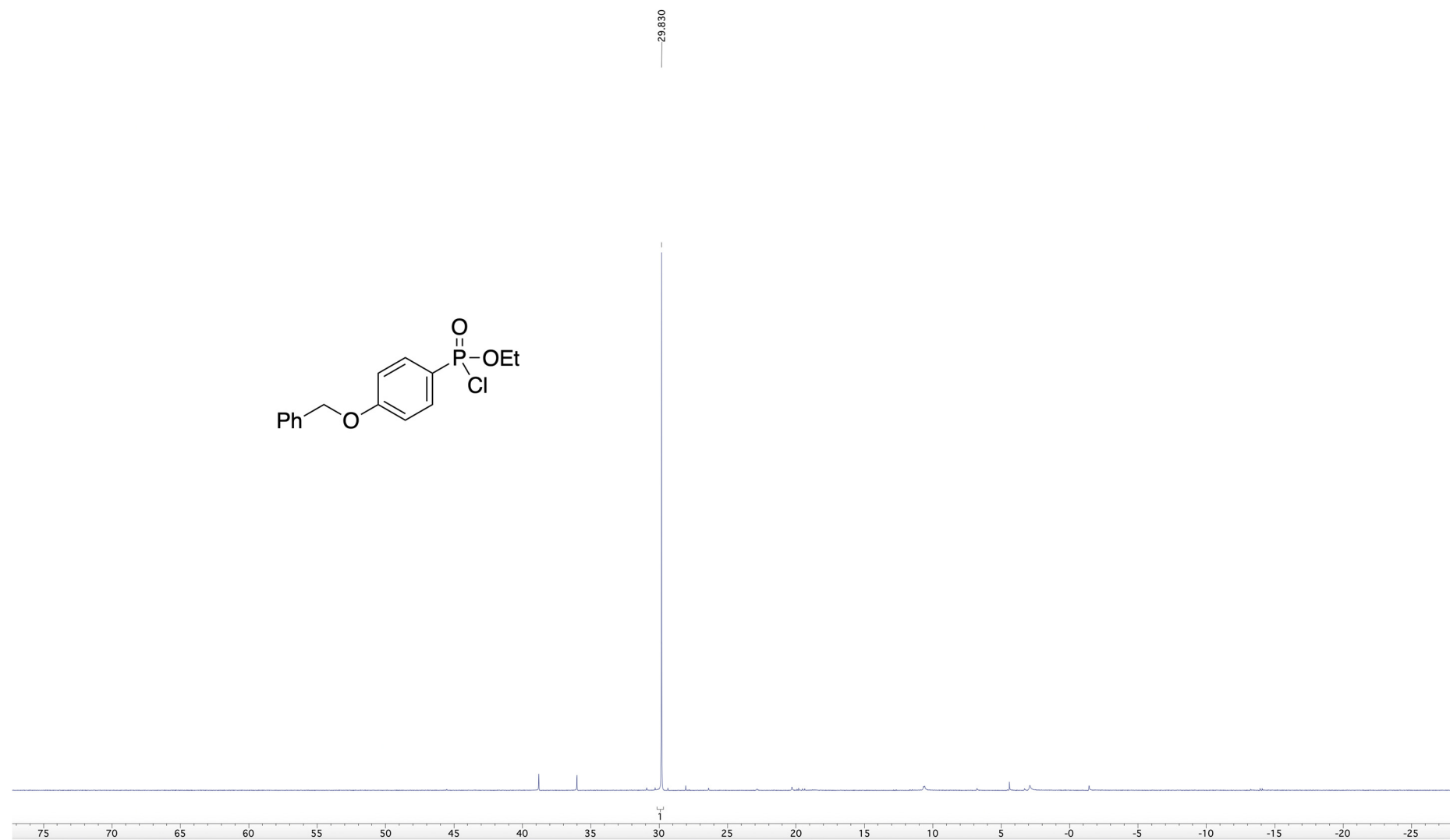


Figure S6. 100 MHz DEPTQ ^{13}C NMR spectrum of **9**

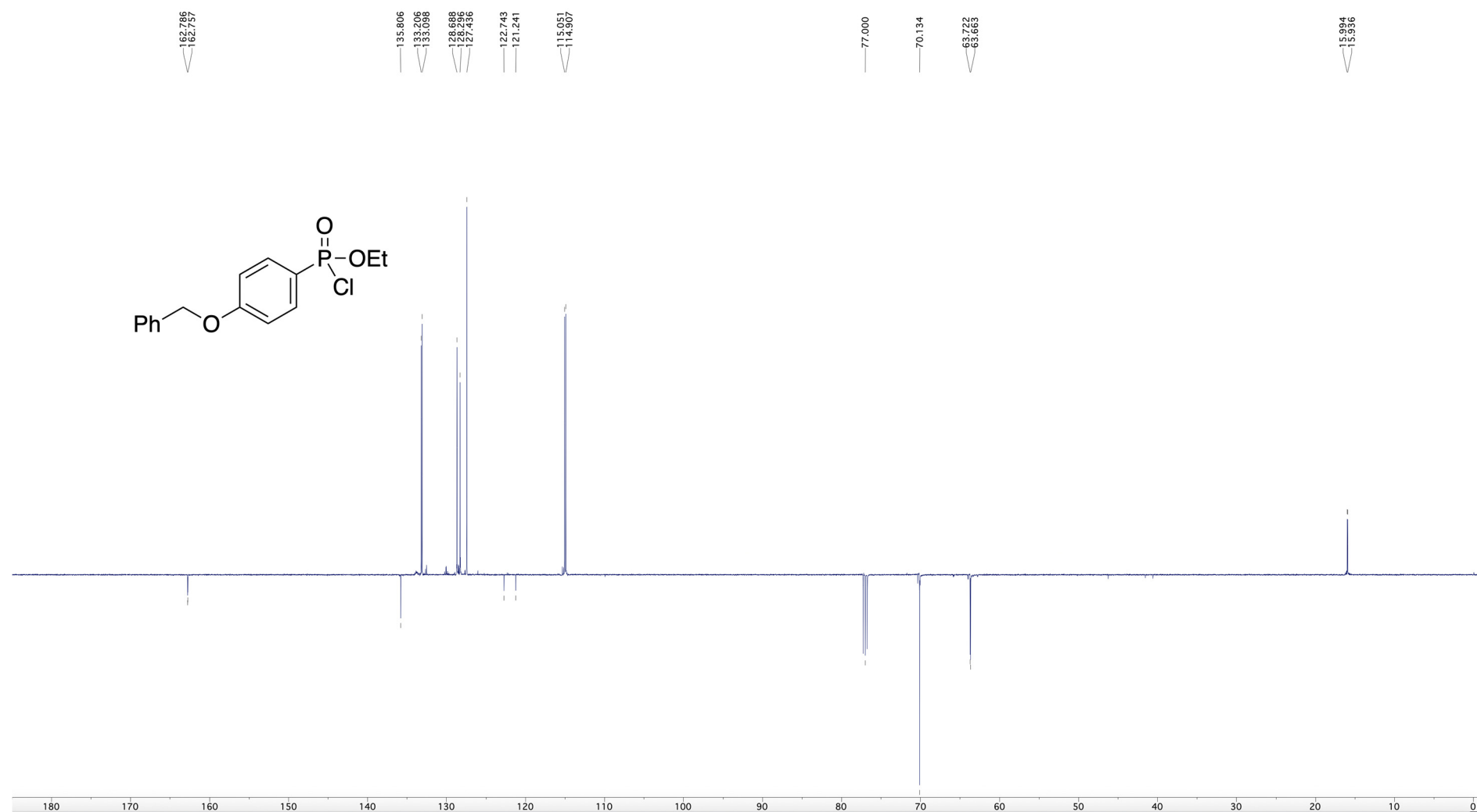


Figure S7. 400 MHz ^1H NMR spectrum of **10**

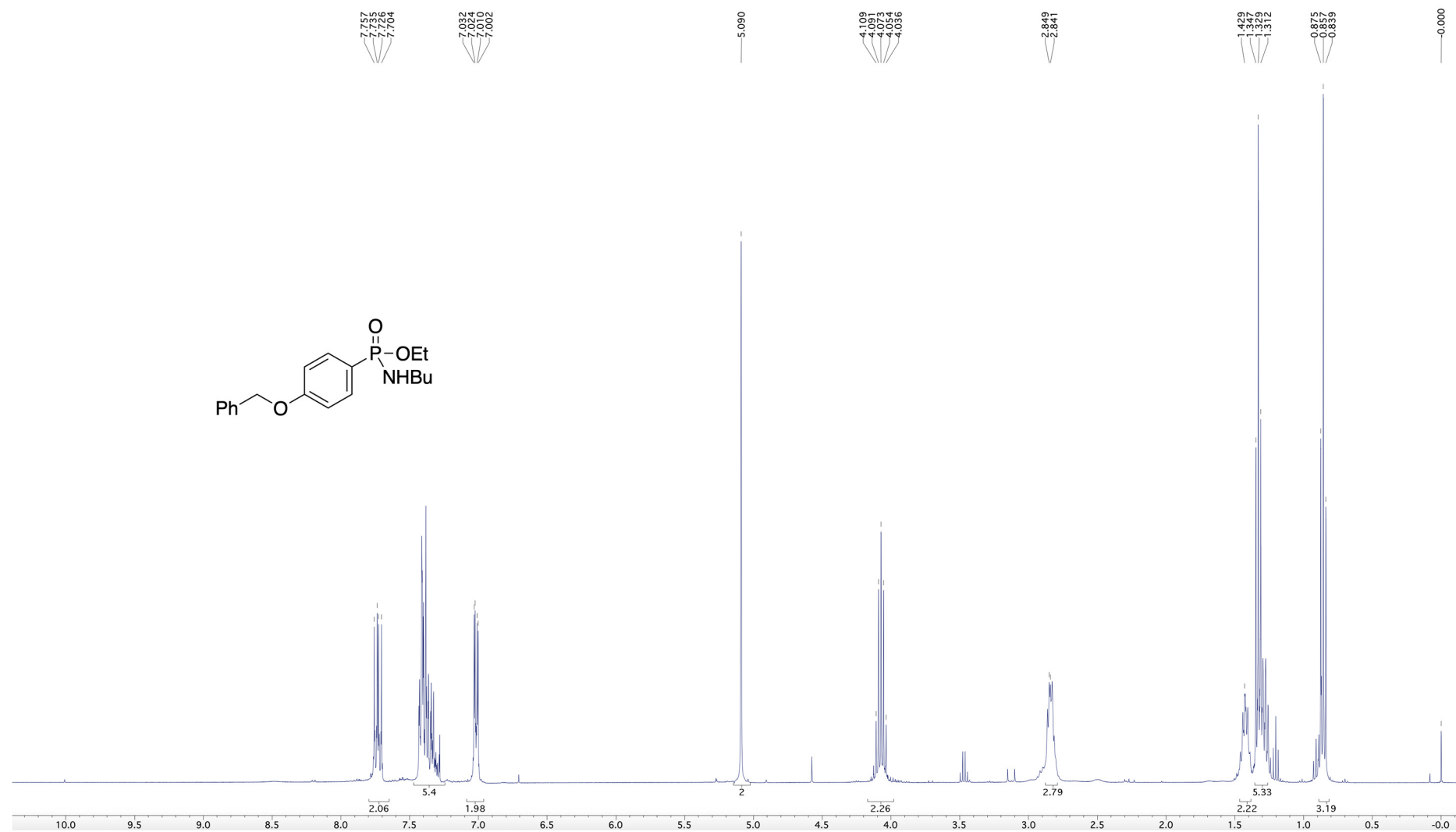


Figure S8. 162 MHz ^{31}P NMR spectrum of **10**

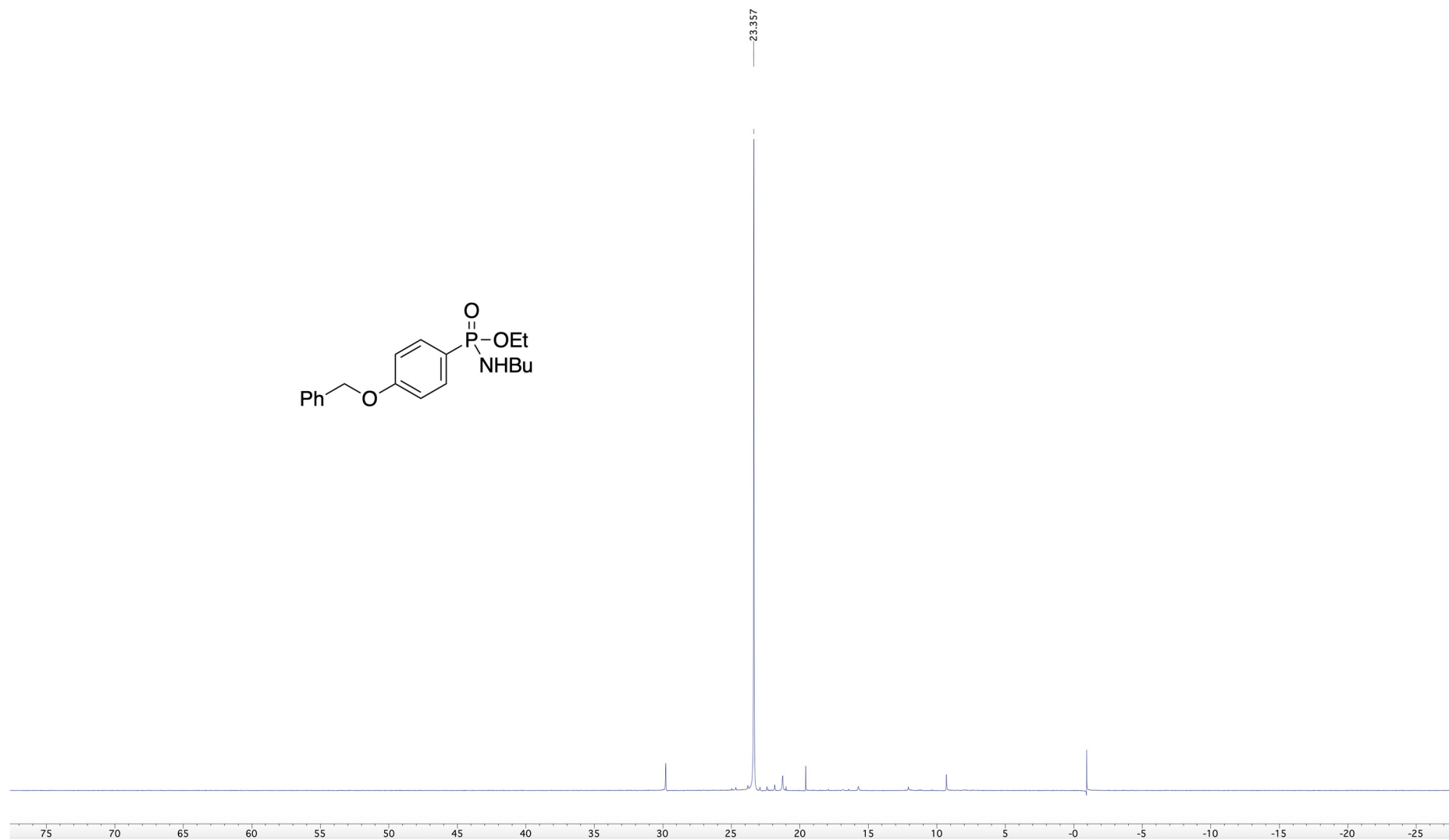


Figure S9. 100 MHz DEPTQ ^{13}C NMR spectrum of **10**

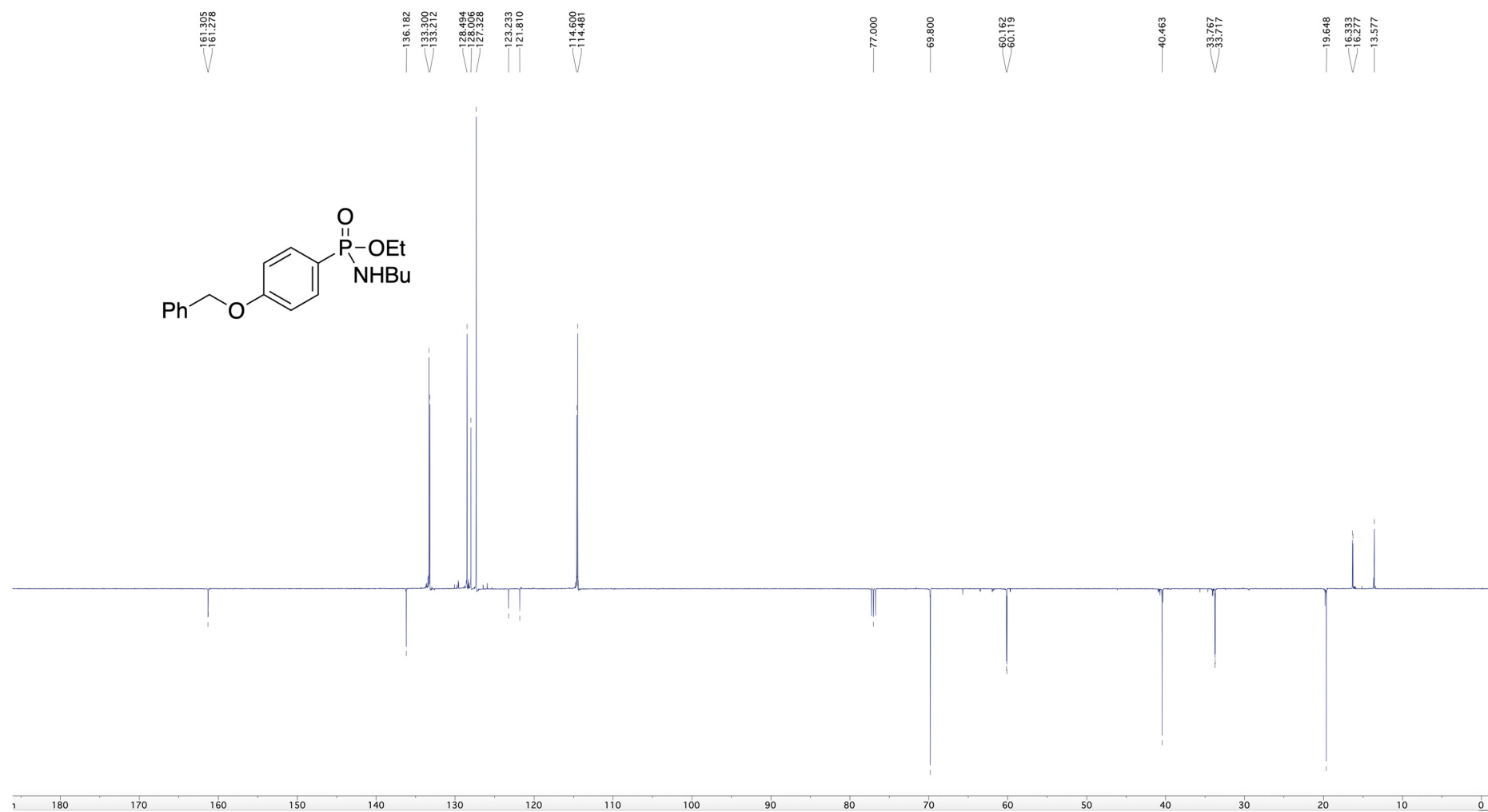


Figure S10. 400 MHz ^1H NMR spectrum of **11**

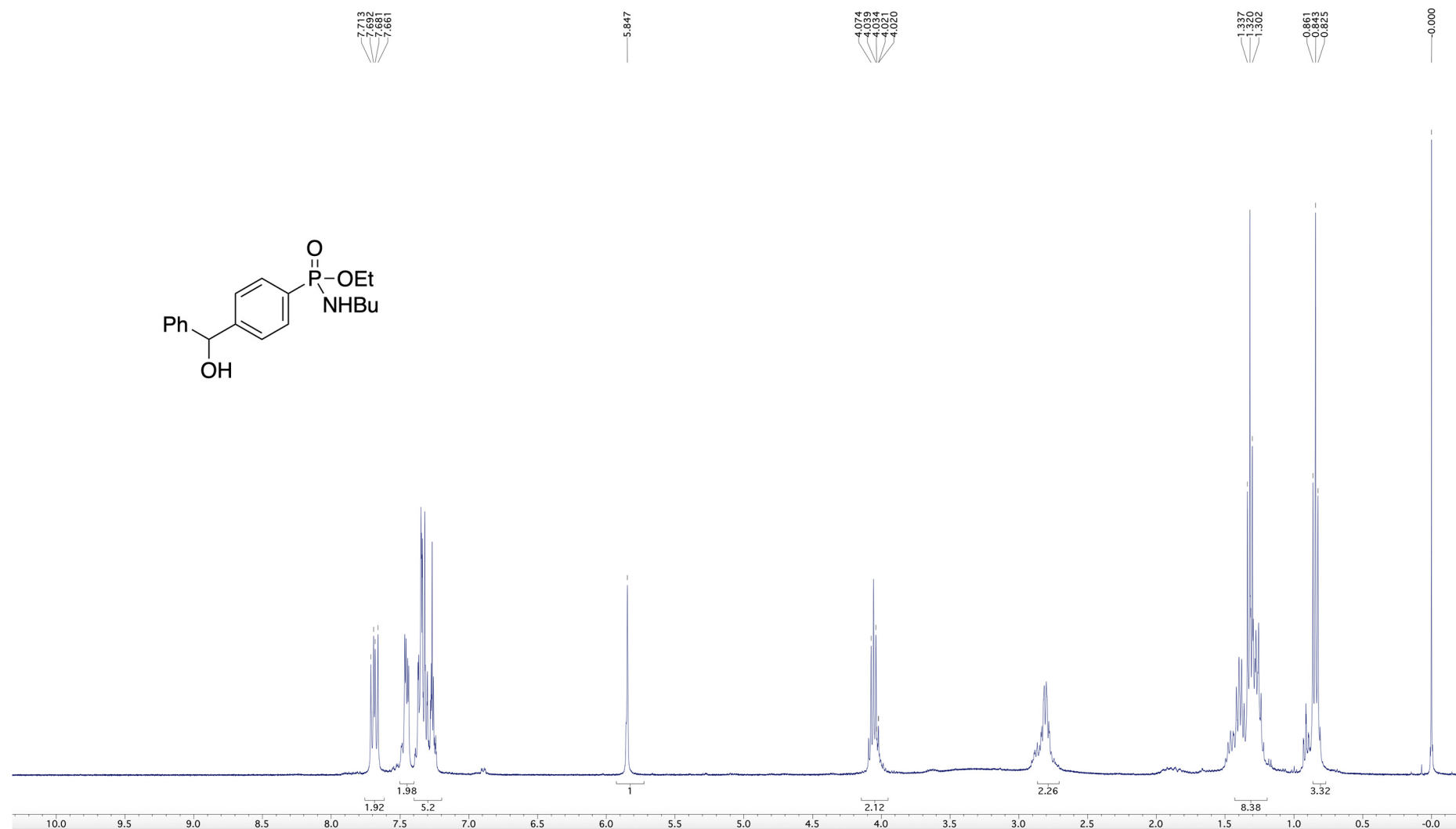


Figure S11. 162 MHz ^{31}P NMR spectrum of **11**

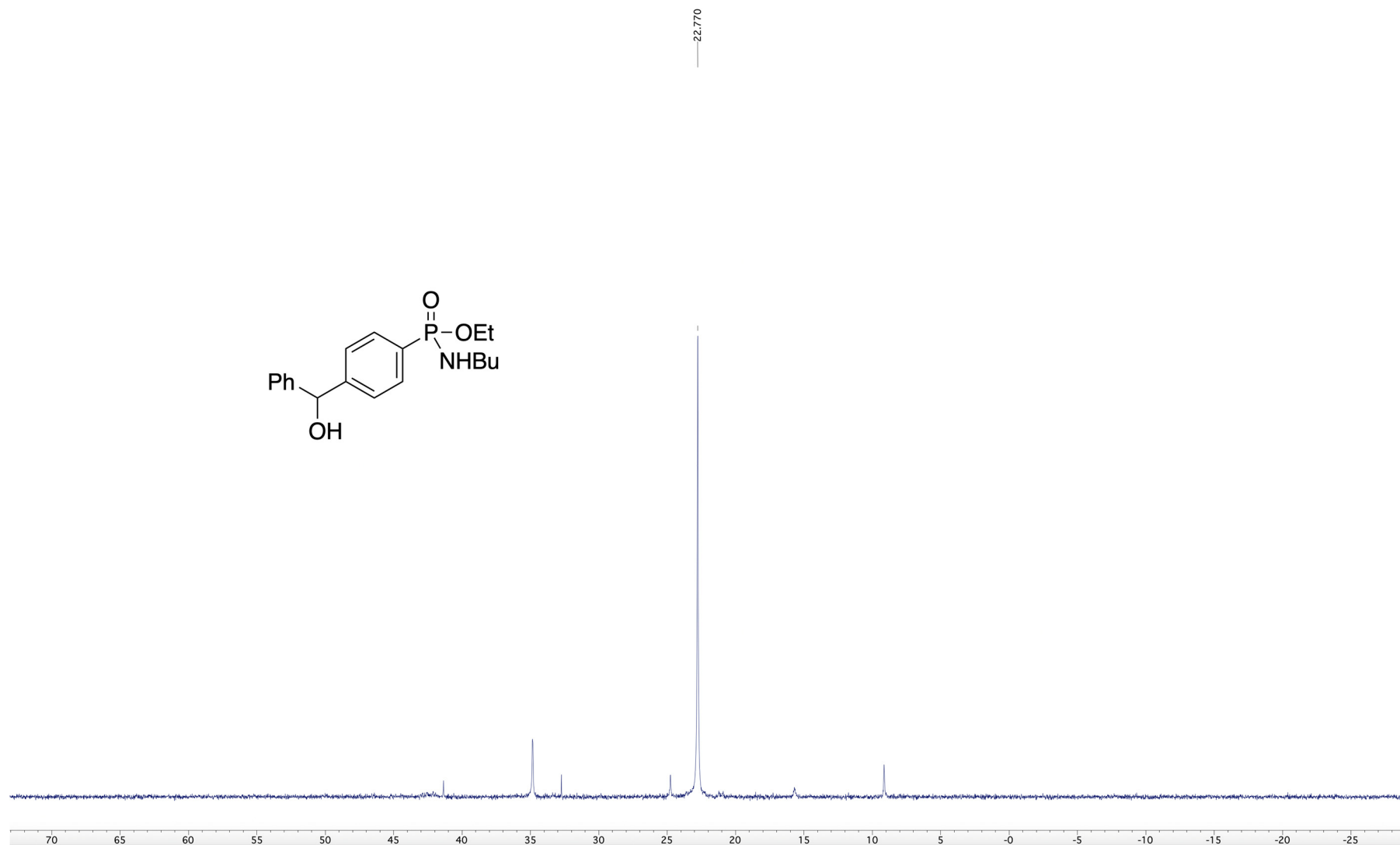


Figure S12. 100 MHz DEPTQ ^{13}C NMR spectrum of **11**

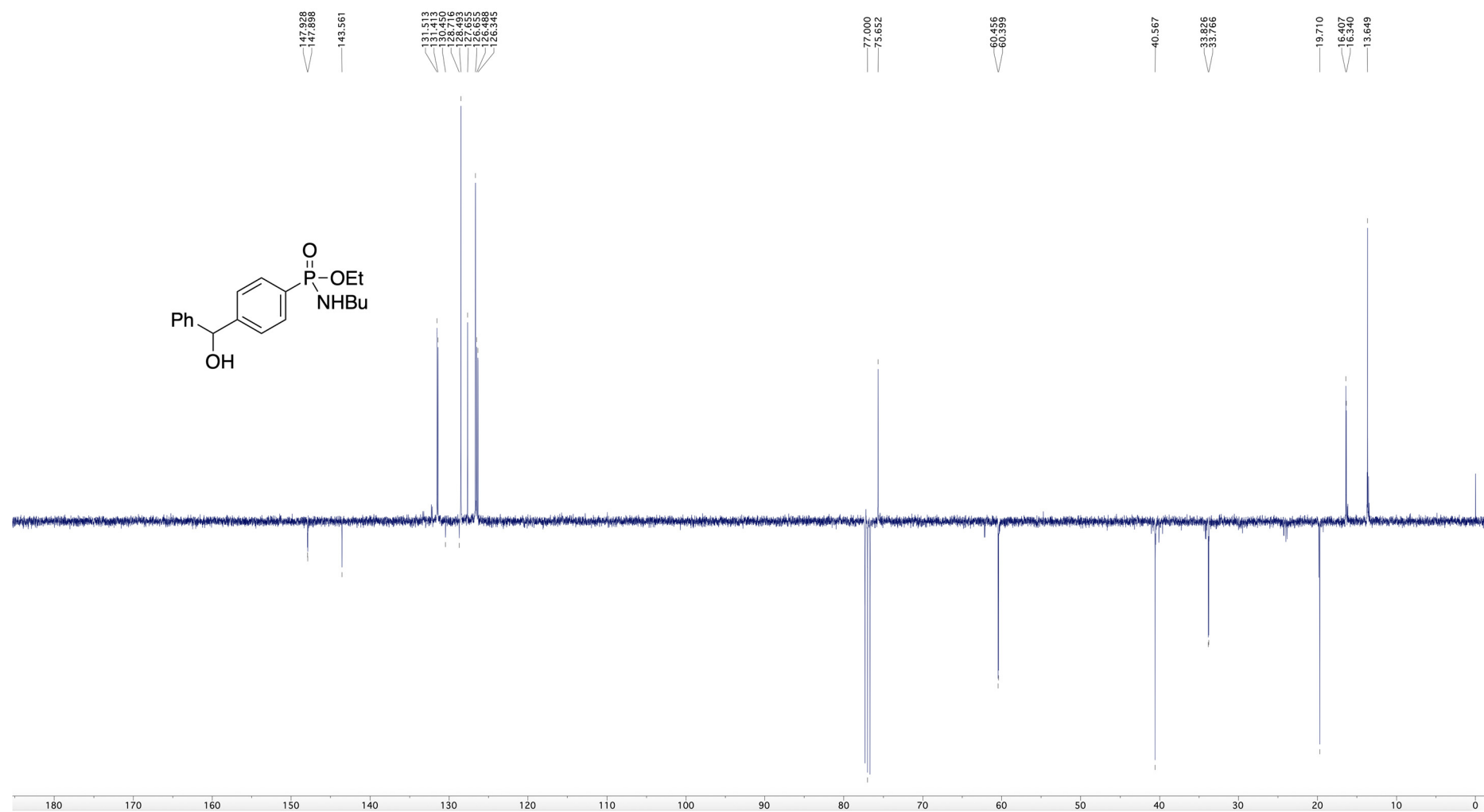


Figure S13. 400 MHz ^1H NMR spectrum of **12**

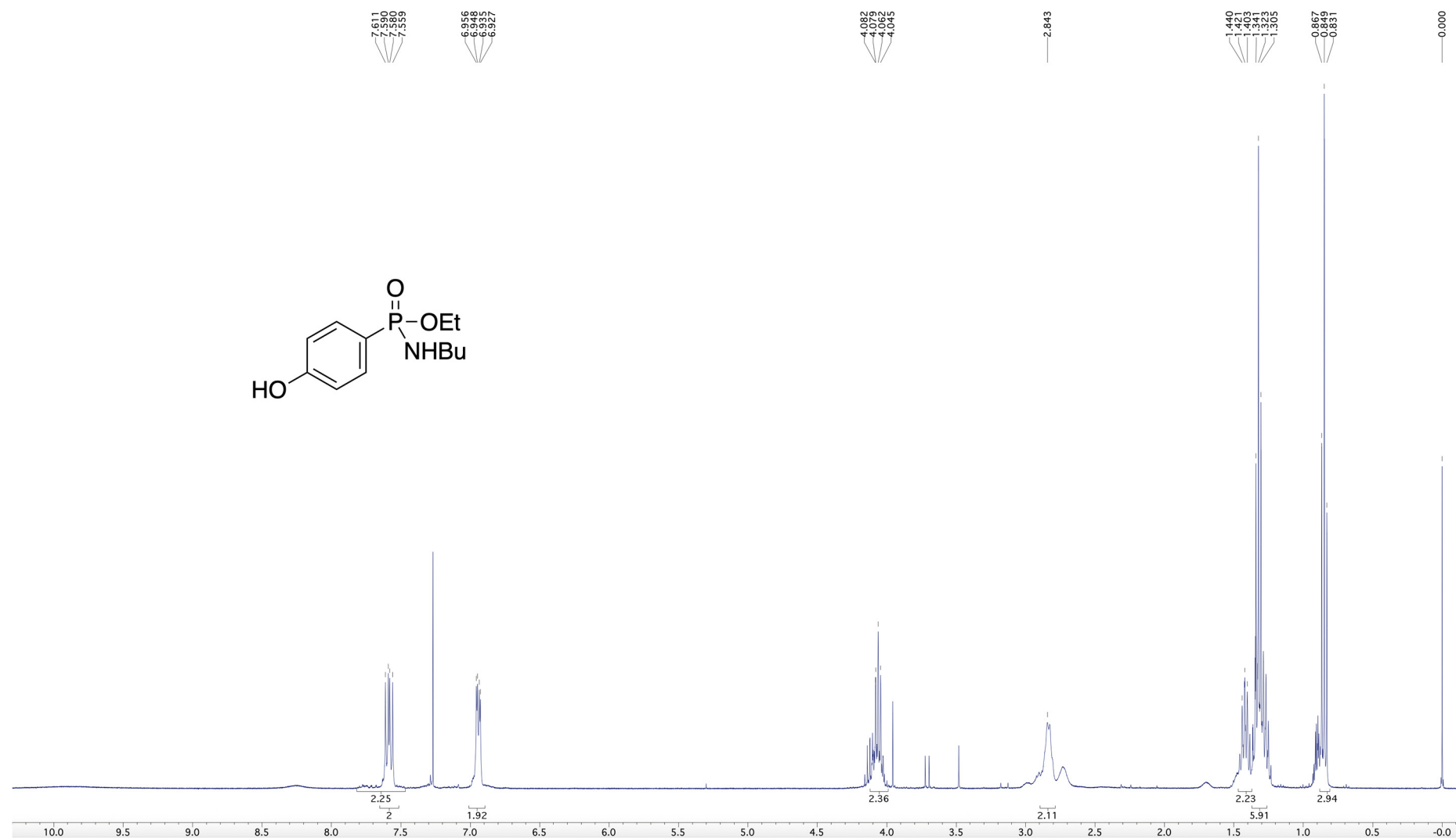


Figure S14. 202 MHz ^{31}P NMR spectrum of **12**

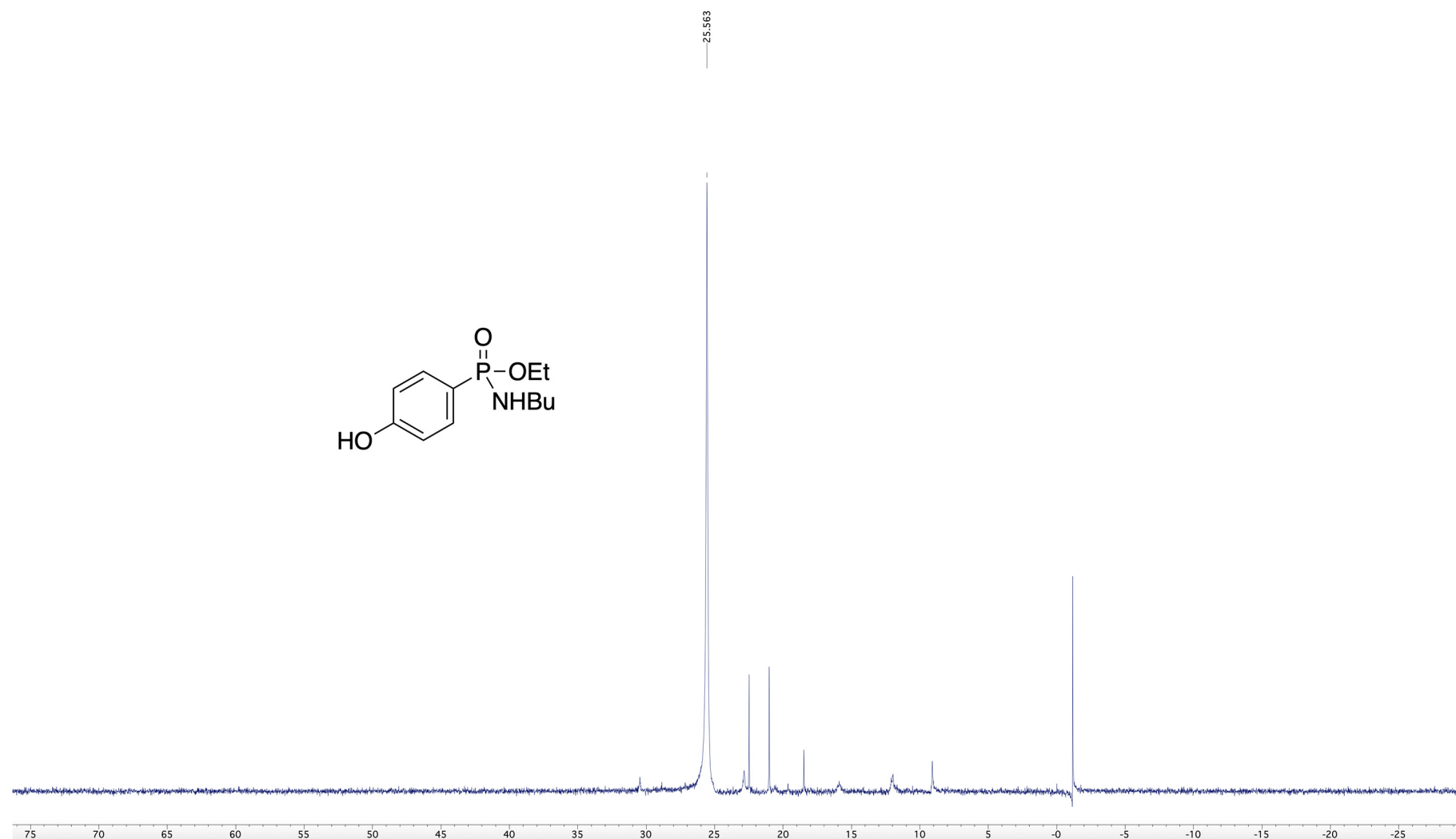


Figure S15. 100 MHz DEPTQ ^{13}C NMR spectrum of **12**

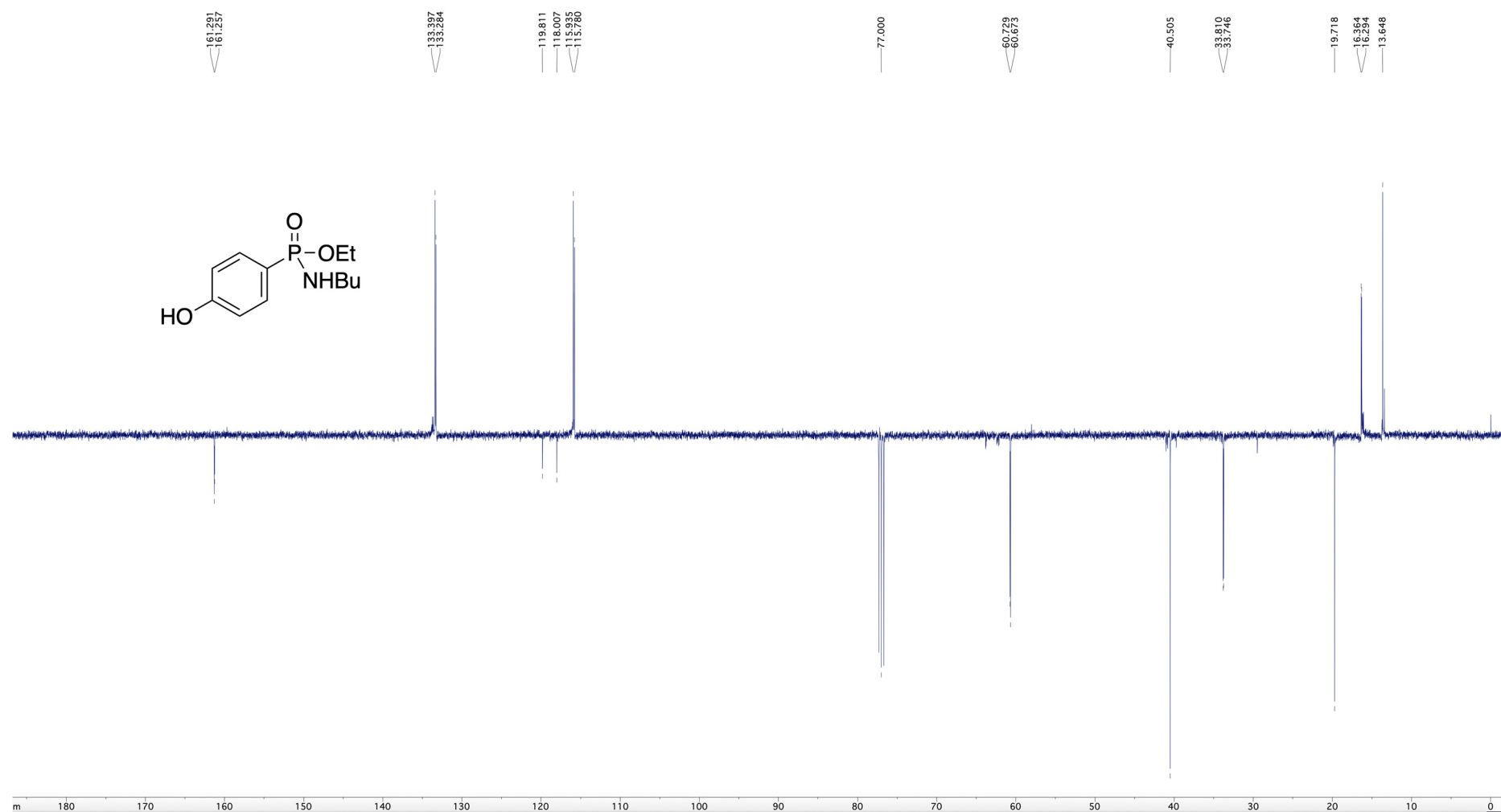


Figure S16. 400 MHz ^1H NMR spectrum of **13a**

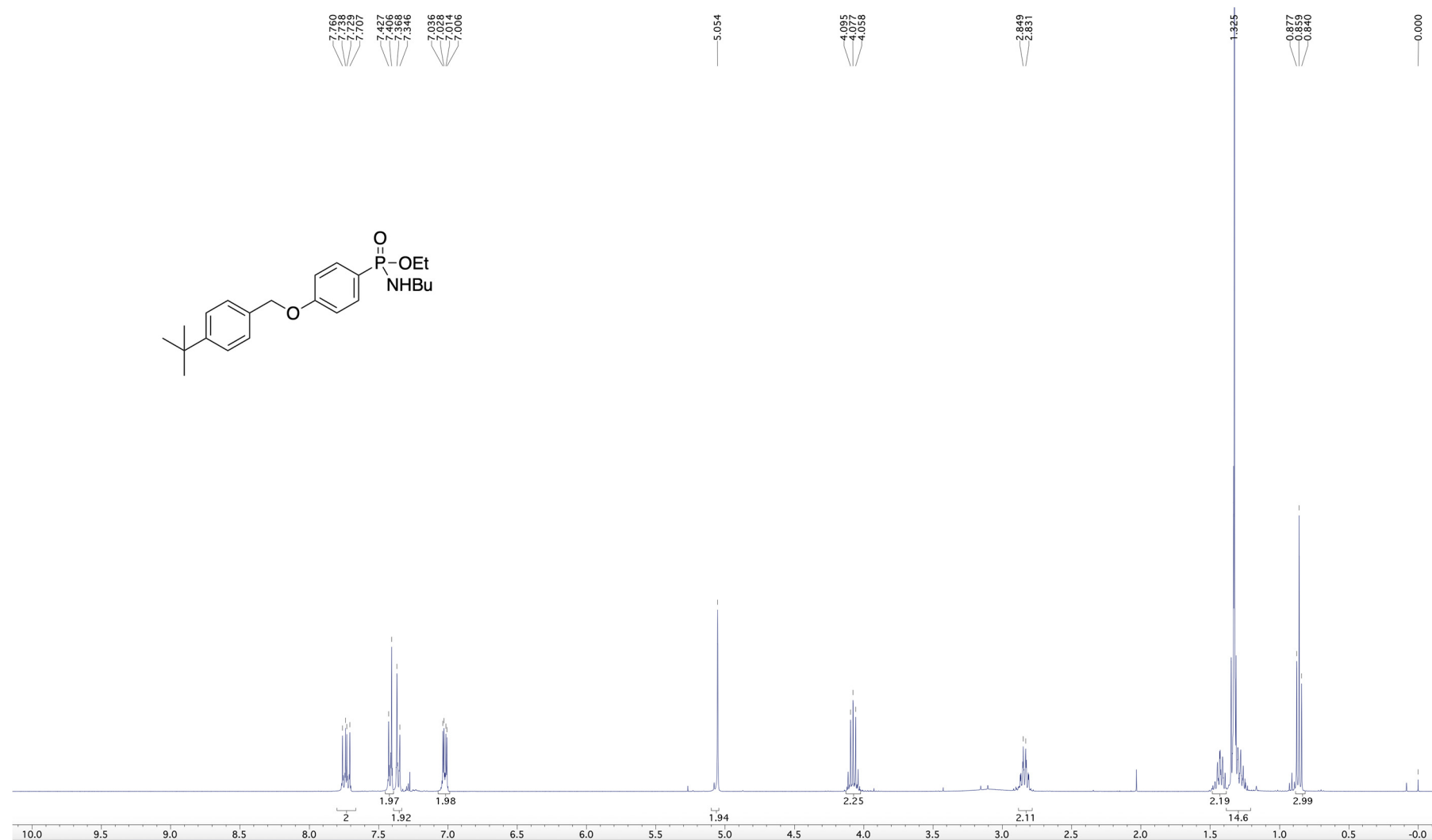


Figure S17. 162 MHz ^{31}P NMR spectrum of **13a**

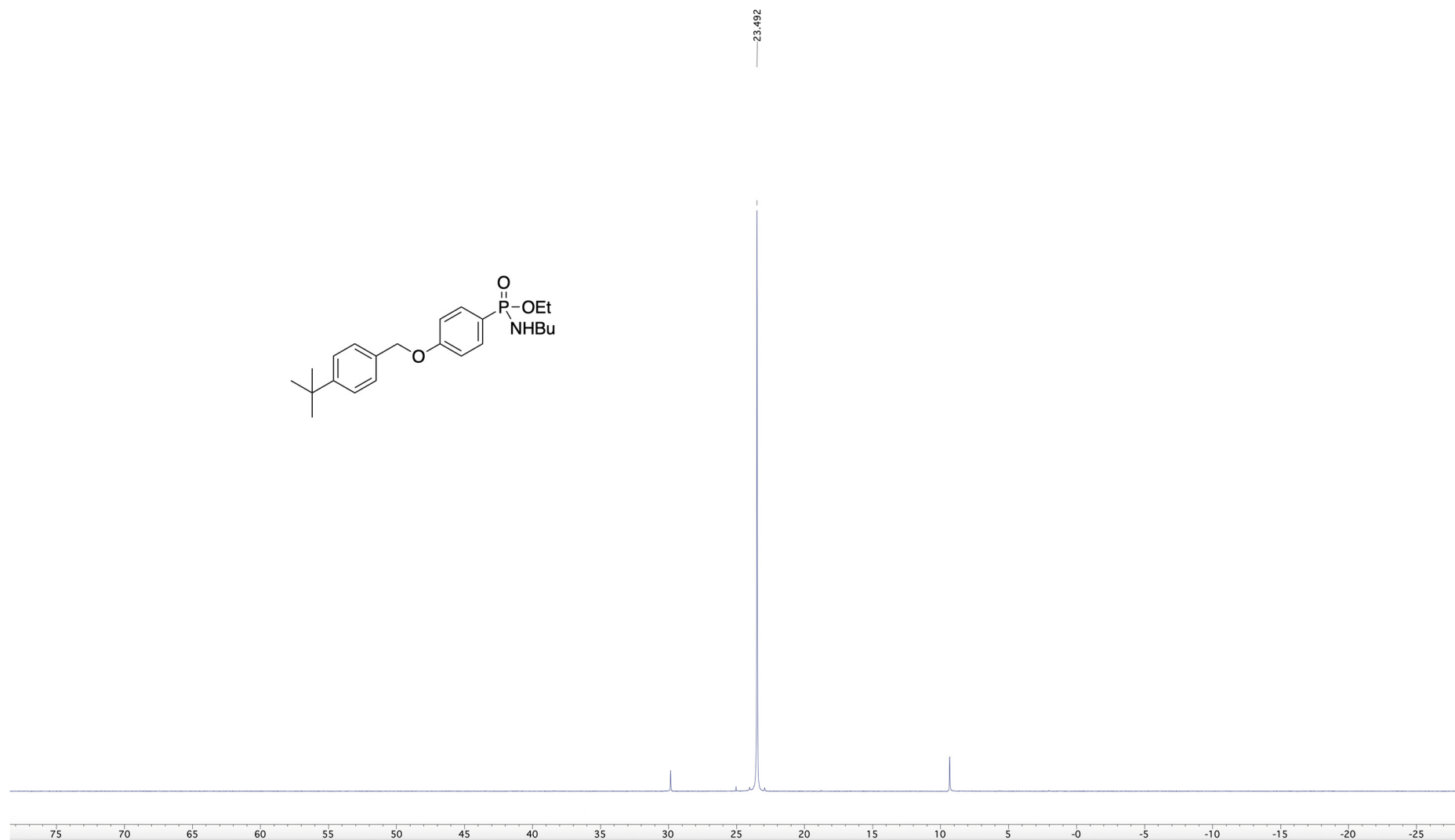


Figure S18. 100 MHz DEPTQ ^{13}C NMR spectrum of **13a**

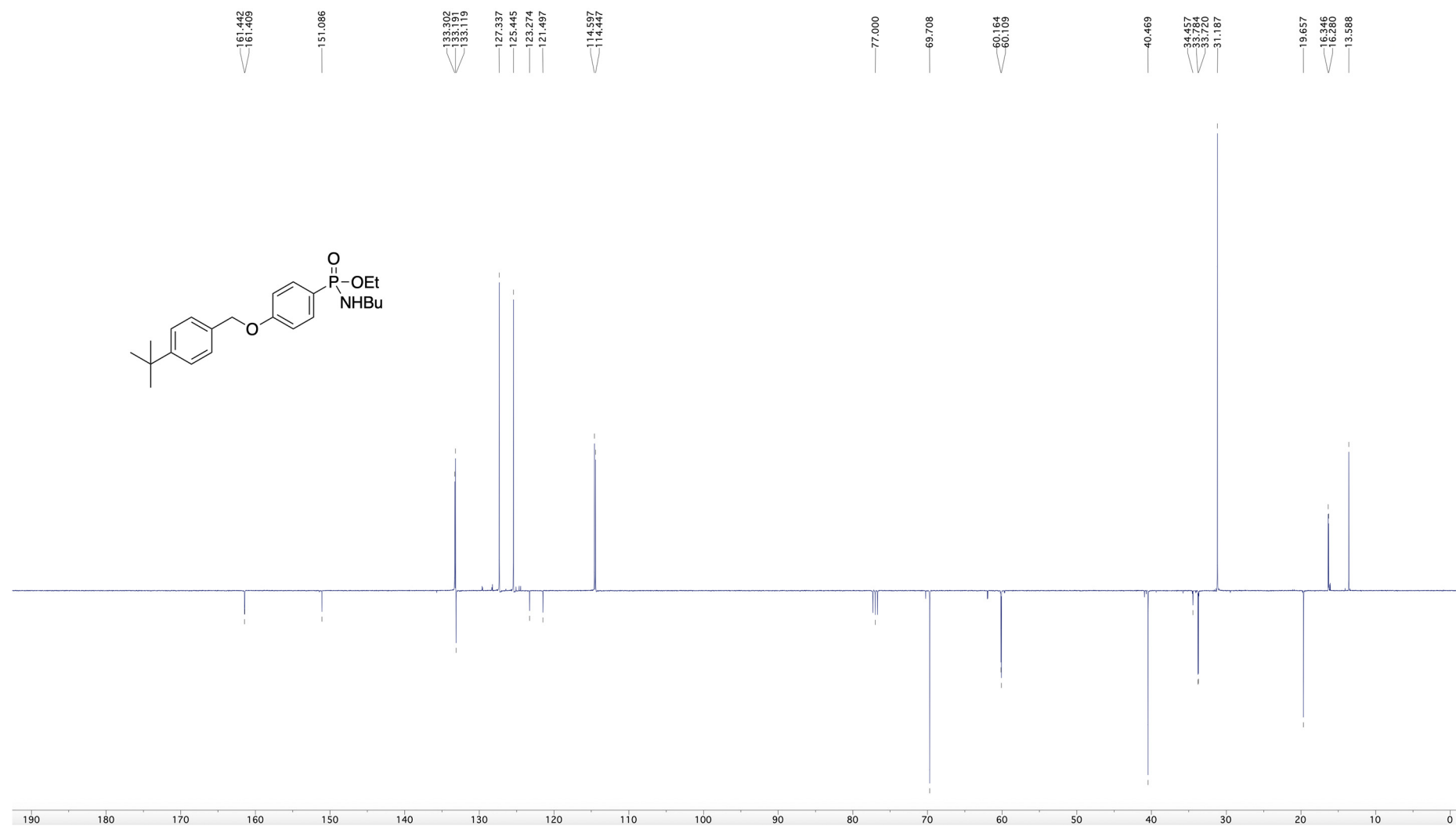


Figure S19. 400 MHz ^1H NMR spectrum of **13b**

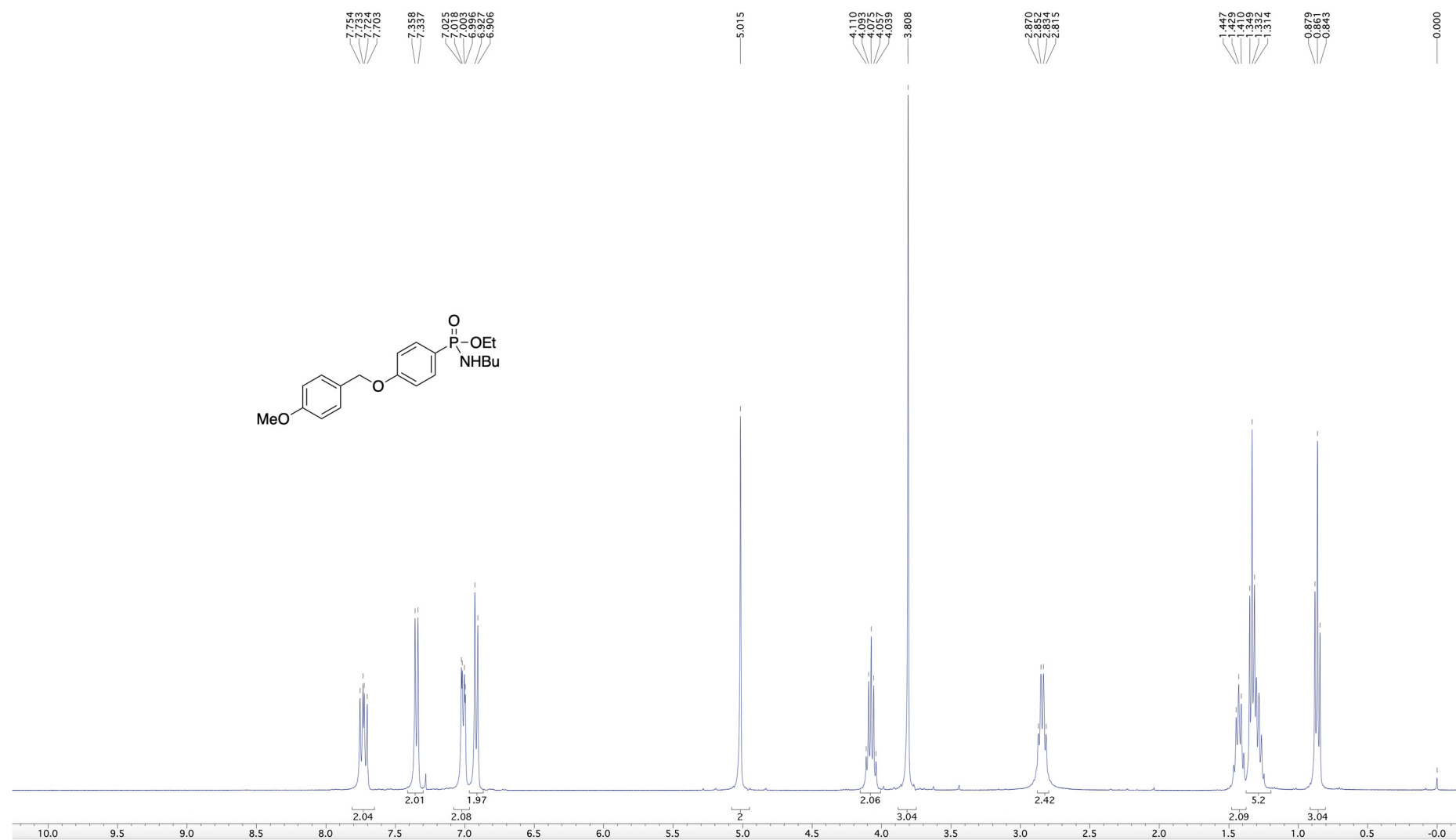


Figure S20. 162 MHz ^{31}P NMR spectrum of **13b**

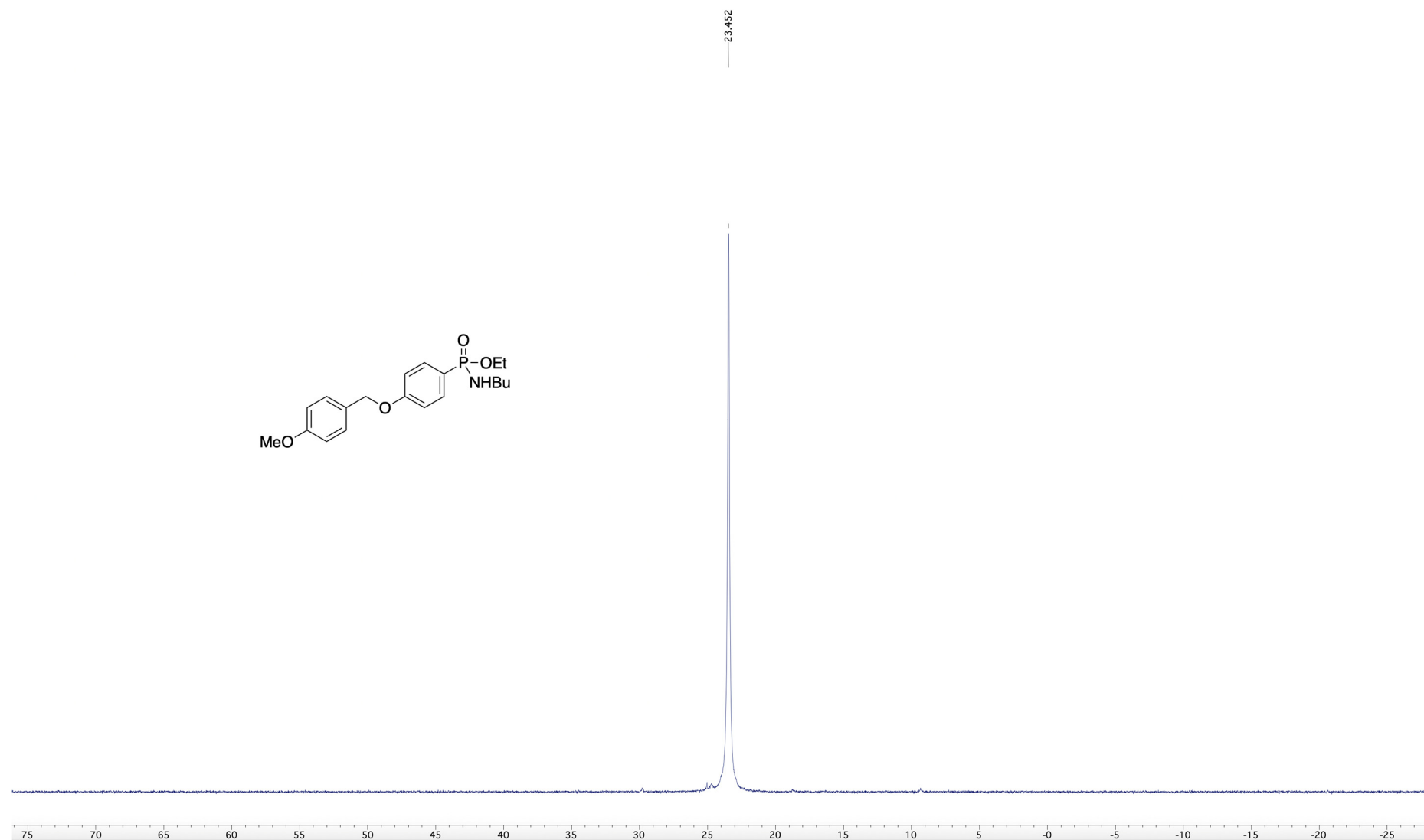


Figure S21. 125 MHz DEPTQ ^{13}C NMR spectrum of **13b**

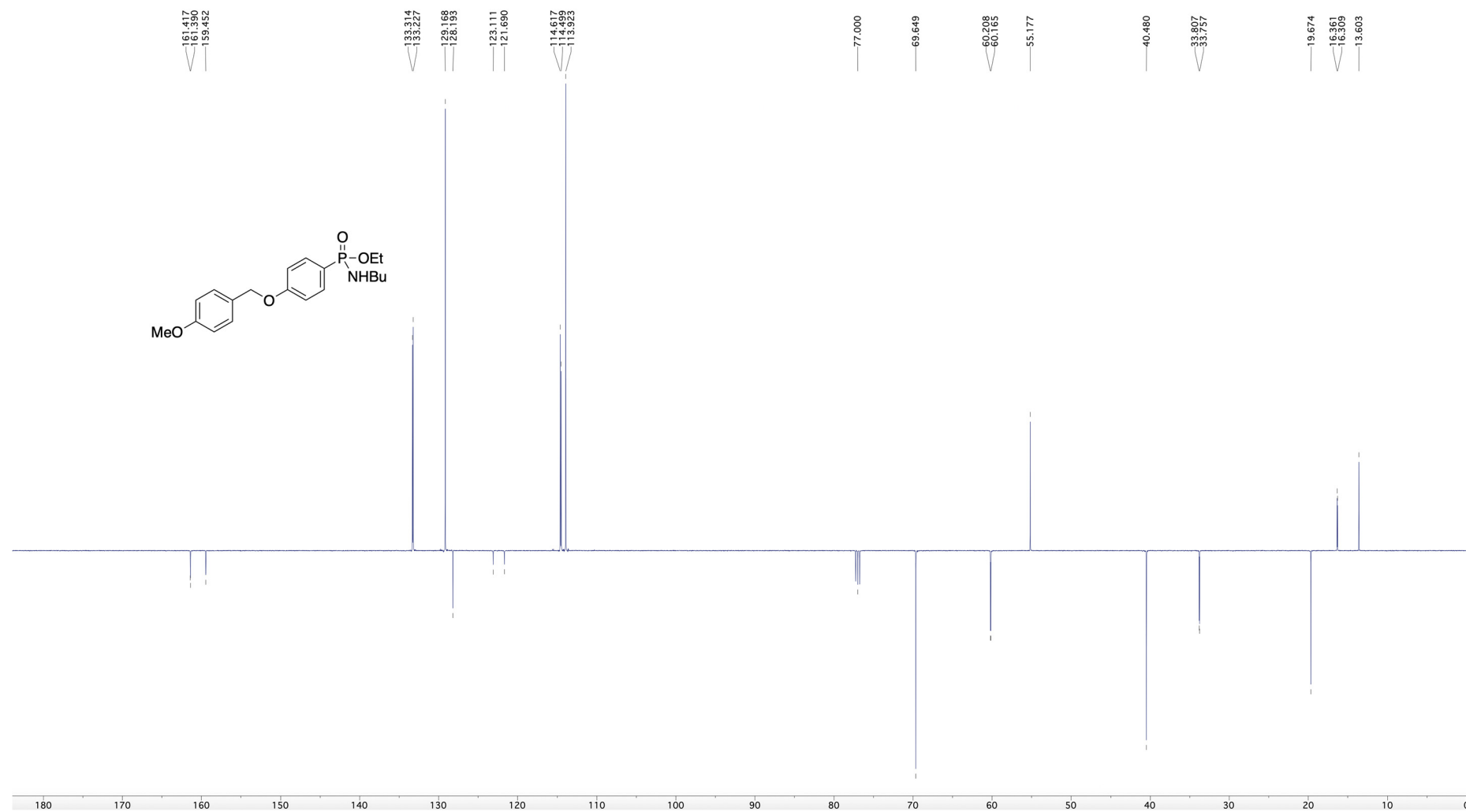


Figure S22. 400 MHz ^1H NMR spectrum of **13c**

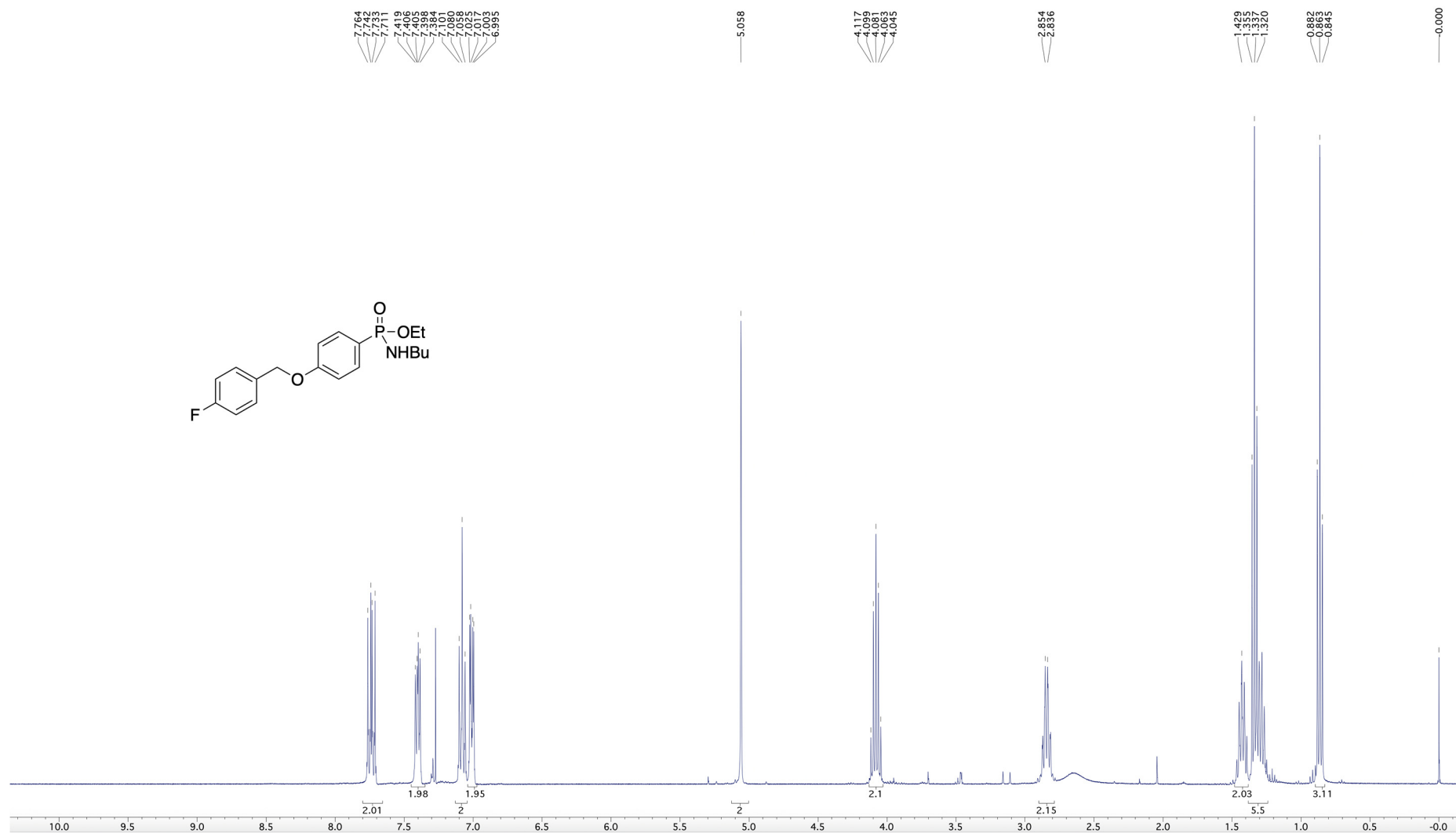


Figure S23. 376 MHz ^{19}F NMR spectrum of **13c**

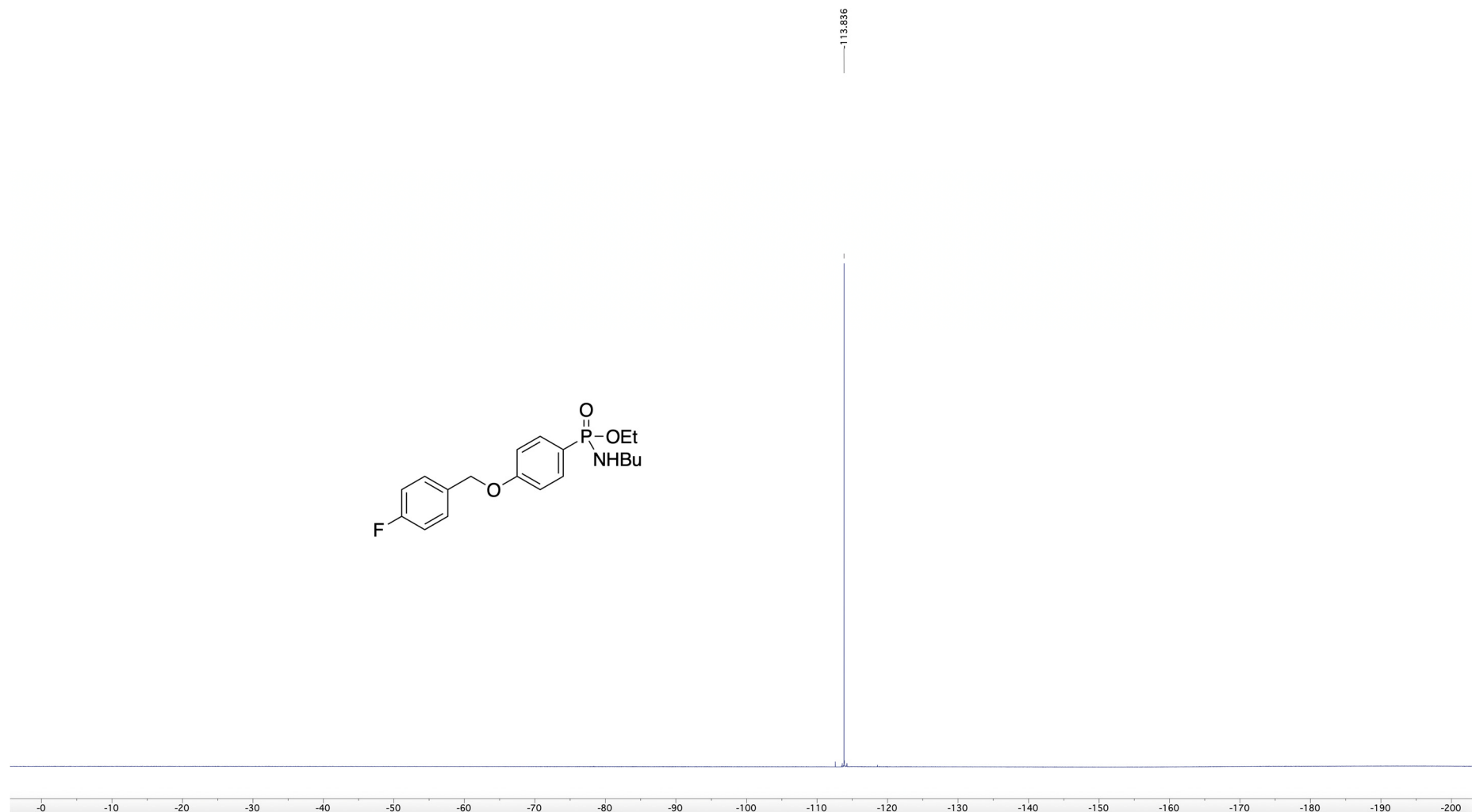


Figure S24. 162 MHz ^{31}P NMR spectrum of **13c**

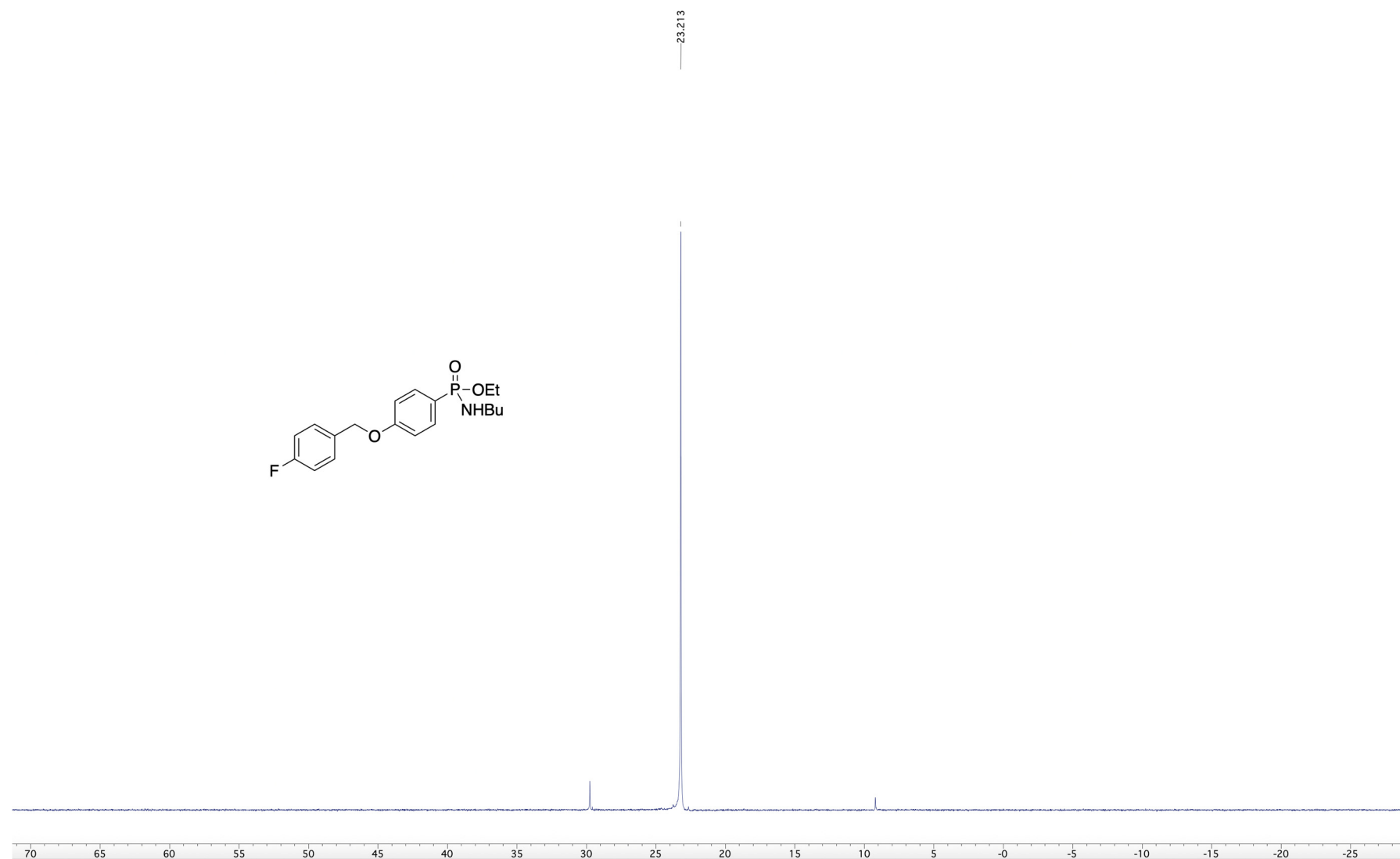


Figure S25. 100 MHz DEPTQ ^{13}C NMR spectrum of **13c**

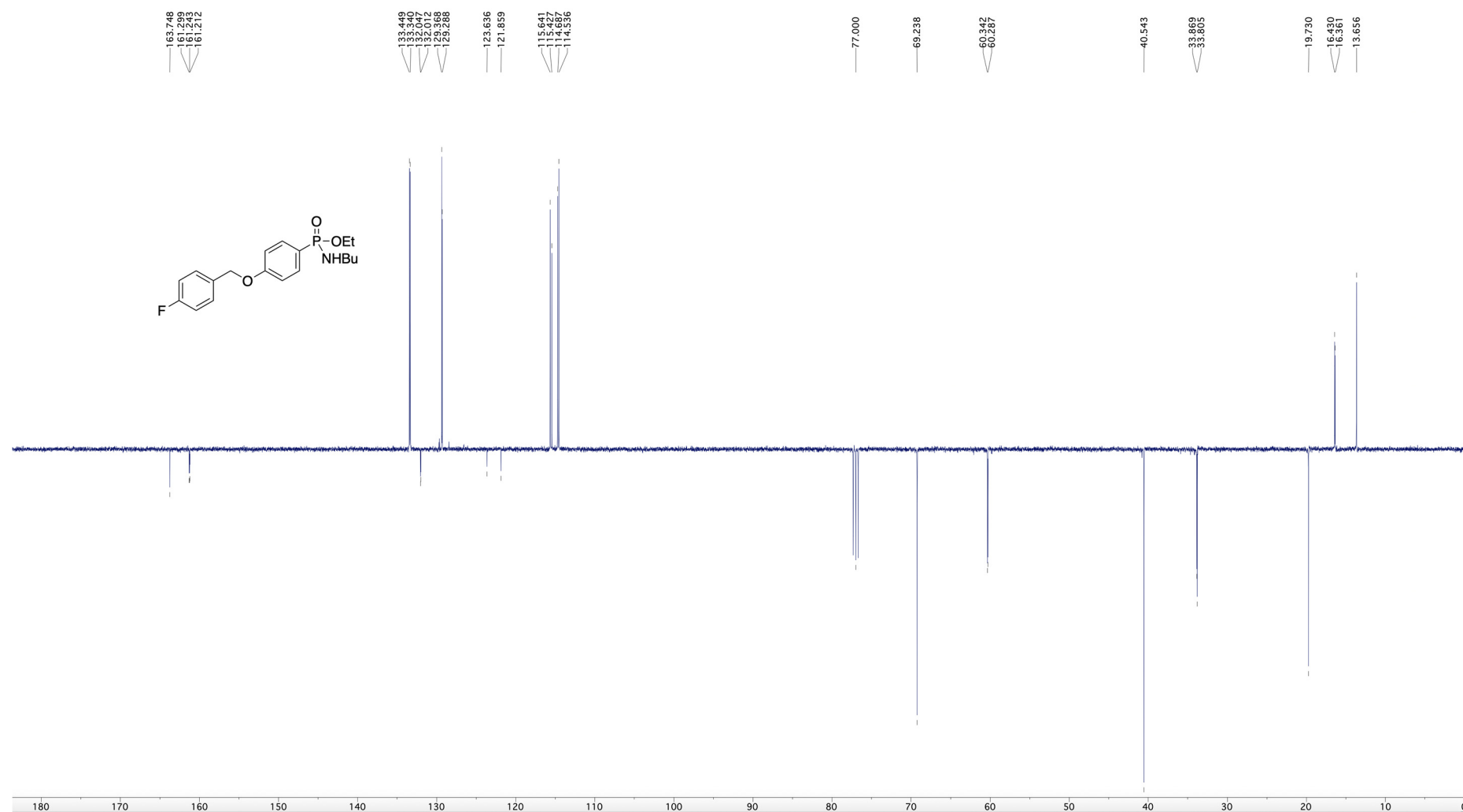


Figure S26. 400 MHz ^1H NMR spectrum of **13d**

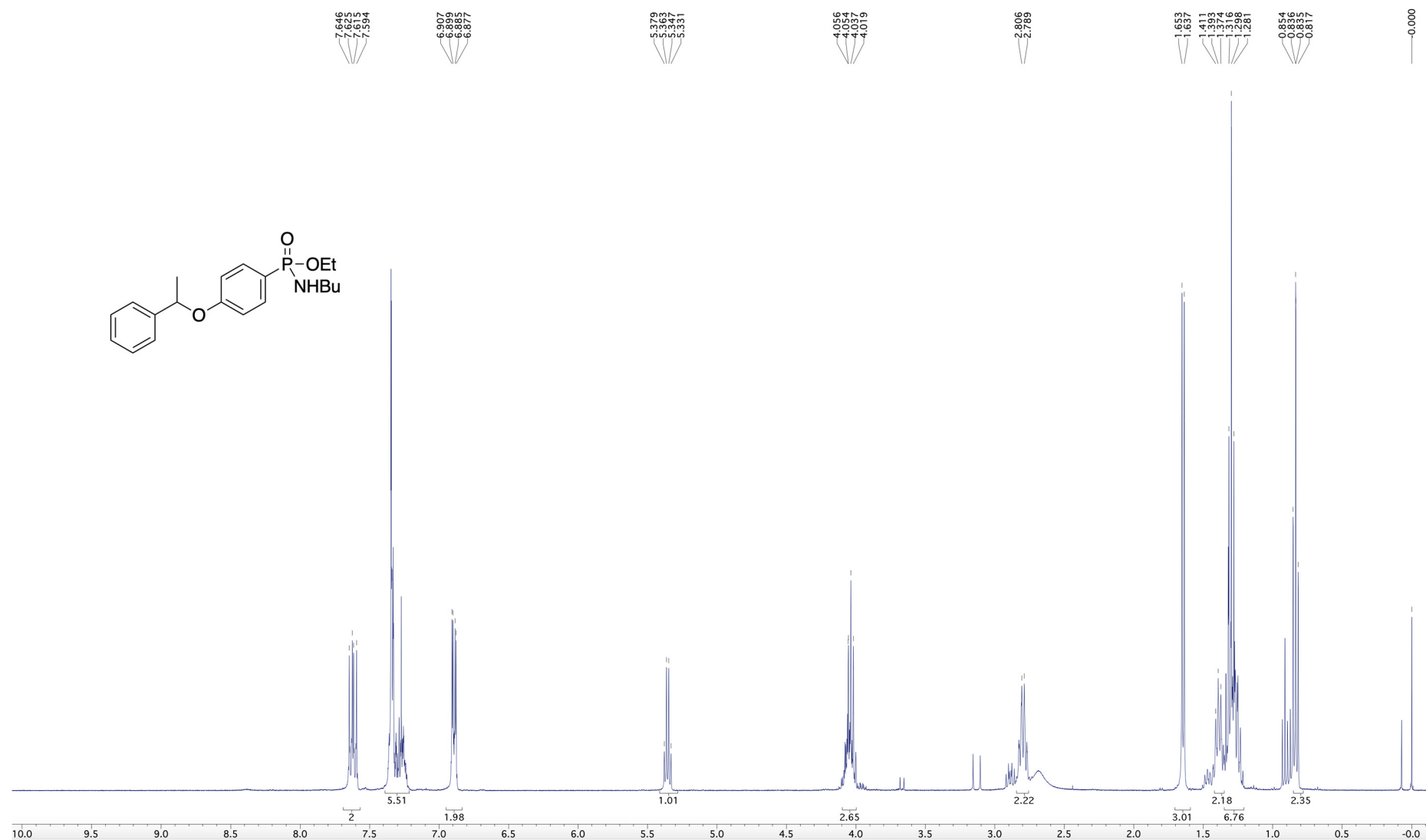


Figure S27. 162 MHz ^{31}P NMR spectrum of **13d**

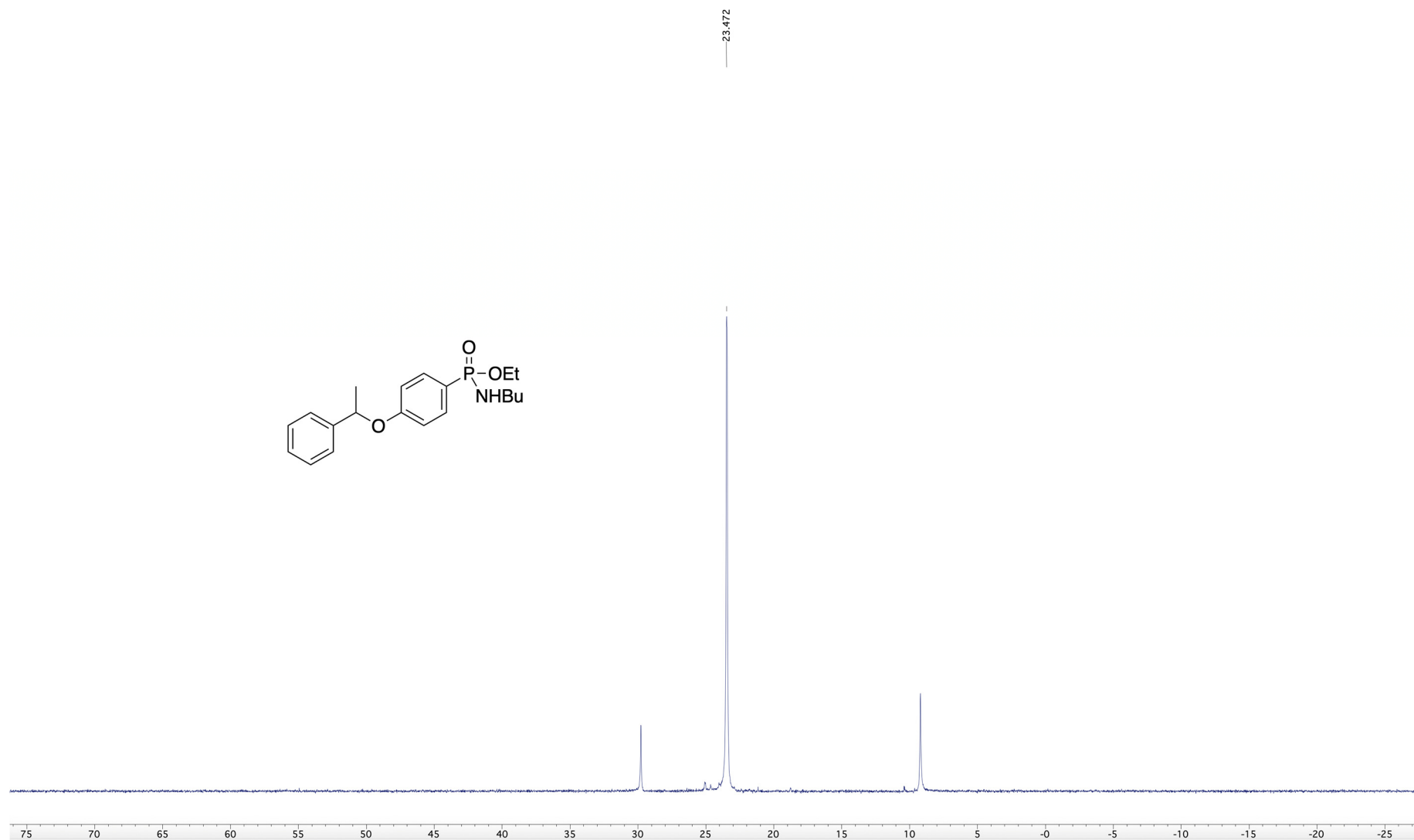


Figure S28. 125 MHz DEPTQ ^{13}C NMR spectrum of **13d**

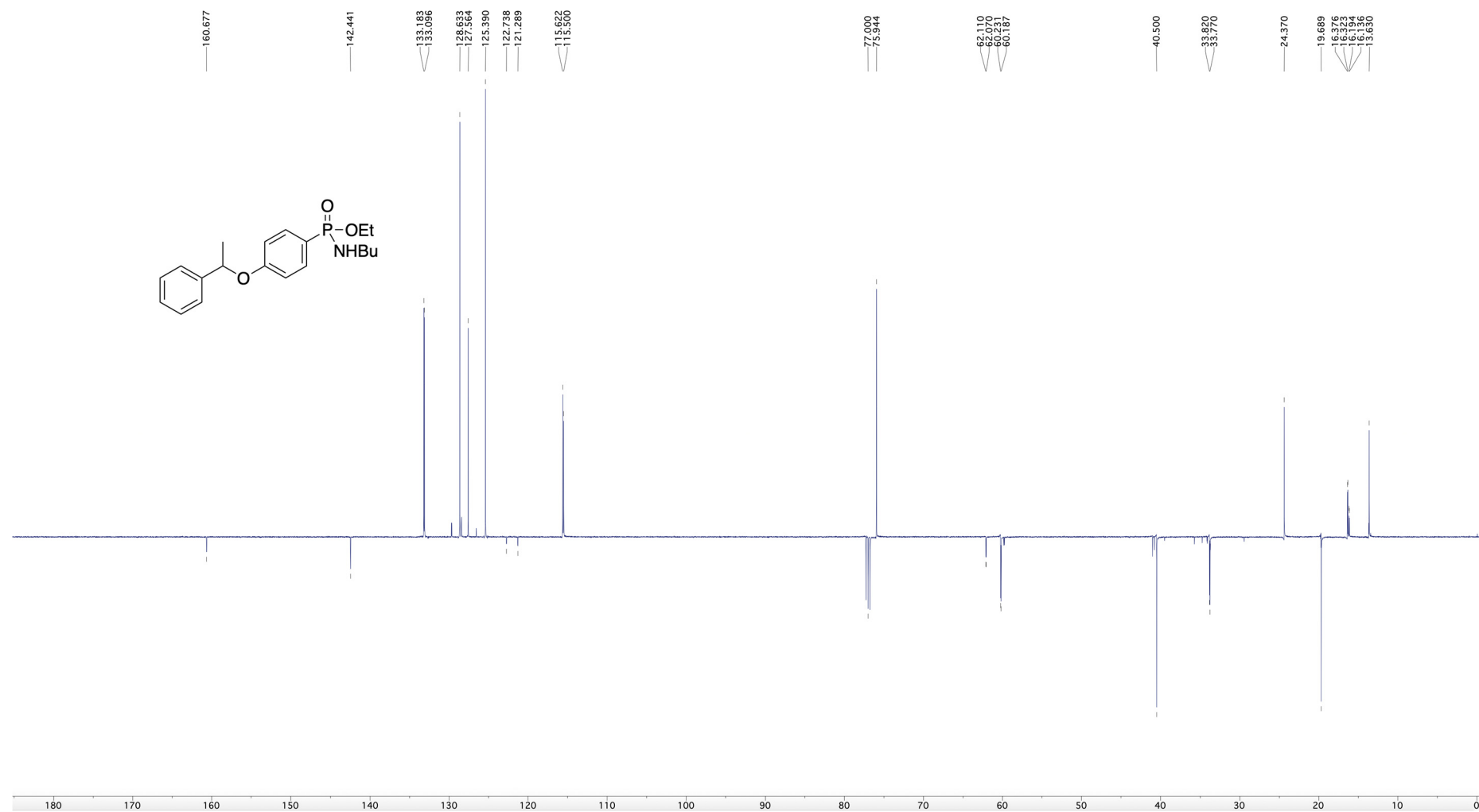


Figure S29. 400 MHz ^1H NMR spectrum of **13e**

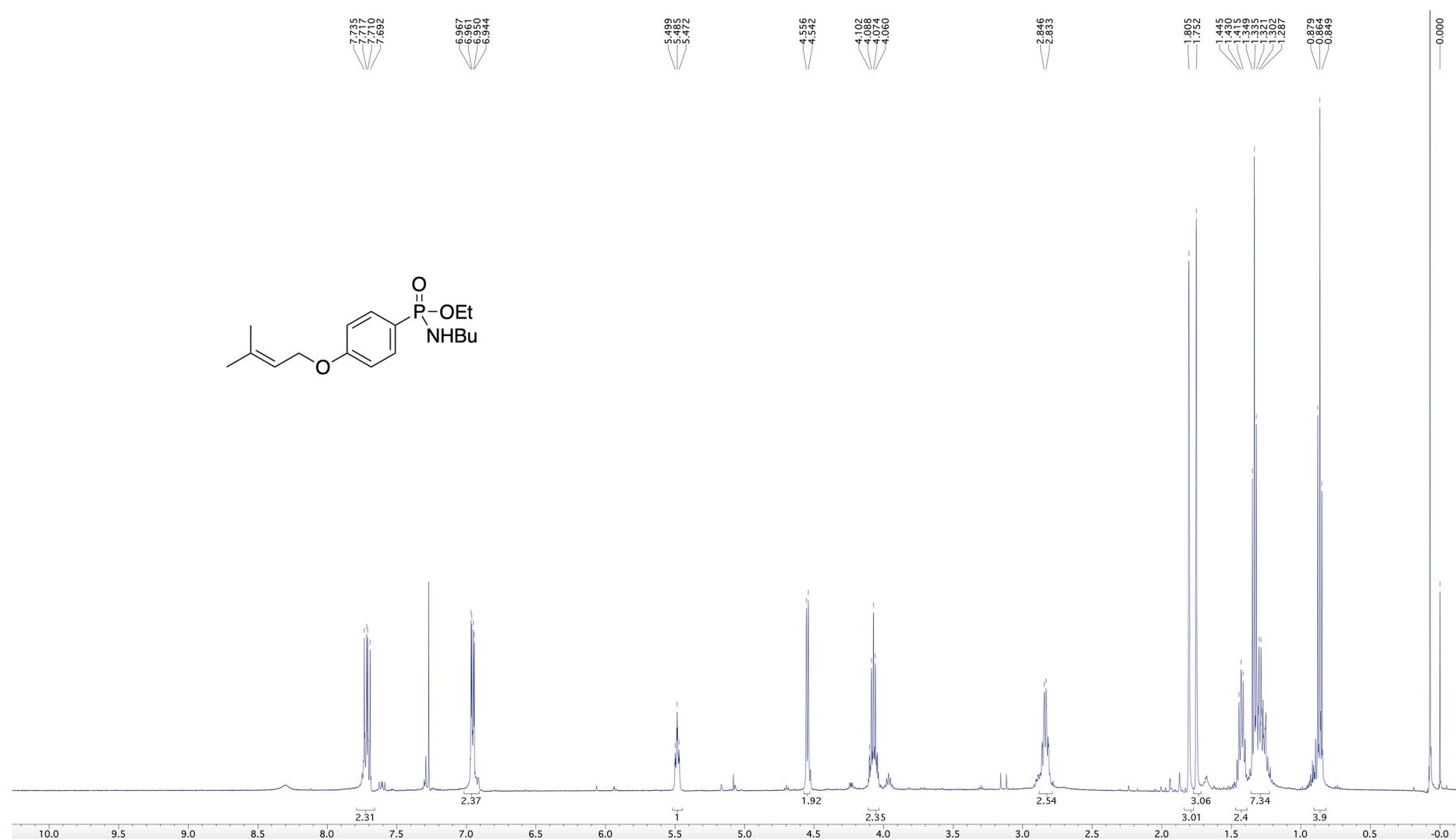


Figure S30. 162 MHz ^{31}P NMR spectrum of **13e**

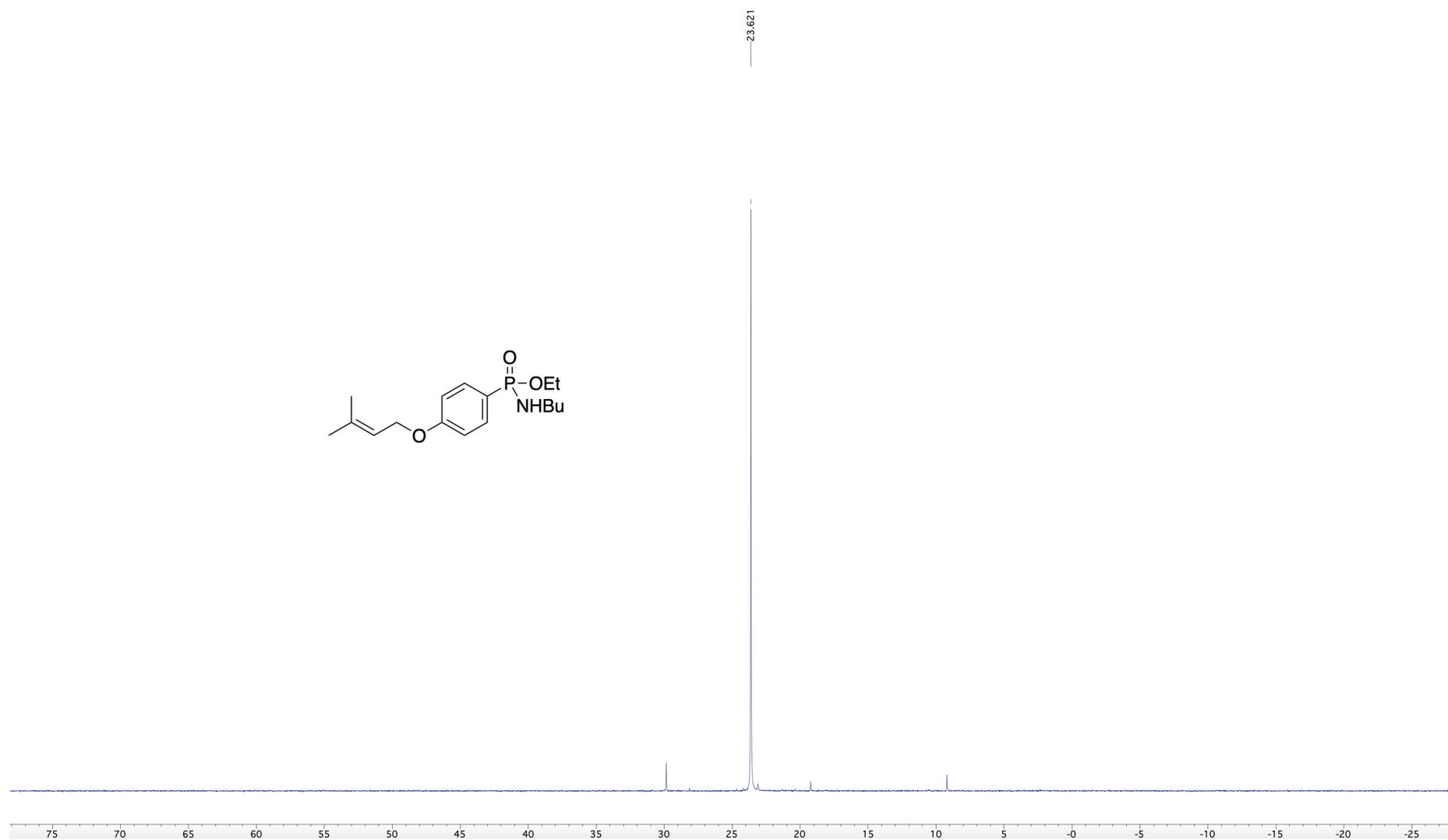


Figure S31. 125 MHz DEPTQ ^{13}C NMR spectrum of **13e**

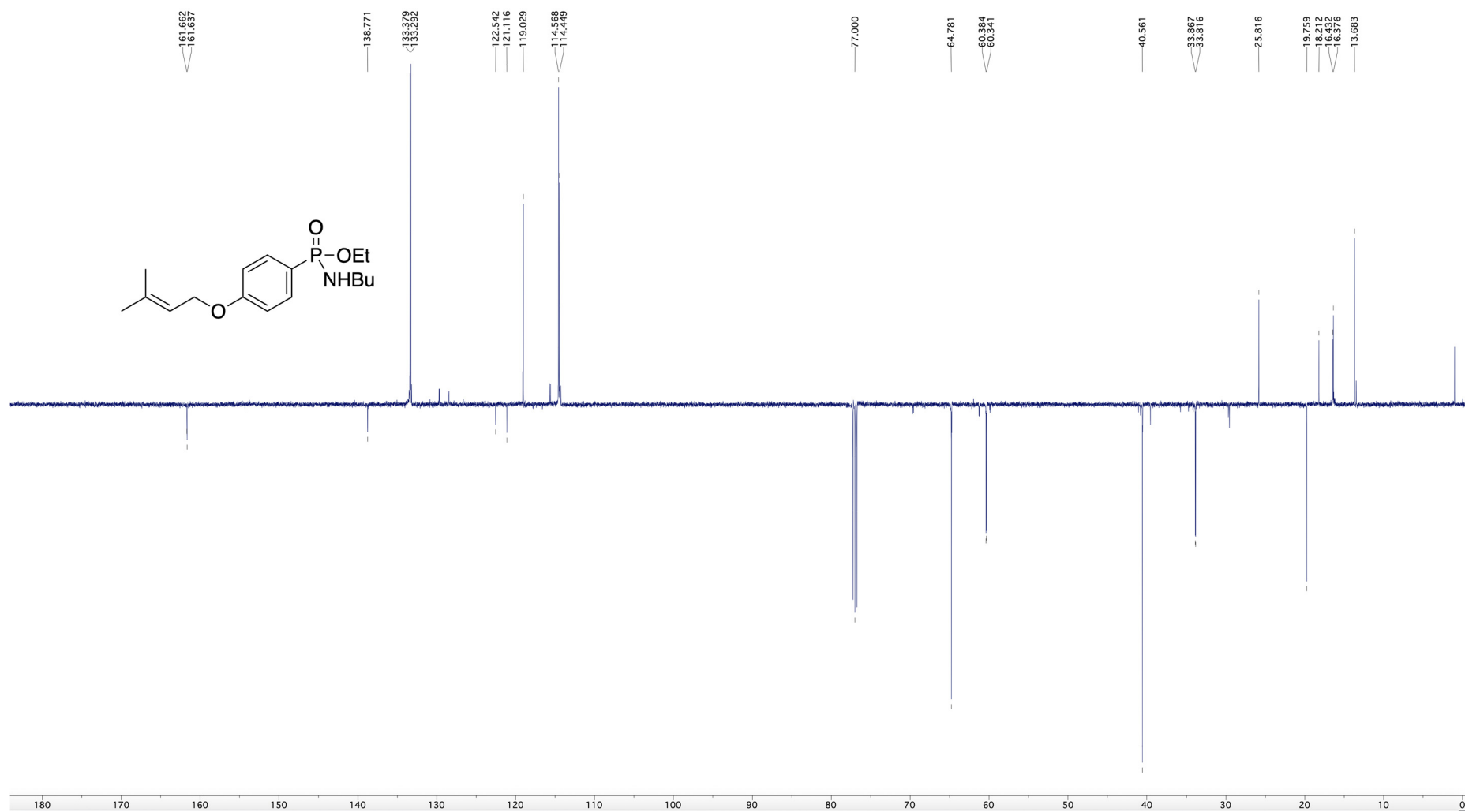


Figure S32. 400 MHz ^1H NMR spectrum of **14a**

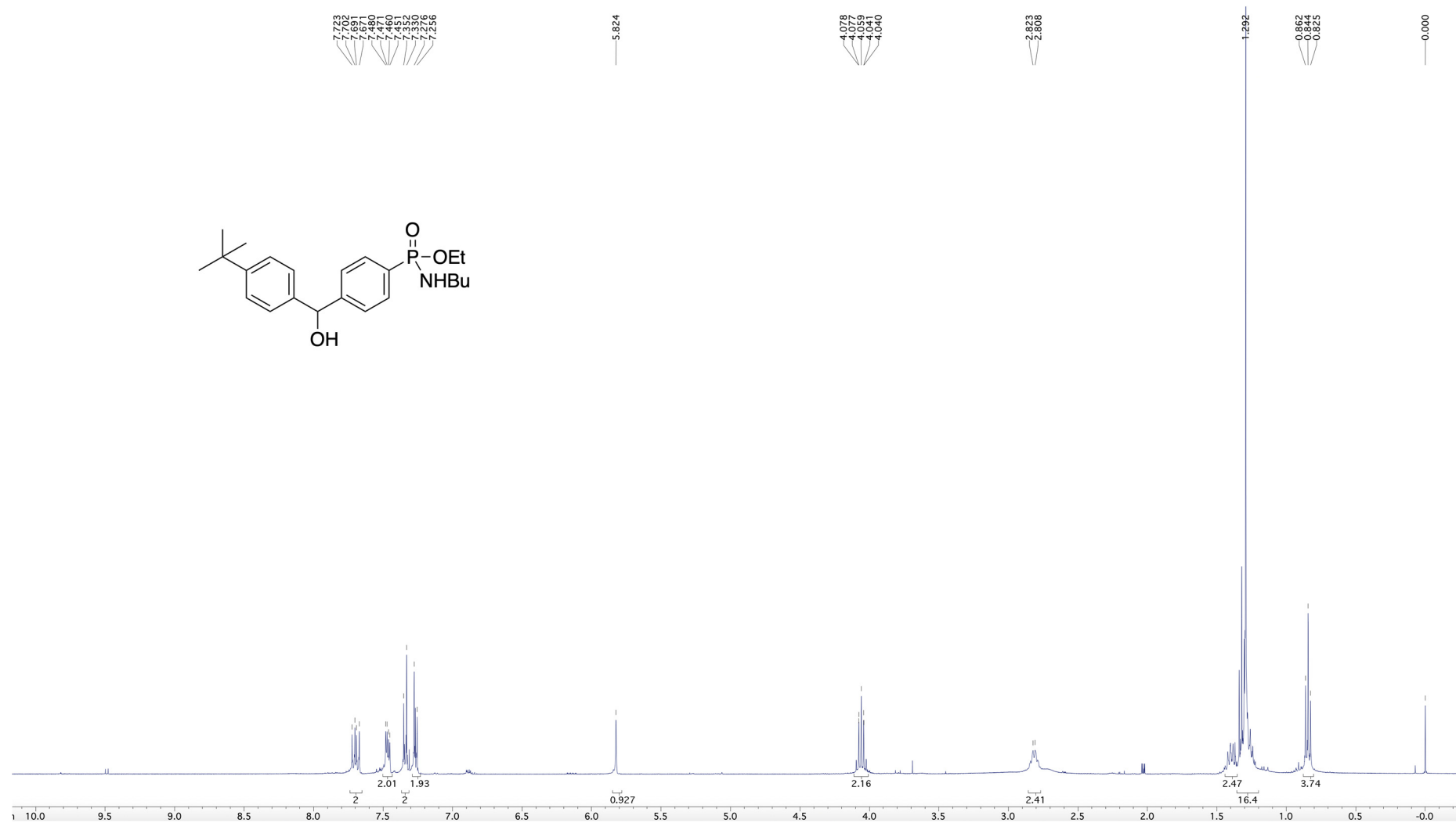


Figure S33. 162 MHz ^{31}P NMR spectrum of **14a**

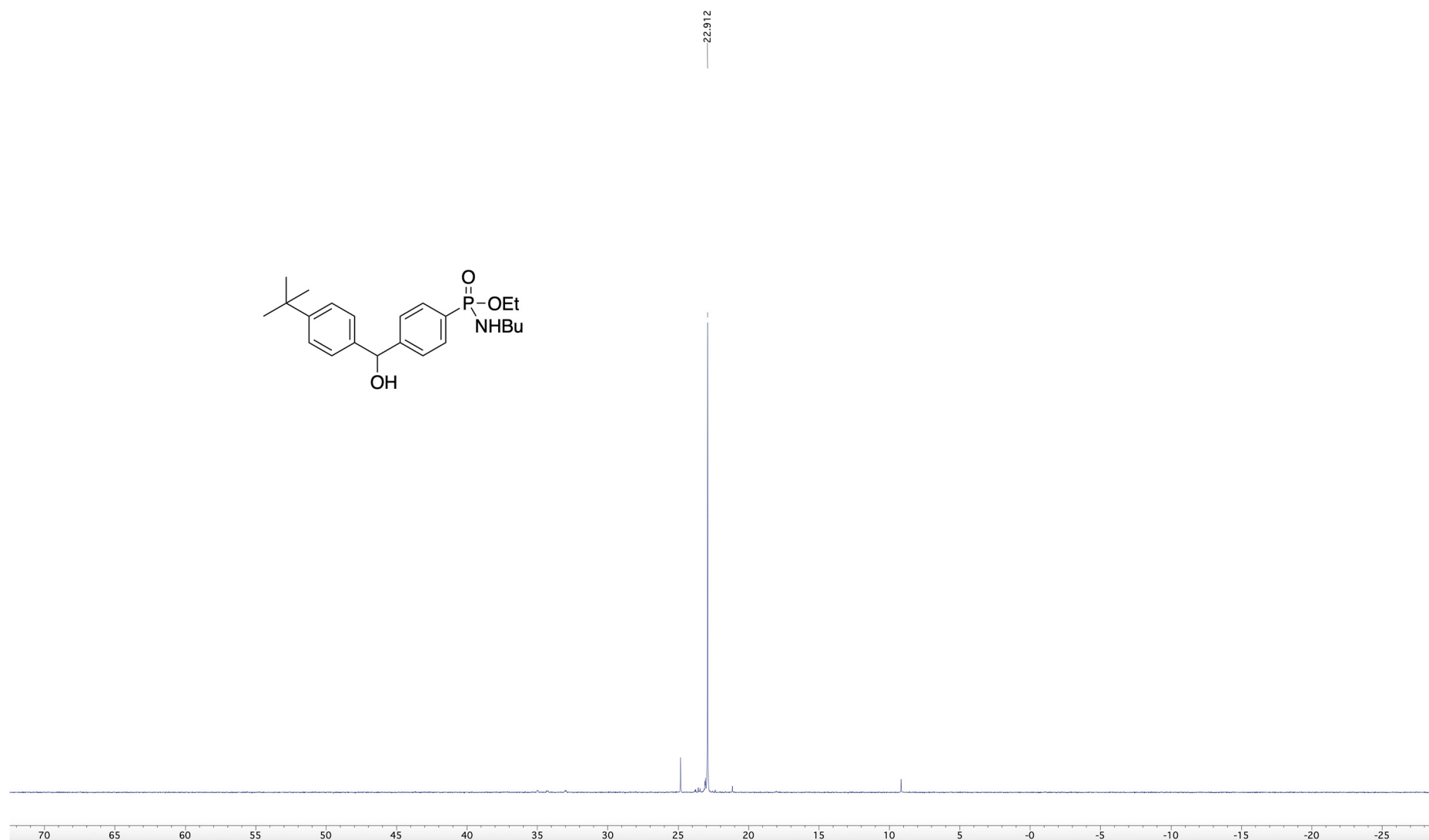


Figure S34. 100 MHz DEPTQ ^{13}C NMR spectrum of **14a**

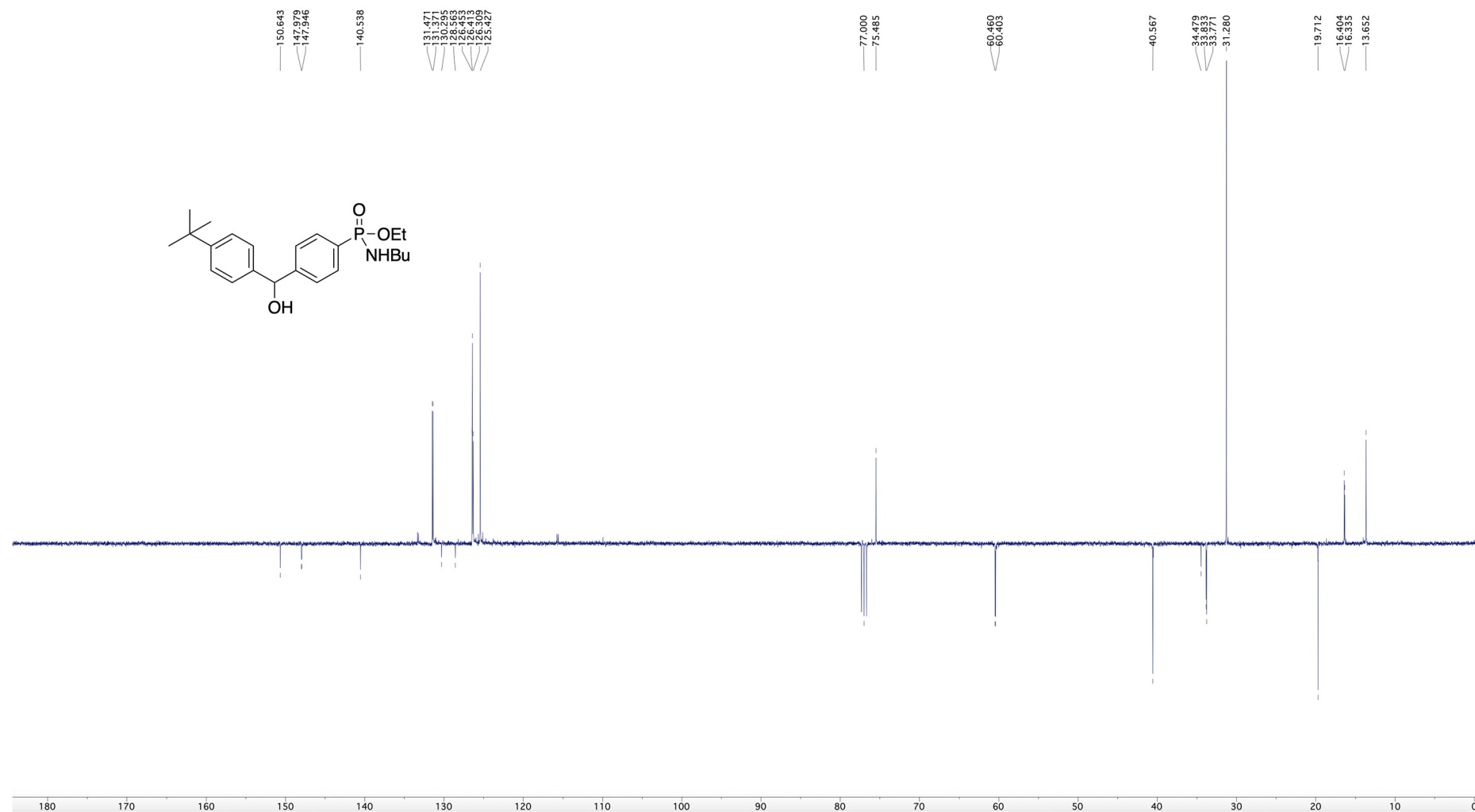


Figure S35. 400 MHz ^1H NMR spectrum of **14b**

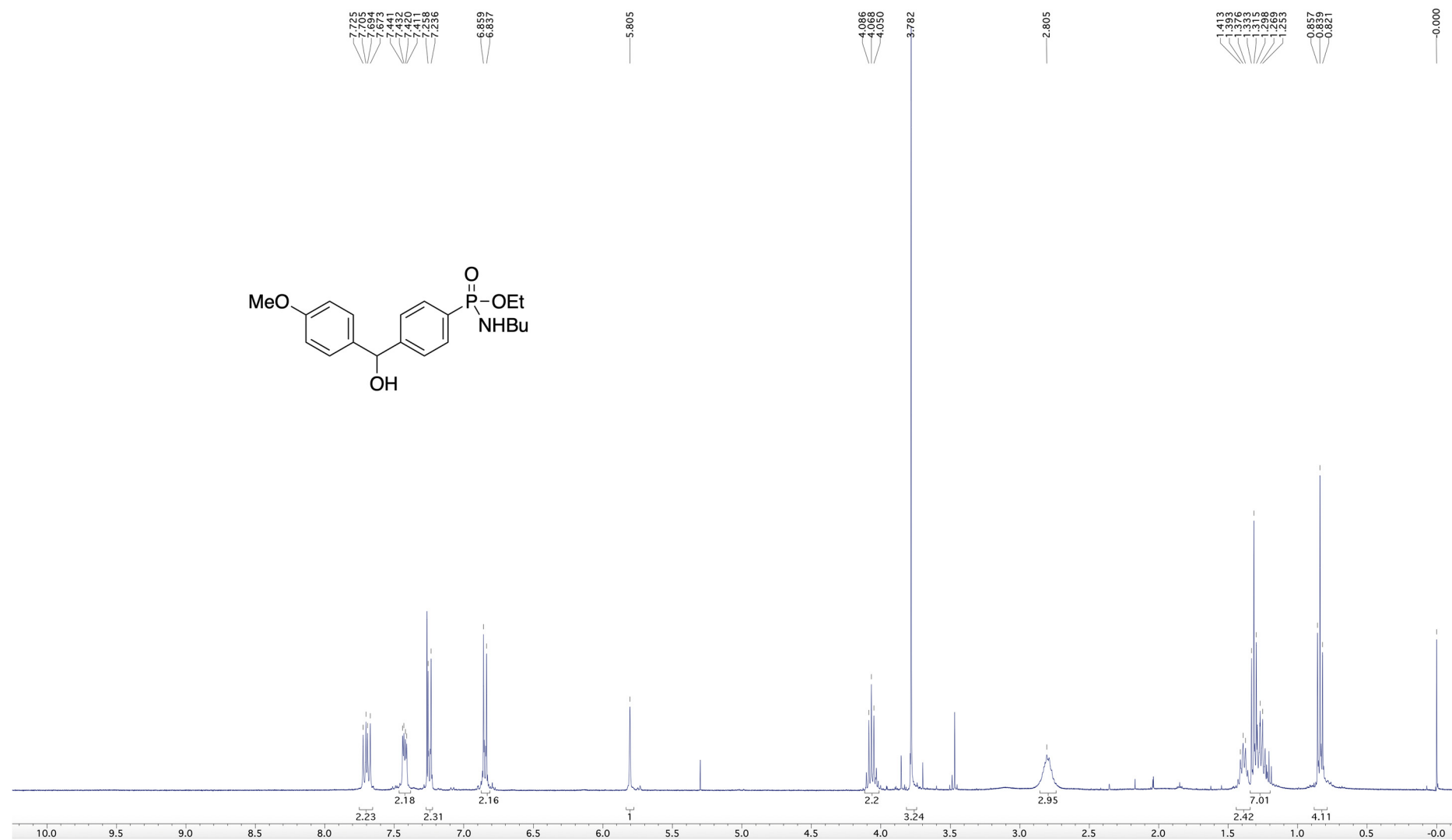


Figure S36. 162 MHz ^{31}P NMR spectrum of **14b**

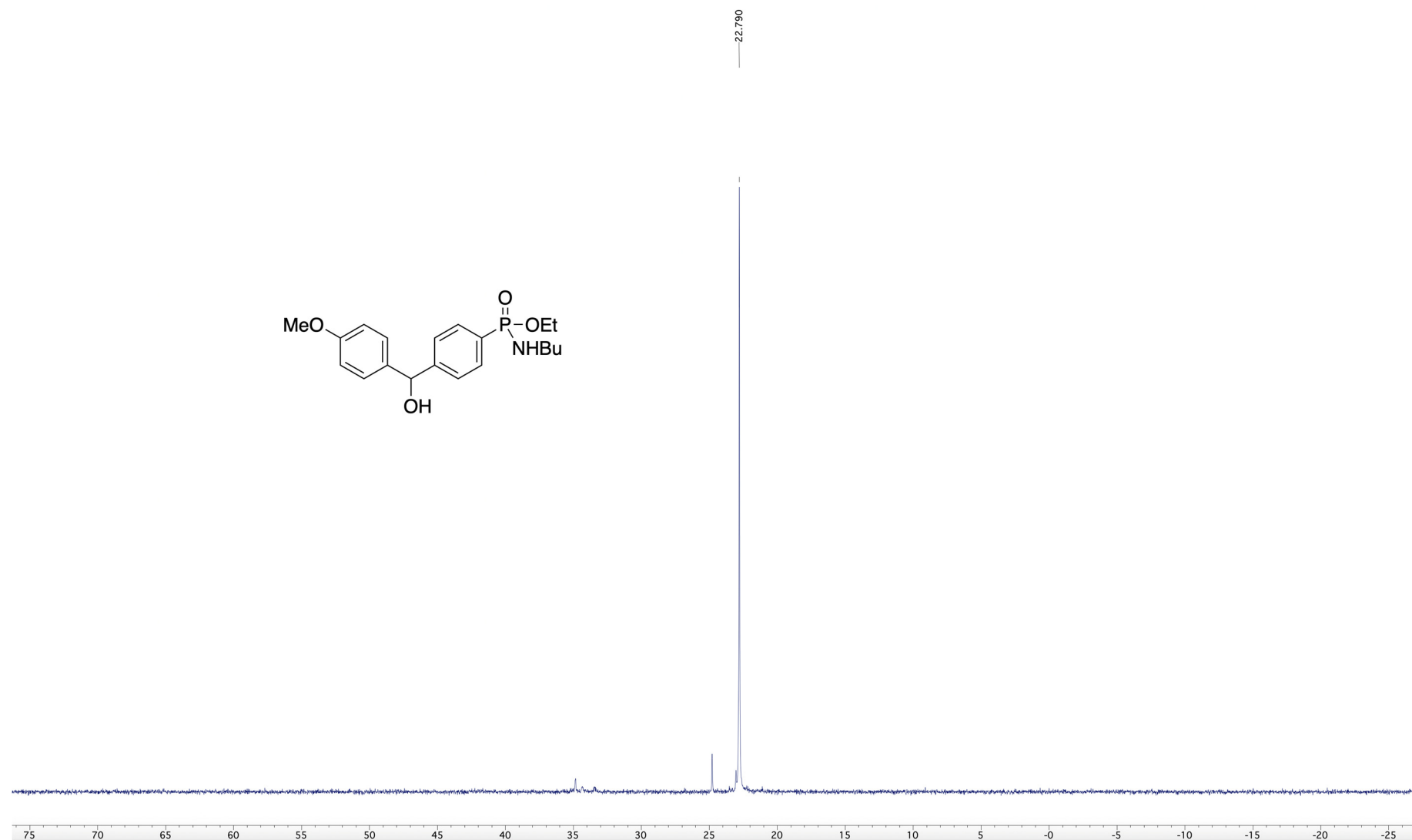


Figure S37. 100 MHz DEPTQ ^{13}C NMR spectrum of **14b**

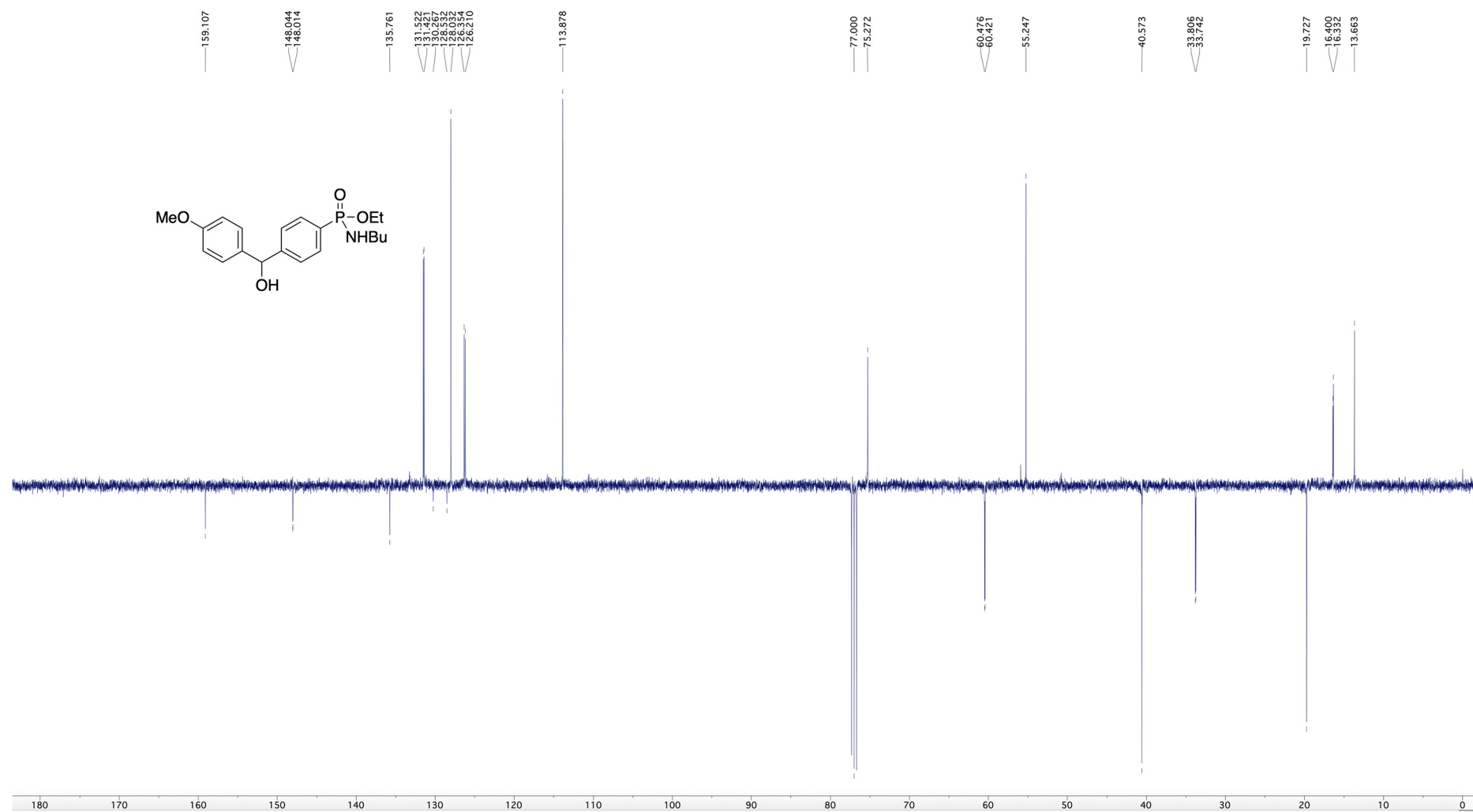


Figure S38. 400 MHz ^1H NMR spectrum of **14c**

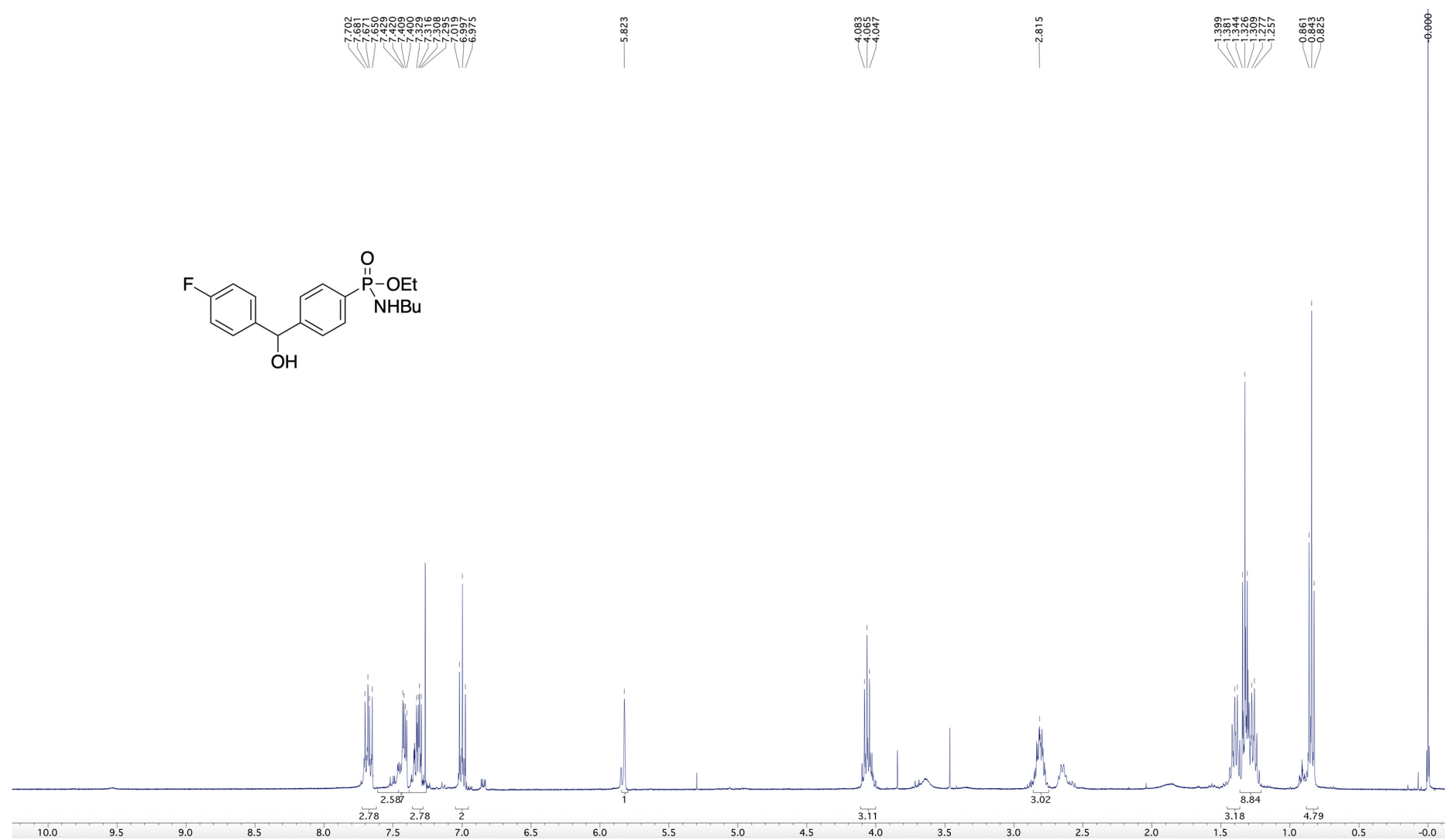


Figure S39. 376 MHz ^{19}F NMR spectrum of **14c**

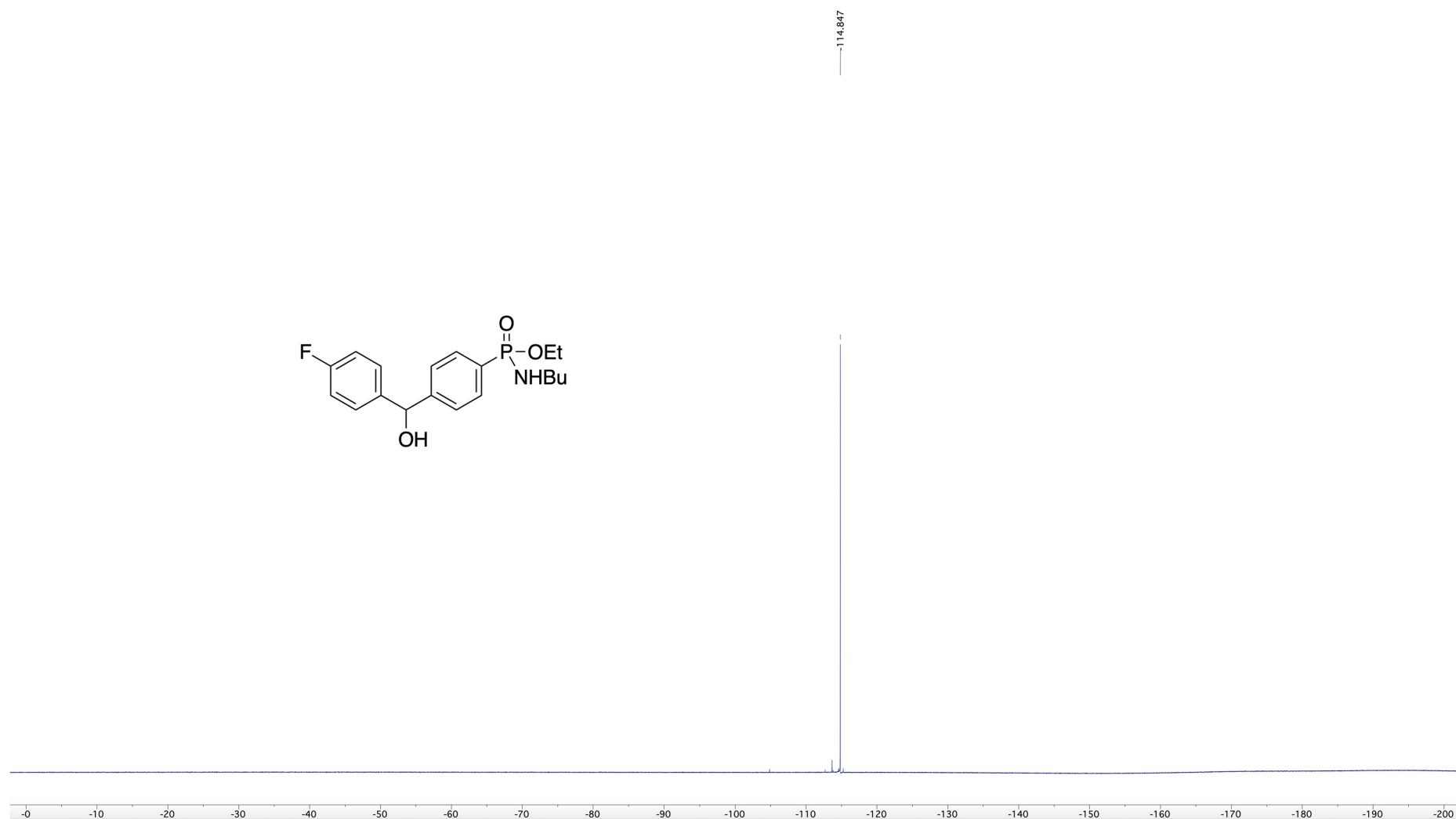


Figure S40. 162 MHz ^{31}P NMR spectrum of **14c**

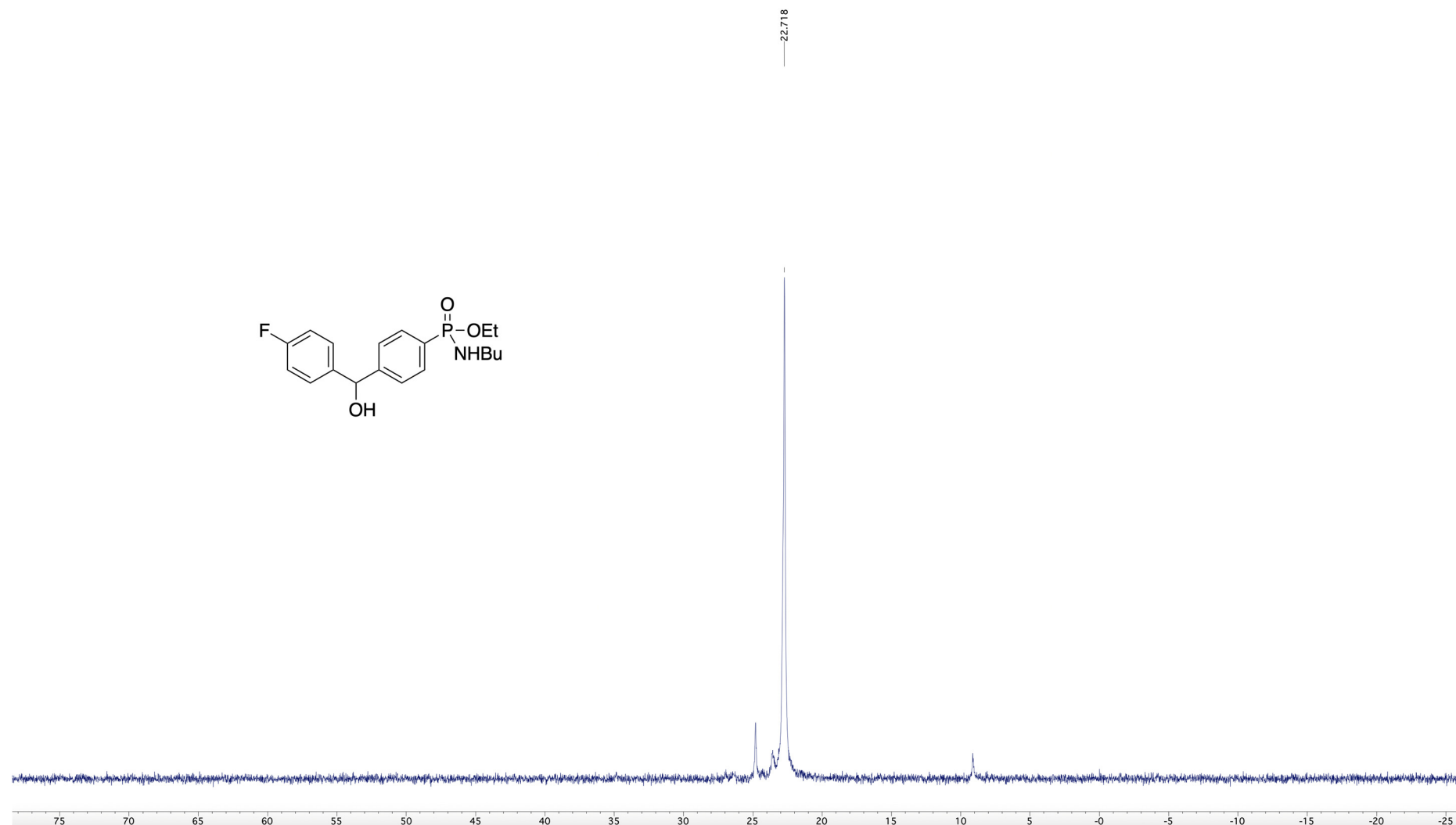


Figure S41. 125 MHz DEPTQ ^{13}C NMR spectrum of **14c**

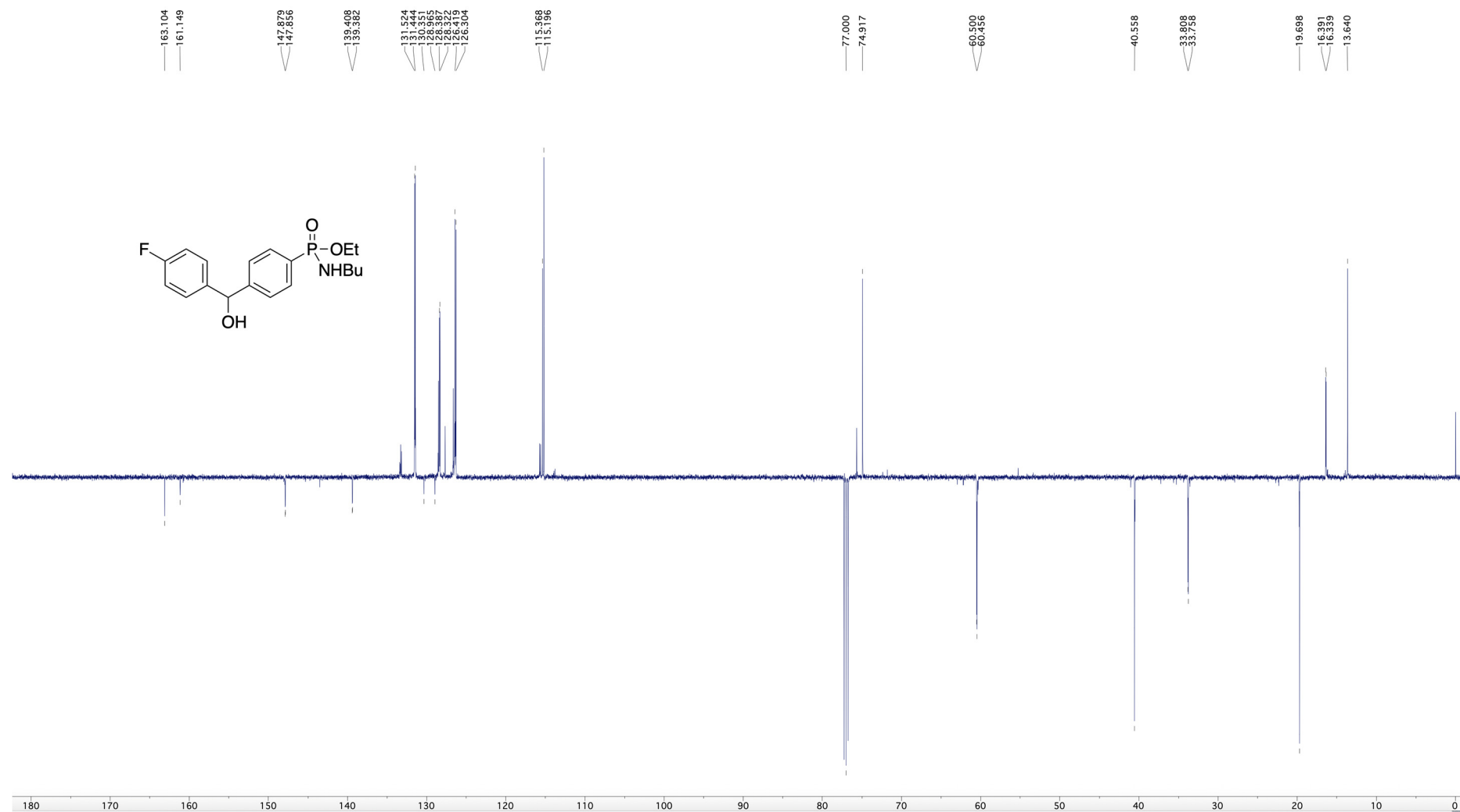


Figure S42. 300 MHz ^1H NMR spectrum of **14d**

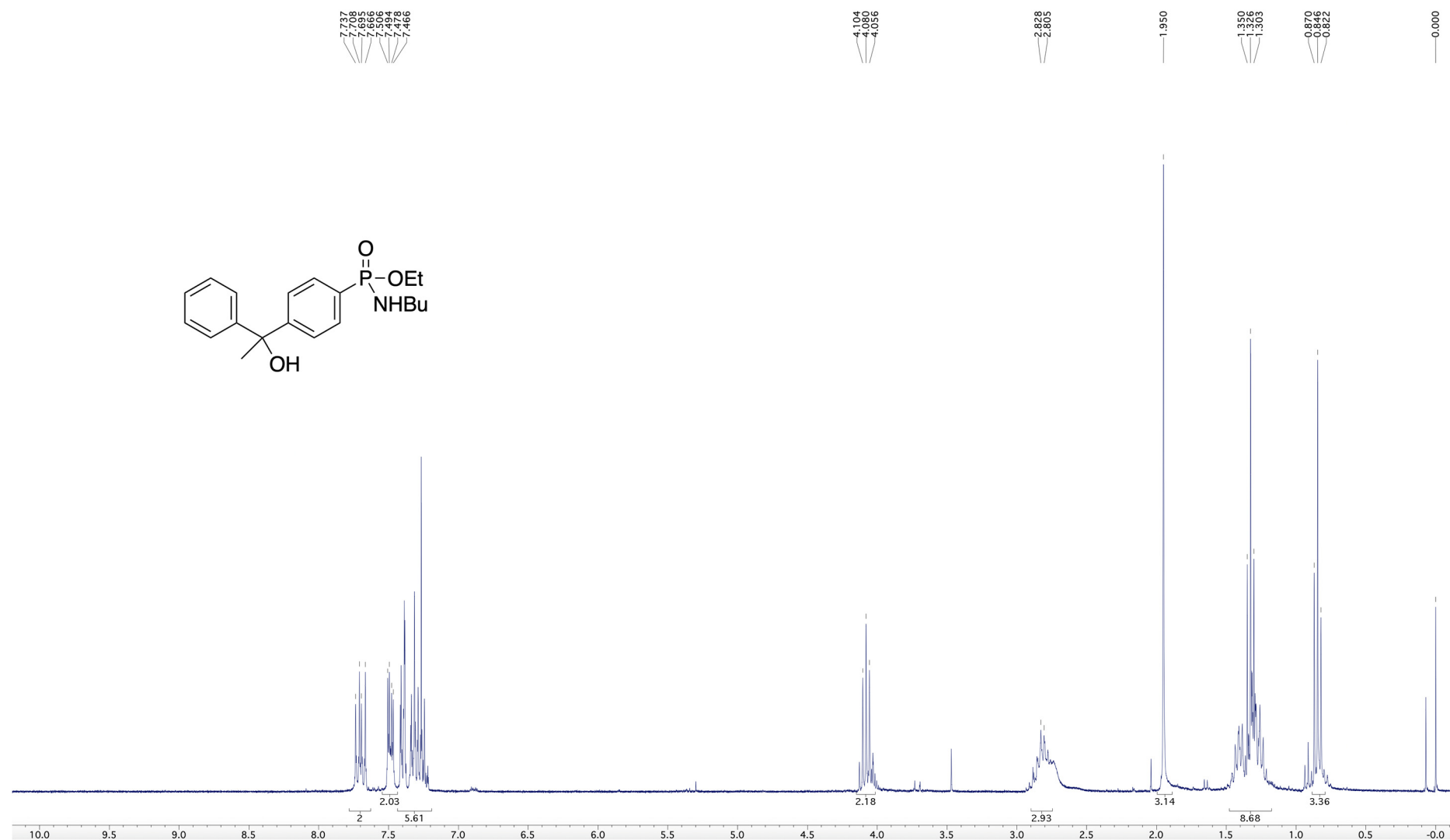
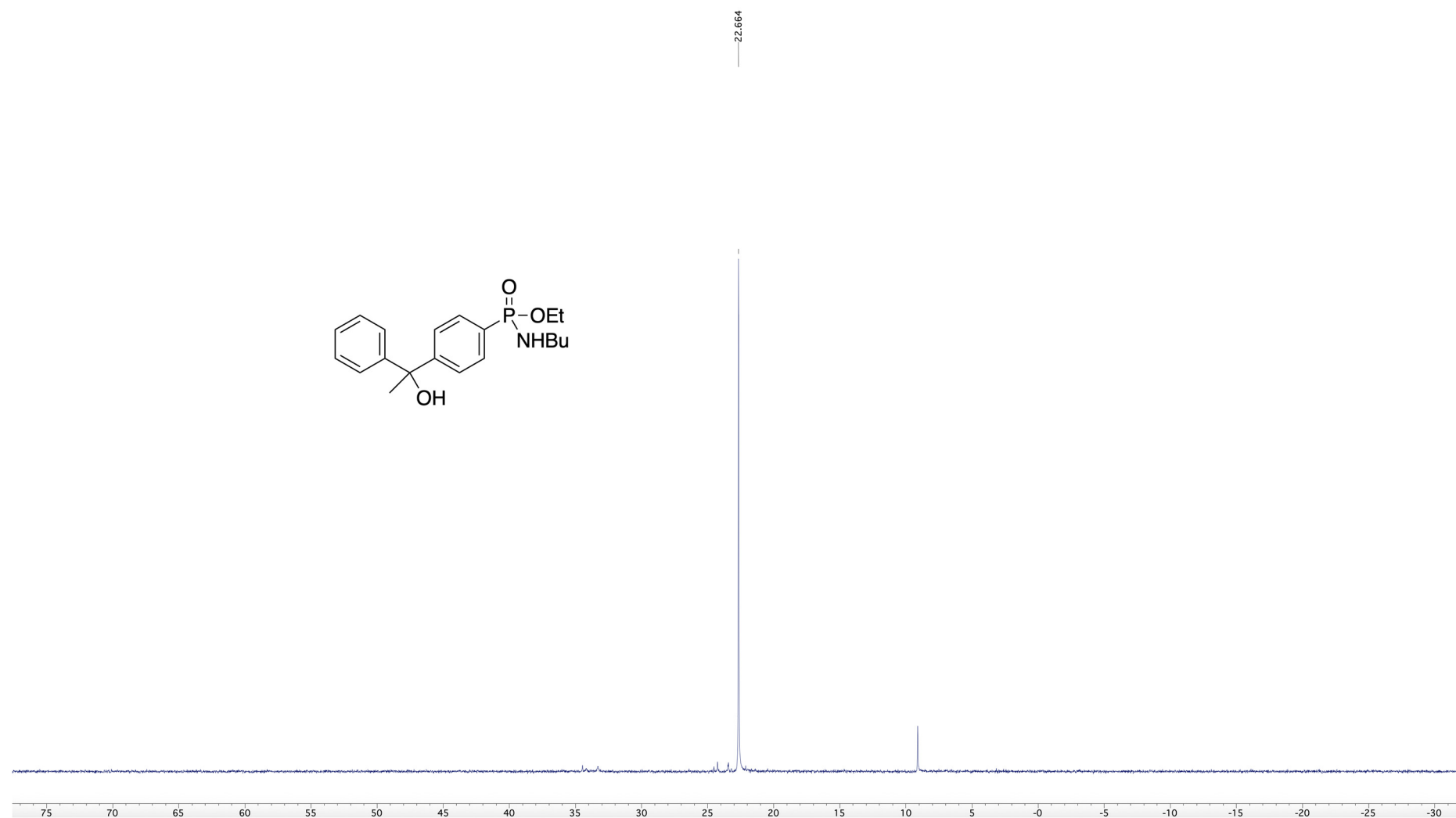


Figure S43. 162 MHz ^{31}P NMR spectrum of **14d**



Chemical structure: CCOP(=O)(c1ccc(cc1)C(C)(O)c2ccccc2)N

¹³C NMR peaks (ppm):

Peak (ppm)	Assignment
151.885, 151.884	Aromatic C-O
147.365	Aromatic C-O
131.314, 130.713, 130.673, 129.399, 129.323, 129.291, 128.991, 128.930, 128.748	Aromatic C
77.000, 76.999, 76.999	CDCl ₃ solvent
68.494, 68.377	CH-OH
40.588	CH ₃ -P
33.848, 33.785	CH ₂ -P
30.620	CH ₃ -P
19.724	CH ₃ -N
16.425, 16.355	CH ₂ -N
13.662	CH ₃ -N

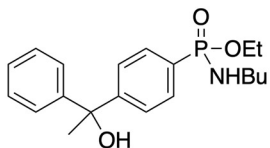


Figure S46. 400 MHz ^1H NMR spectrum of **16**

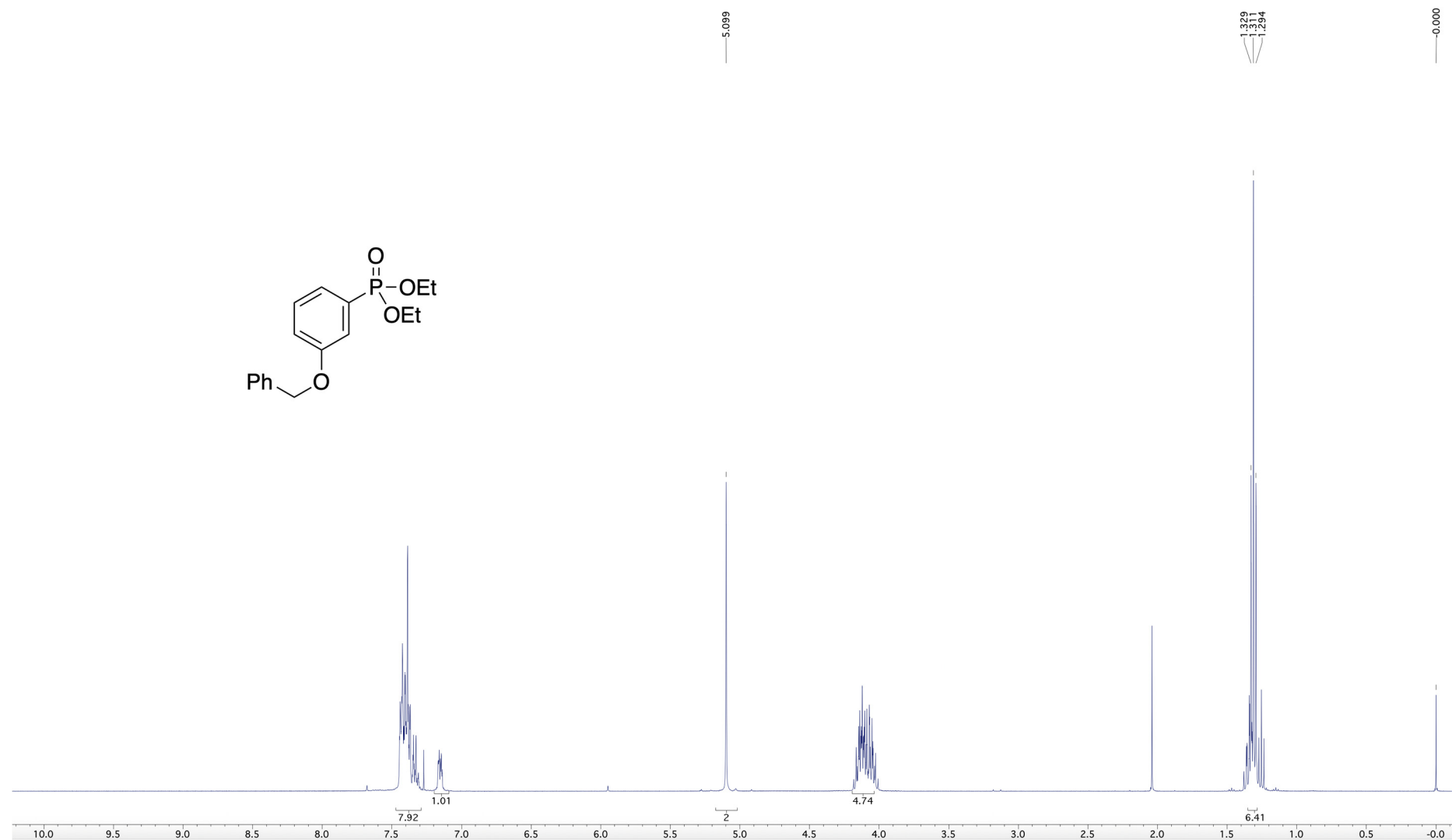


Figure S45. 162 MHz ^{31}P NMR spectrum of **16**

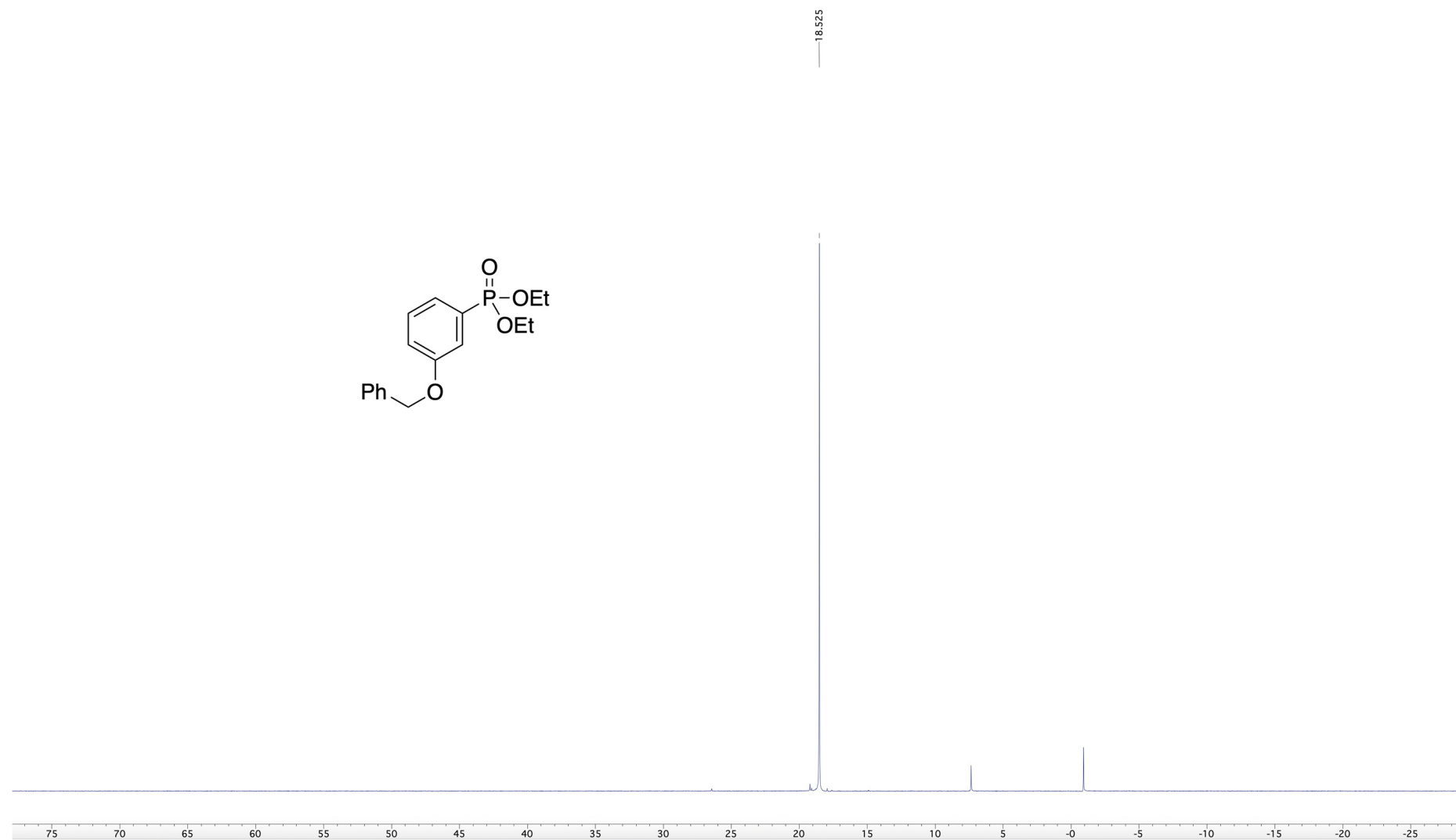


Figure S47. 125 MHz DEPTQ ^{13}C NMR spectrum of **16**

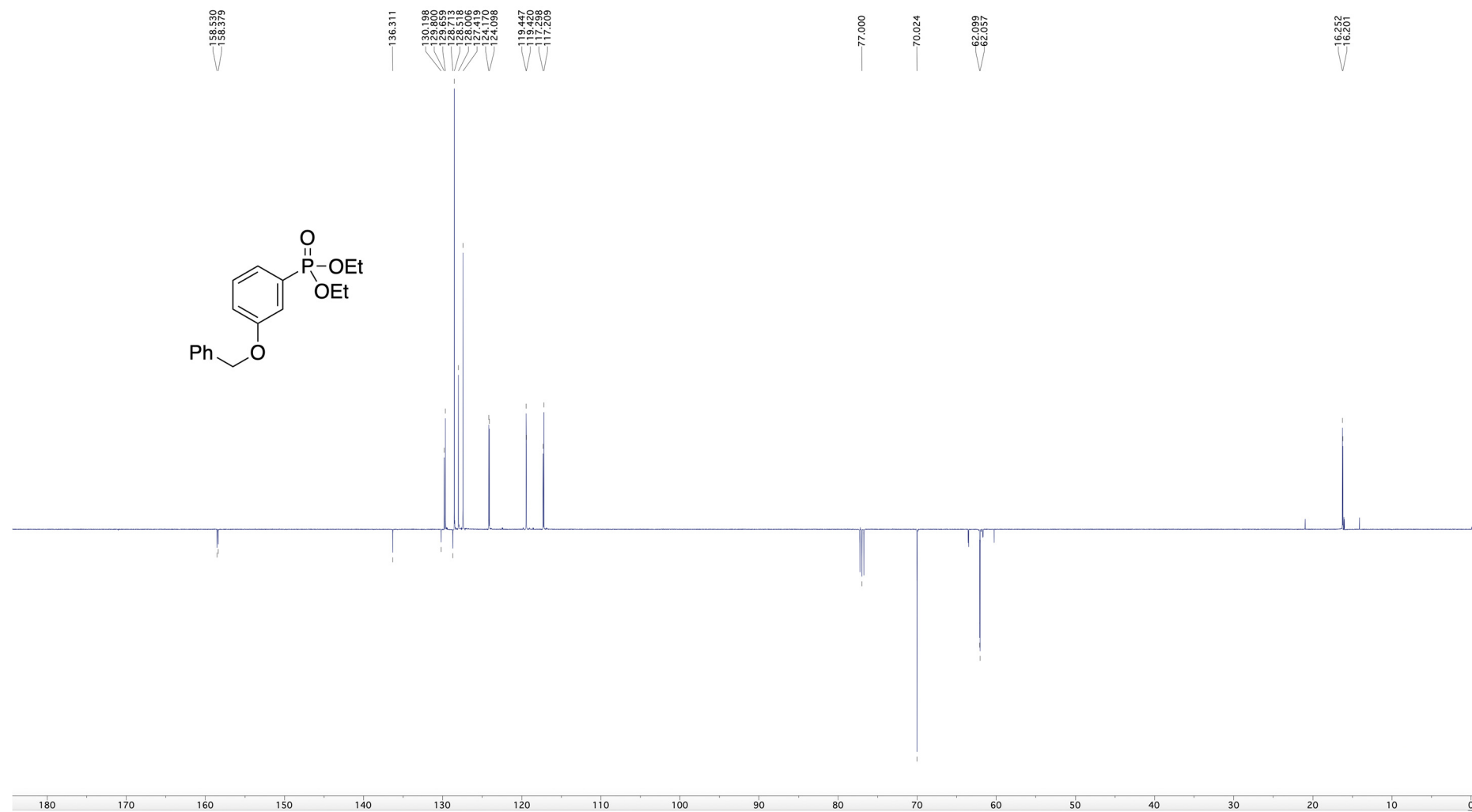


Figure S48. 400 MHz ^1H NMR spectrum of **17**

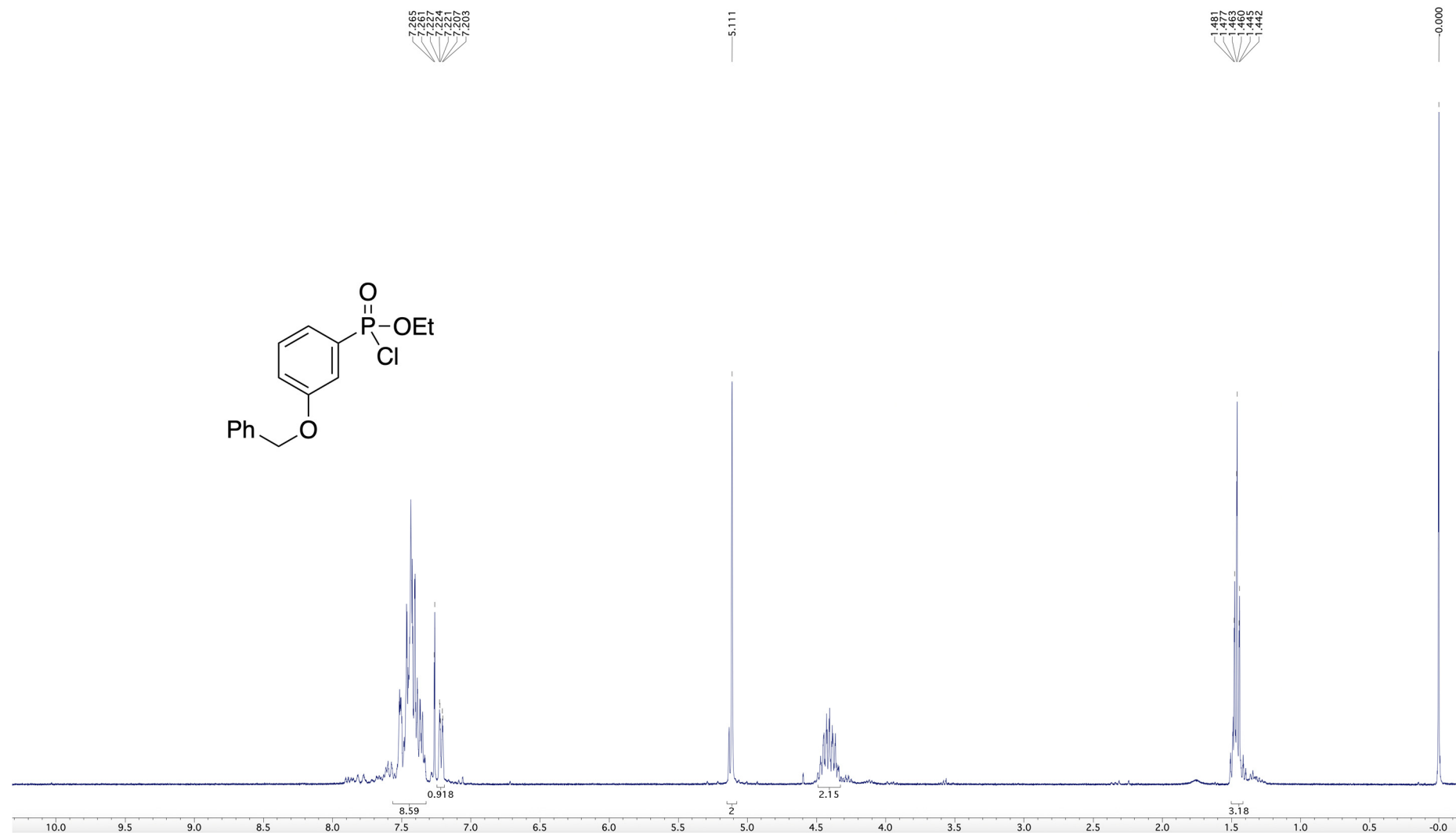


Figure S49. 162 MHz ^{31}P NMR spectrum of **17**

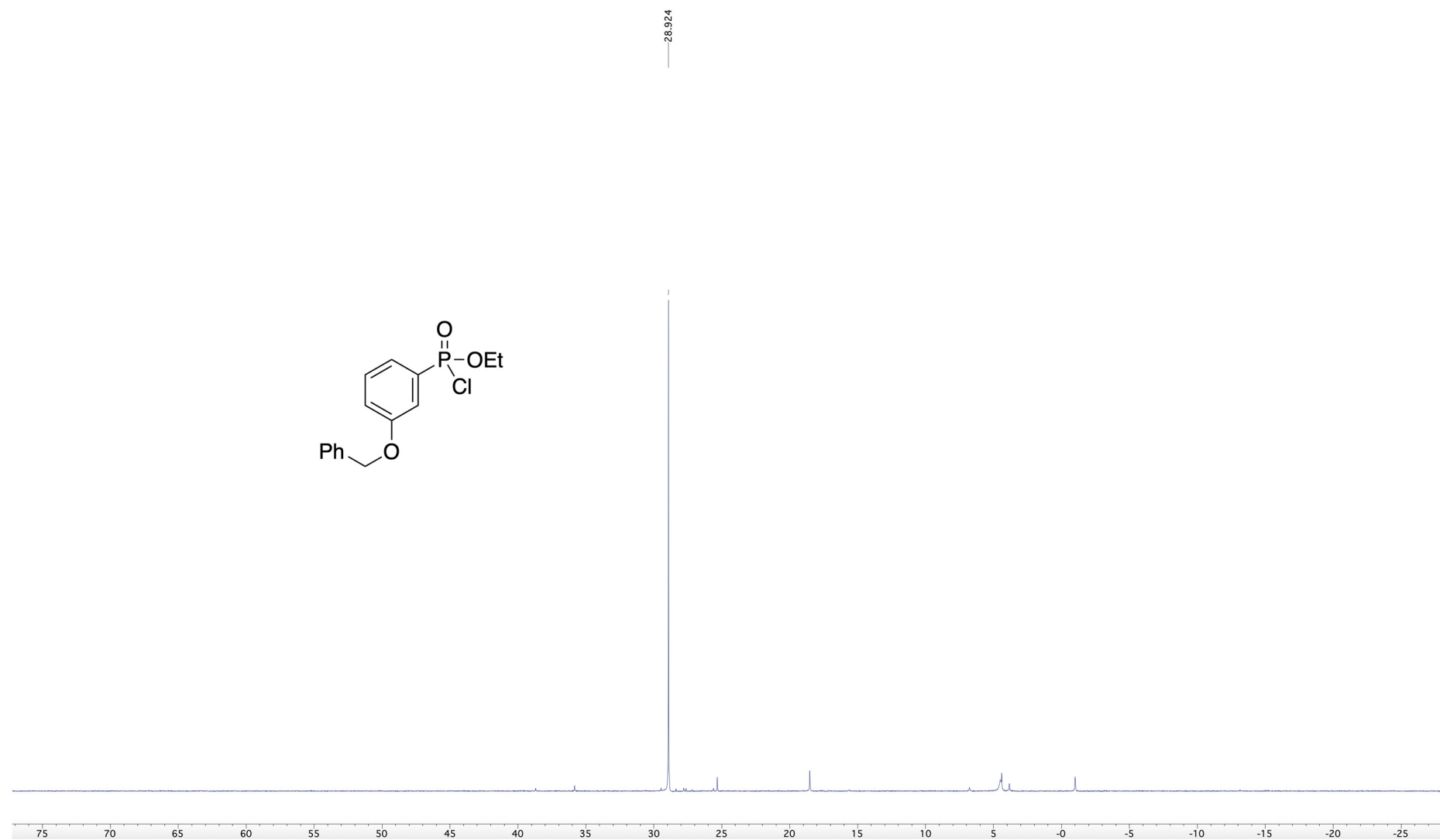


Figure S50. 100 MHz DEPTQ ^{13}C NMR spectrum of **17**

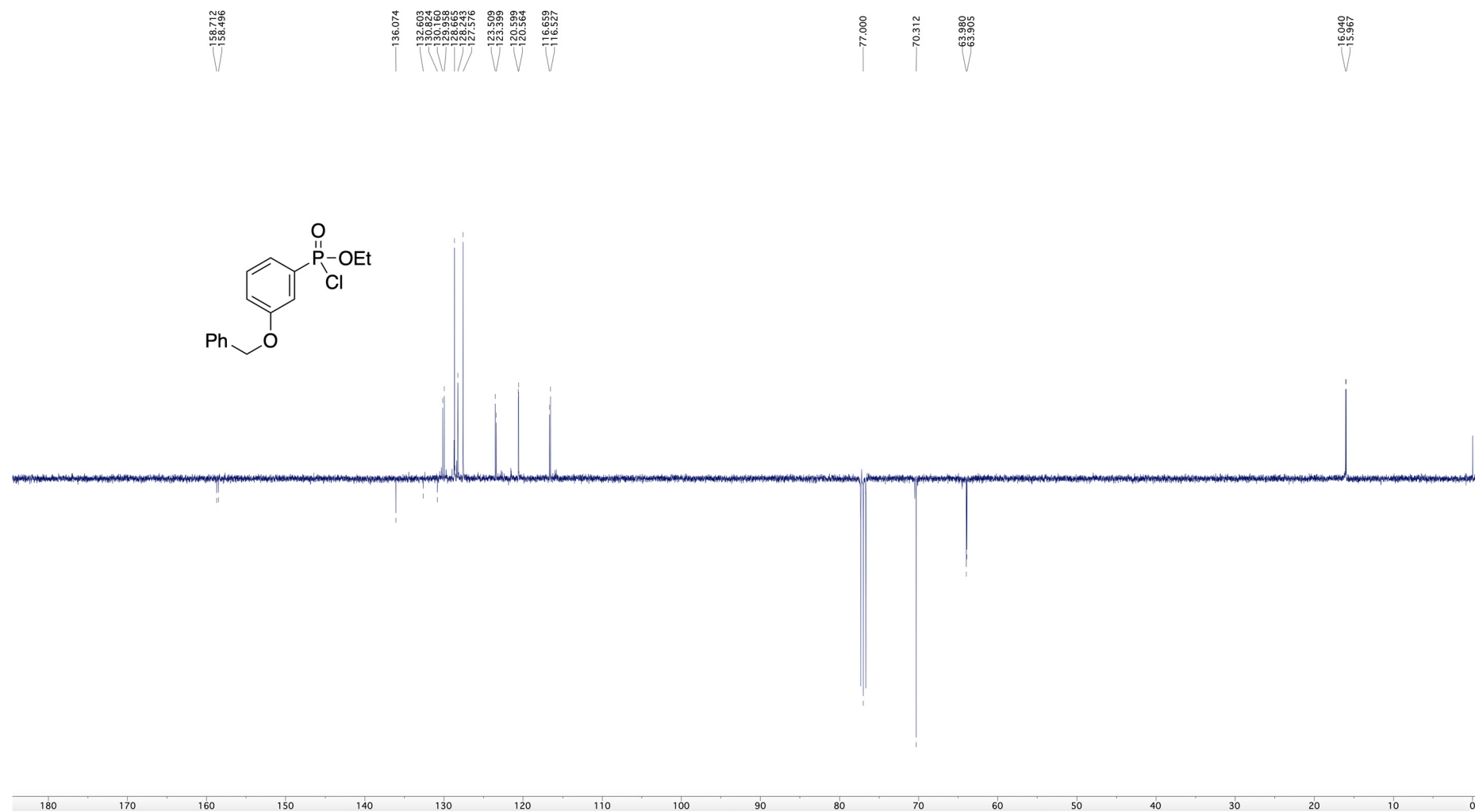


Figure S51. 400 MHz ^1H NMR spectrum of **18**

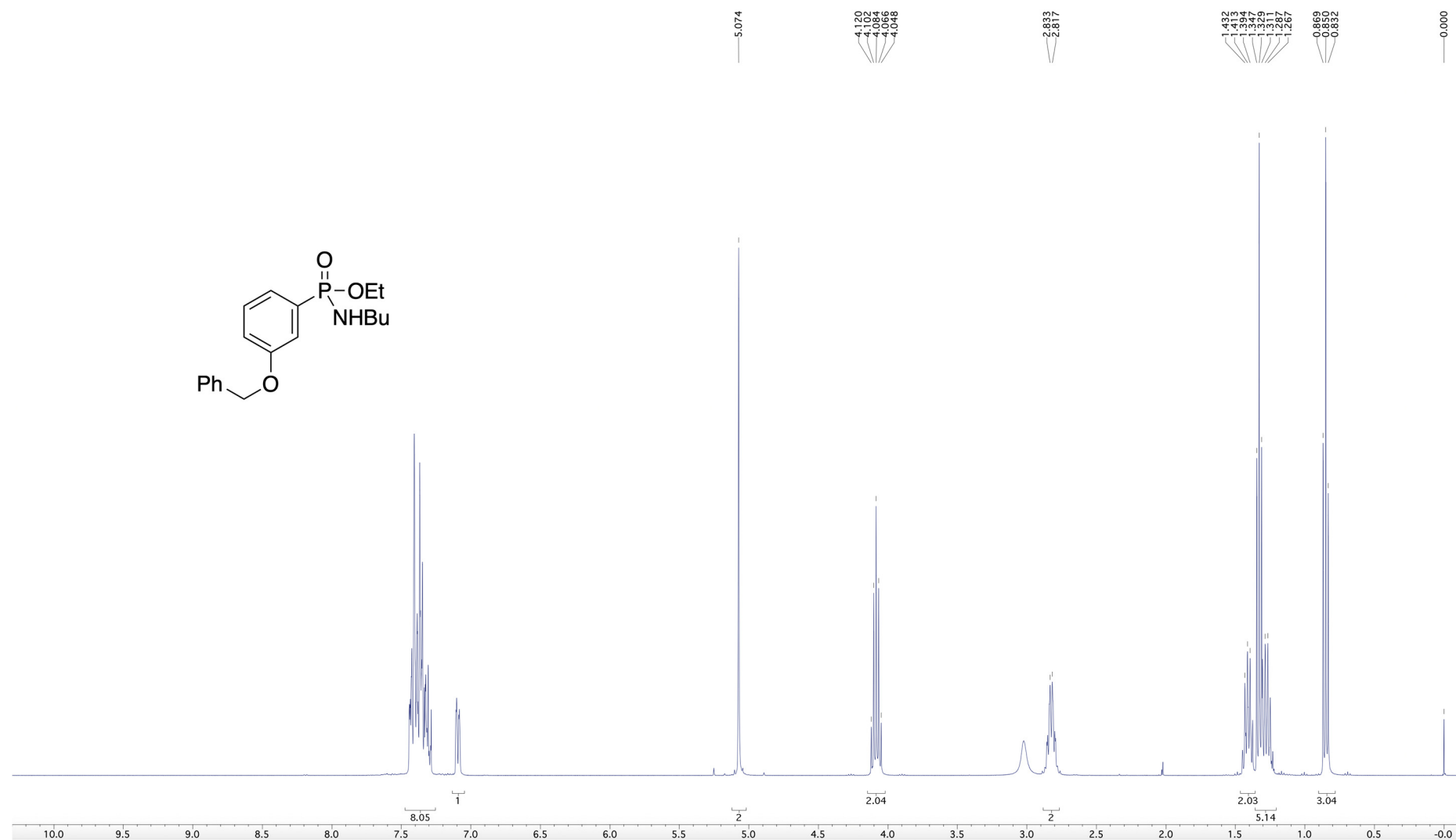


Figure S52. 202 MHz ^{31}P NMR spectrum of **18**

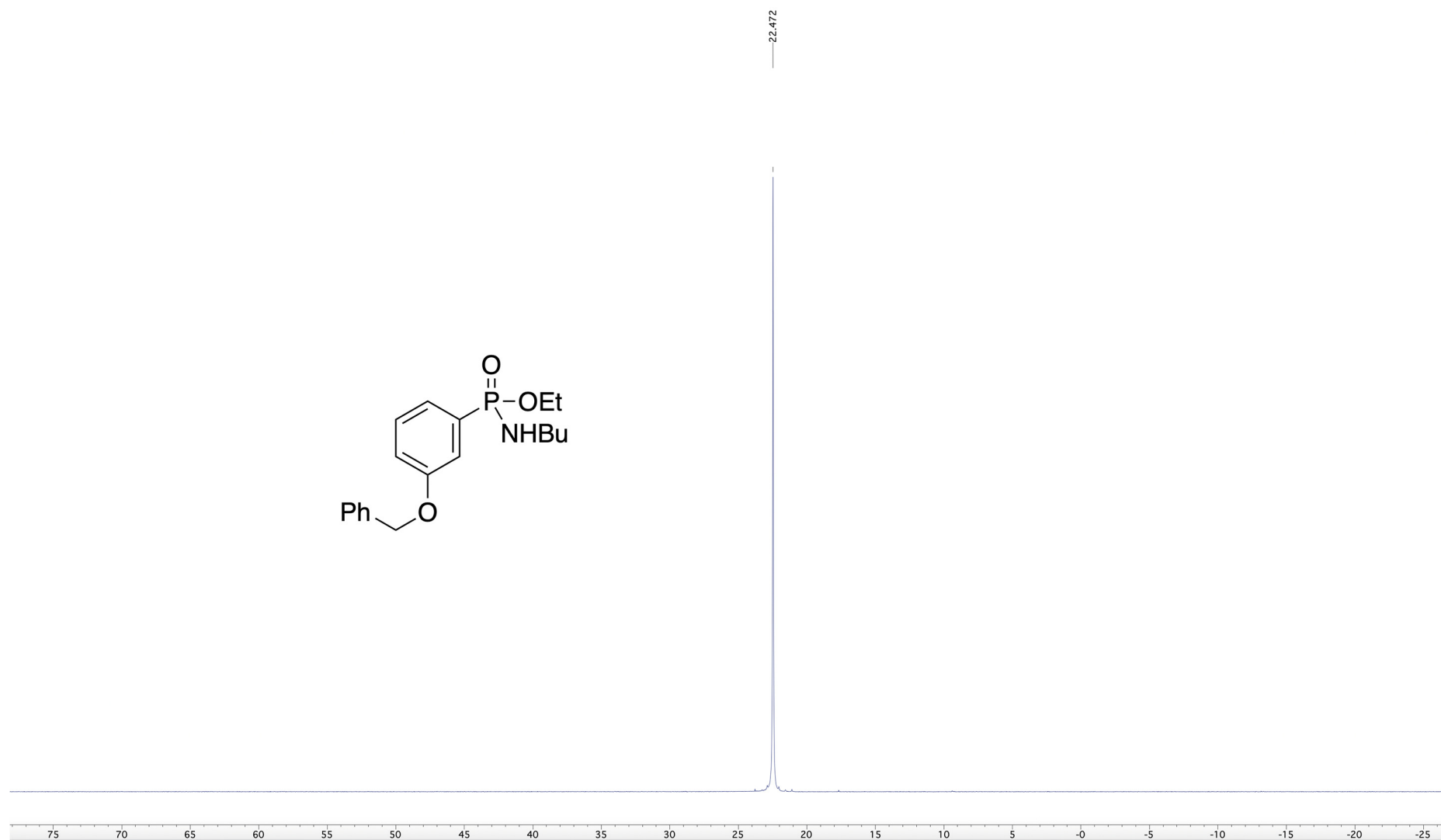


Figure S53. 125 MHz DEPTQ ^{13}C NMR spectrum of **18**

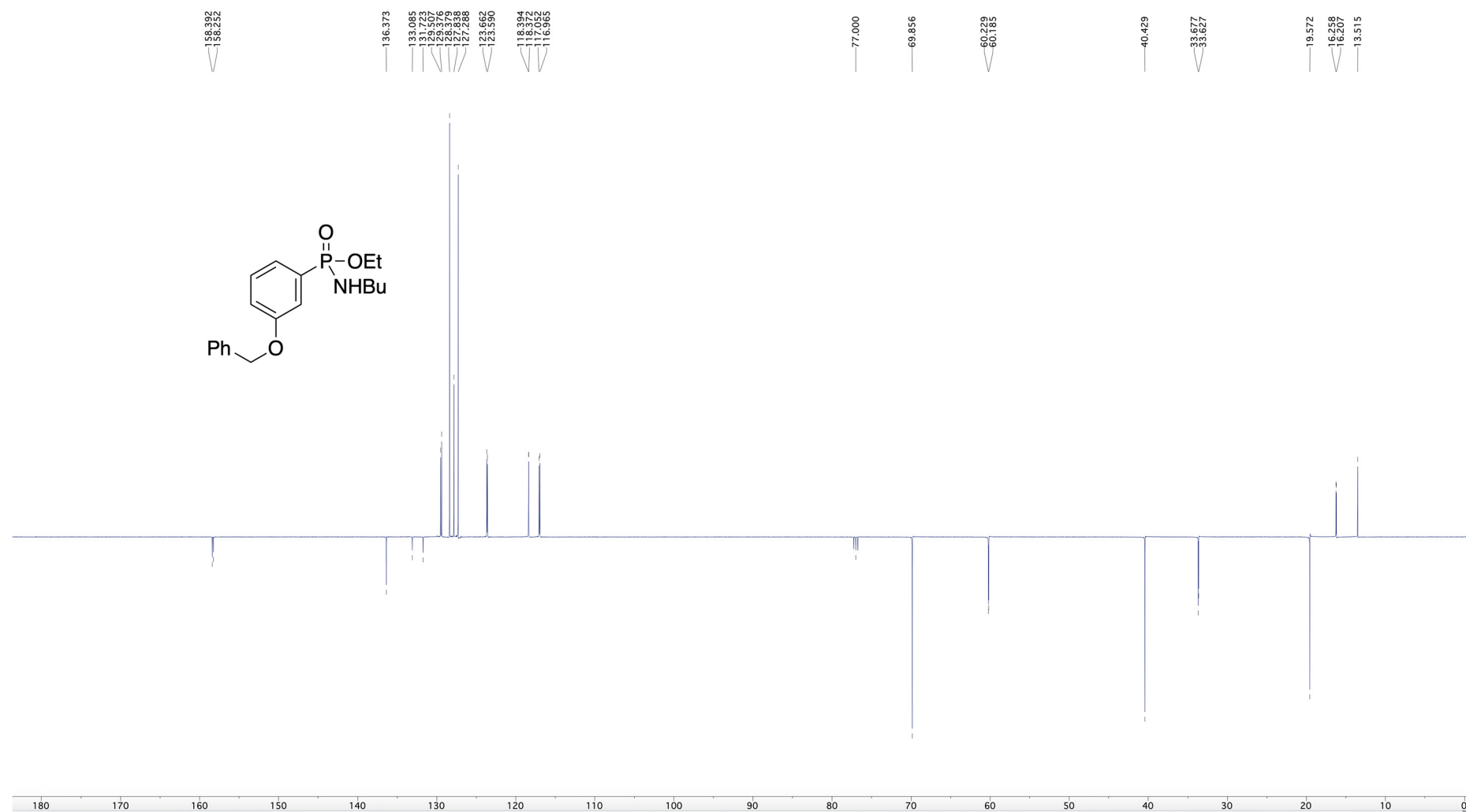


Figure S54. 500 MHz ^1H NMR spectrum of **19**

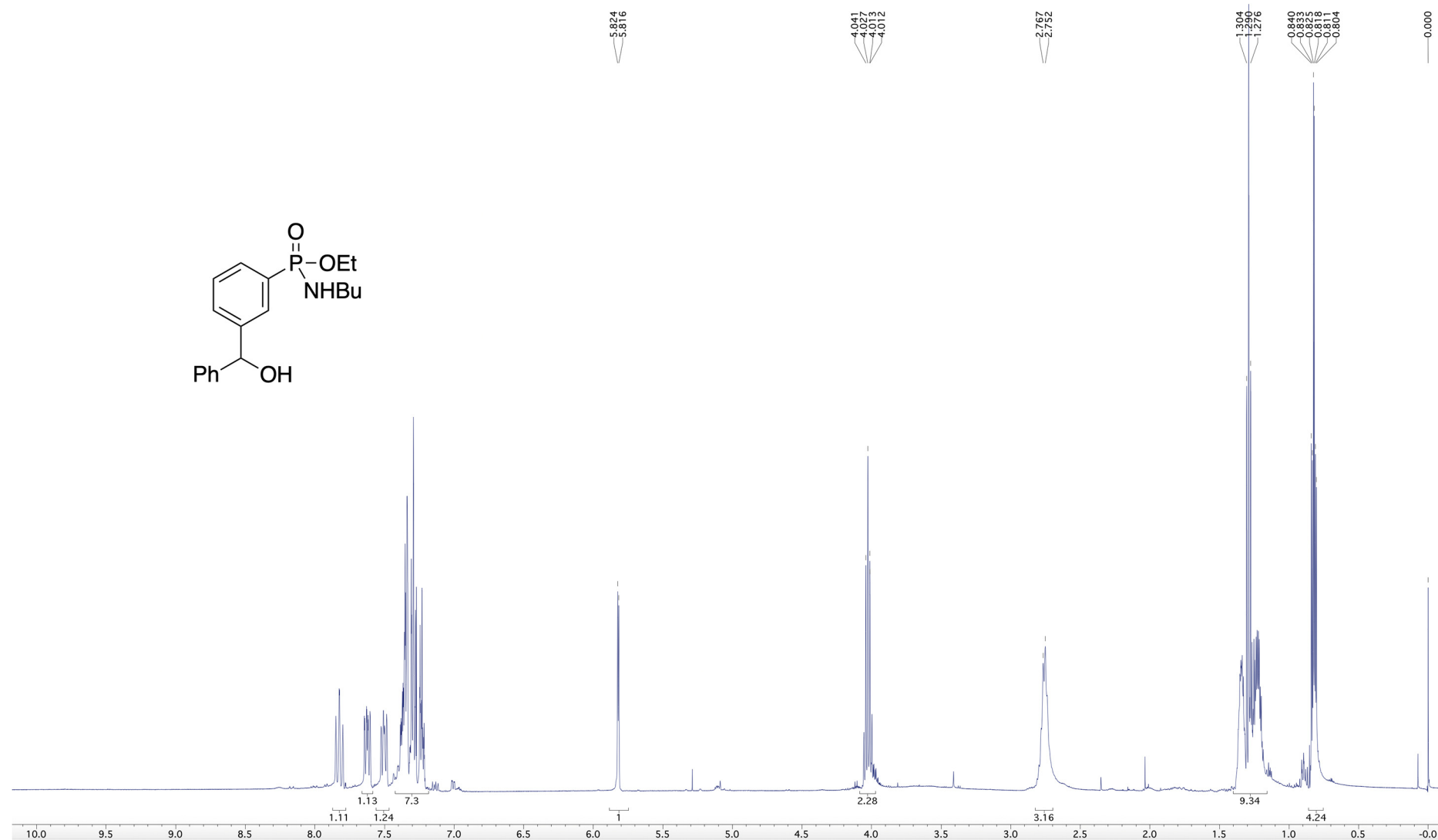


Figure S55. 202 MHz ^{31}P NMR spectrum of **19**

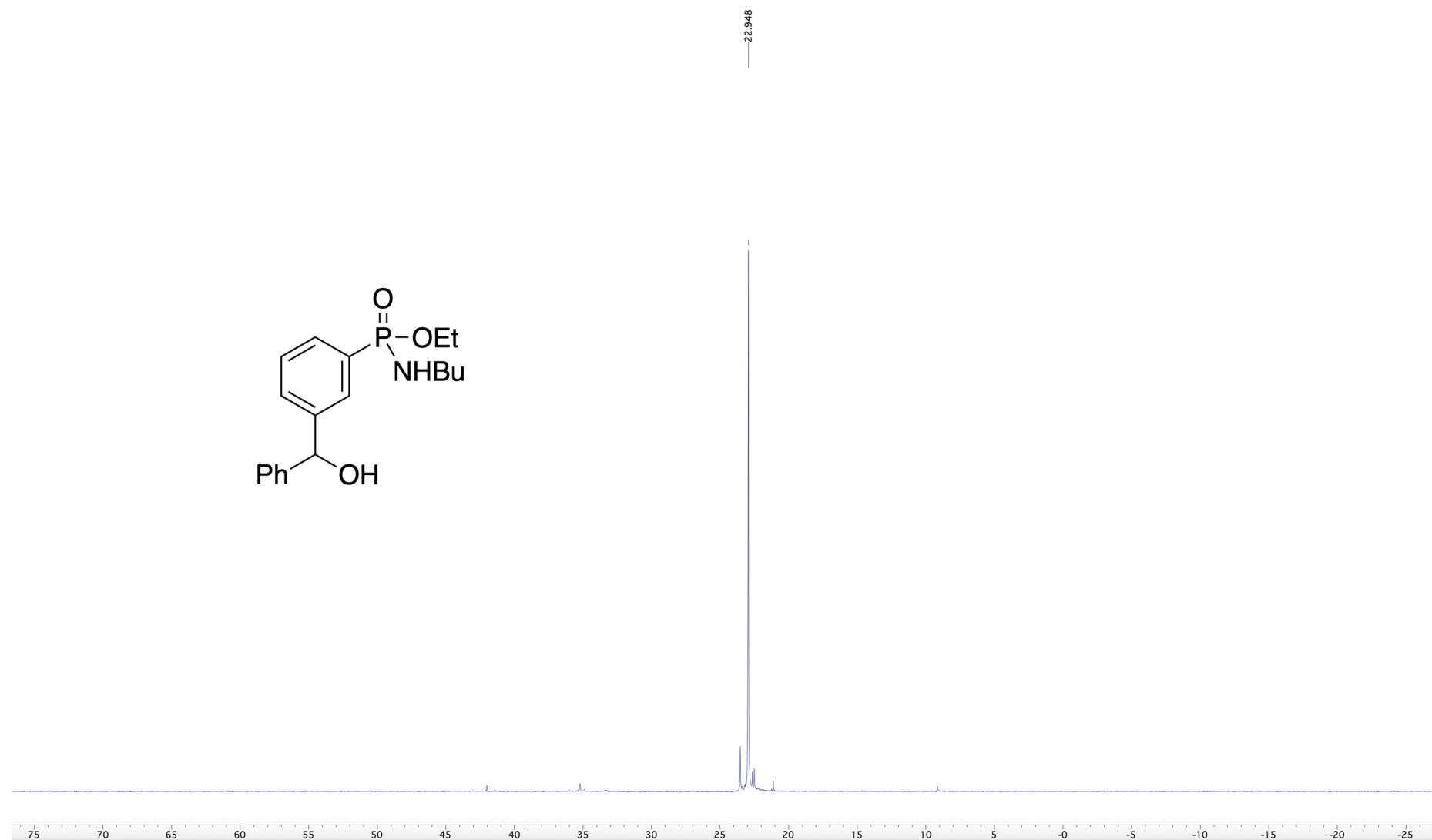


Figure S56. 125 MHz DEPTQ ^{13}C NMR spectrum of **19**

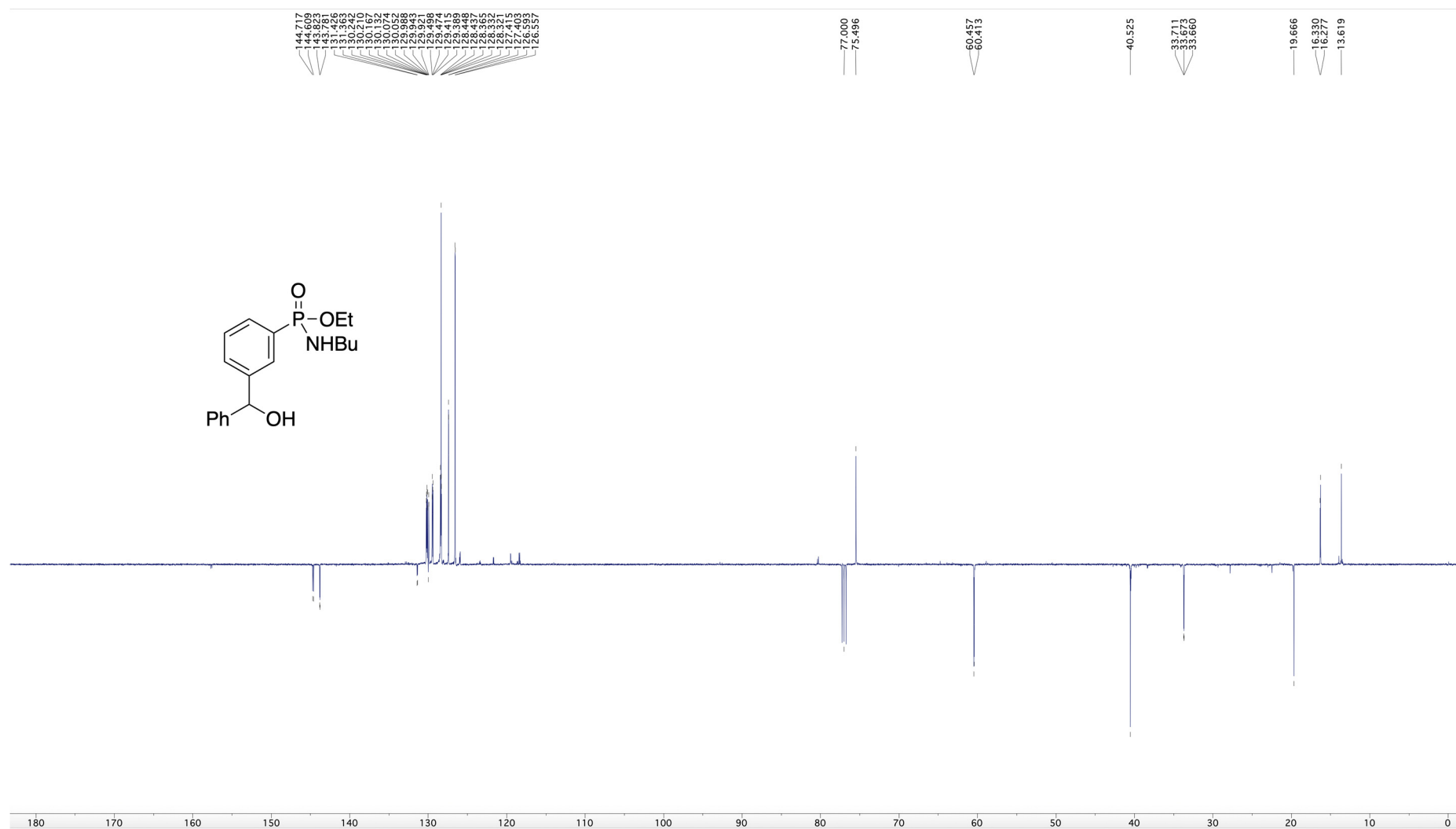


Figure S57. 125 MHz DEPTQ ^{13}C NMR spectrum of **19** (Expansion)

