

## SUPPORTING INFORMATION

### Synthesis and antiplasmodial activity of novel Fosmidomycin derivatives and conjugates with Artemisinin and Aminochloroquinoline

**Despina Palla<sup>1</sup>, Antonia I. Antoniou<sup>1</sup>, Michel Baltas<sup>2,3</sup>, Christophe Menendez<sup>2,3</sup>, Philippe Grelier<sup>3</sup>, Elisabeth Mouray<sup>4</sup> and Constantinos M. Athanassopoulos<sup>1,\*</sup>**

<sup>1</sup> Synthetic Organic Chemistry Laboratory, Department of Chemistry,  
University of Patras, Patras GR-26504, Greece;

despina.pal.5@gmail.com (D.P.); tonadoniou@upatras.gr (A.I.A.); kath@chemistry.upatras.gr (C.M.A.)

<sup>2</sup> LSPCMIB, UMR-CNRS 5068, Université Paul Sabatier-Toulouse III, Toulouse CEDEX 9 31062, France;  
baltas@chimie.ups-tlse.fr (M.B.); menendez@chimie.ups-tlse.fr (C.M.)

<sup>3</sup> CNRS, LCC (Laboratoire de Chimie, de Coordination), Université de Toulouse, UPS, INPT, 205 route de  
Narbonne, BP 44099, F-31077, Toulouse CEDEX 4, France;

michel.baltas@lcc-toulouse.fr (M.B.); menendez@chimie.ups-tlse.fr (C.M.)

<sup>4</sup> MCAM, UMR 7245, Muséum National d'Histoire Naturelle, CNRS, CP52, 63 rue Buffon Paris 75005, France;  
grellier@mnhn.fr (P.G.); mouray@mnhn.fr (E.M.)

\* Correspondence: kath@chemistry.upatras.gr; Tel.: +30-2610-997909

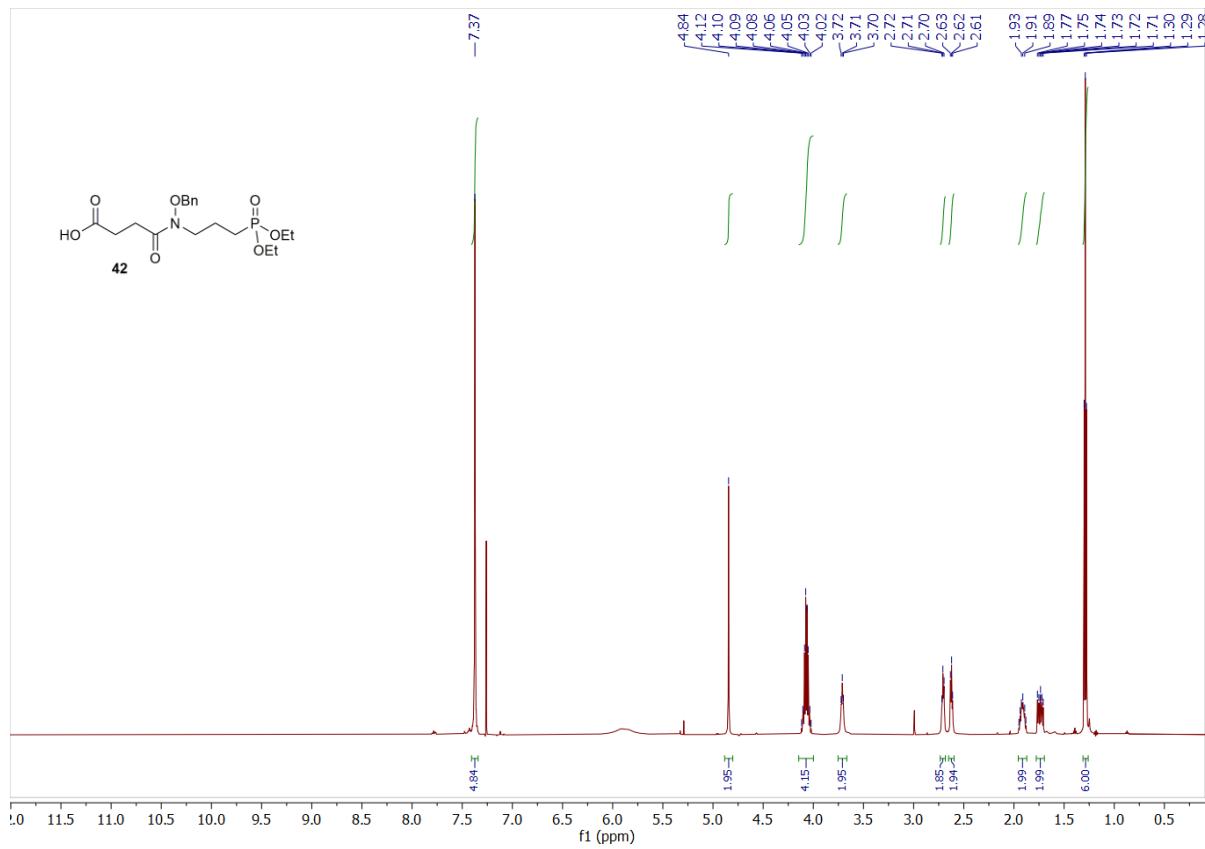
### Copies of NMR spectra

## Table of contents

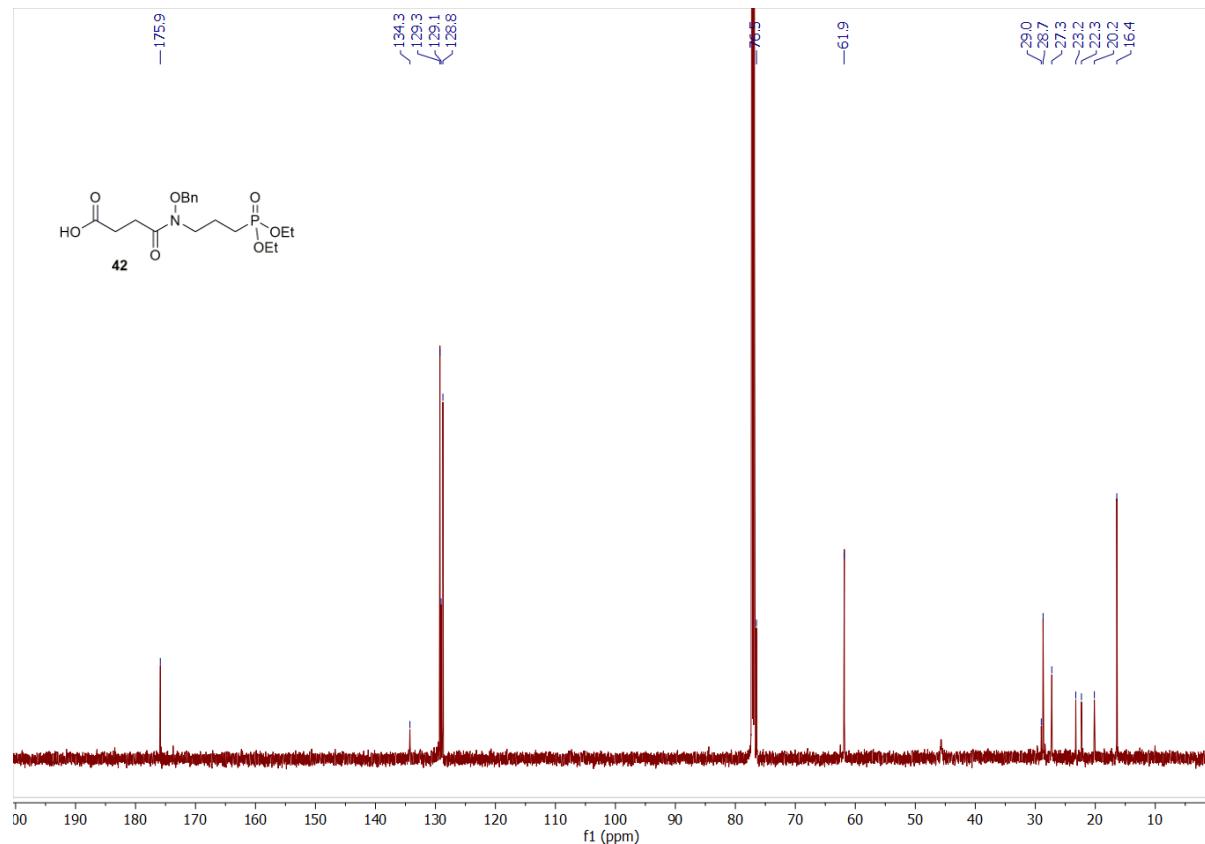
<u>Figure S1. <math>^1\text{H}</math>-NMR spectrum of compound 42.</u> .....	5
<u>Figure S2. <math>^{13}\text{C}</math>-NMR spectrum of compound 42.</u> .....	5
<u>Figure S3. <math>^{31}\text{P}</math>-NMR spectrum of compound 42.</u> .....	6
<u>Figure S4. <math>^1\text{H}</math>-NMR spectrum of compound 43.</u> .....	6
<u>Figure S5. <math>^{13}\text{C}</math>-NMR spectrum of compound 43.</u> .....	7
<u>Figure S6. <math>^1\text{H}</math>-NMR spectrum of compound 18.</u> .....	7
<u>Figure S7. <math>^{13}\text{C}</math>-NMR spectrum of compound 18.</u> .....	8
<u>Figure S8. <math>^1\text{H}</math>-NMR spectrum of compound 47.</u> .....	8
<u>Figure S9. <math>^{13}\text{C}</math>-NMR spectrum of compound 47.</u> .....	9
<u>Figure S10. <math>^1\text{H}</math>-NMR spectrum of compound 19.</u> .....	9
<u>Figure S11. <math>^{13}\text{C}</math>-NMR spectrum of compound 19.</u> .....	10
<u>Figure S12. <math>^1\text{H}</math>-NMR spectrum of compound 20.</u> .....	10
<u>Figure S13. <math>^{13}\text{C}</math>-NMR spectrum of compound 20.</u> .....	11
<u>Figure S14. <math>^1\text{H}</math>-NMR spectrum of compound 21.</u> .....	11
<u>Figure S15. <math>^{13}\text{C}</math>-NMR spectrum of compound 21.</u> .....	12
<u>Figure S16. <math>^1\text{H}</math>-NMR spectrum of compound 54.</u> .....	12
<u>Figure S17. <math>^{13}\text{C}</math>-NMR spectrum of compound 54.</u> .....	13
<u>Figure S18. <math>^1\text{H}</math>-NMR spectrum of compound 55.</u> .....	13
<u>Figure S19. <math>^{13}\text{C}</math>-NMR spectrum of compound 55.</u> .....	14
<u>Figure S20. <math>^1\text{H}</math>-NMR spectrum of compound 56.</u> .....	14
<u>Figure S21. <math>^{13}\text{C}</math>-NMR spectrum of compound 56.</u> .....	15
<u>Figure S22. <math>^1\text{H}</math>-NMR spectrum of compound 57.</u> .....	15
<u>Figure S23. <math>^{13}\text{C}</math>-NMR spectrum of compound 57.</u> .....	16
<u>Figure S24. <math>^1\text{H}</math>-NMR spectrum of compound 22.</u> .....	16
<u>Figure S25. <math>^{13}\text{C}</math>-NMR spectrum of compound 22.</u> .....	17
<u>Figure S26. <math>^1\text{H}</math>-NMR spectrum of compound 23.</u> .....	17
<u>Figure S27. <math>^{13}\text{C}</math>-NMR spectrum of compound 23.</u> .....	18

<u>Figure S28. <math>^1\text{H}</math>-NMR spectrum of compound 60.</u> .....	18
<u>Figure S29. <math>^{13}\text{C}</math>-NMR spectrum of compound 60.</u> .....	19
<u>Figure S30. <math>^1\text{H}</math>-NMR spectrum of compound 61.</u> .....	19
<u>Figure S31. <math>^{13}\text{C}</math>-NMR spectrum of compound 61.</u> .....	20
<u>Figure S32. <math>^1\text{H}</math>-NMR spectrum of compound 62.</u> .....	20
<u>Figure S33. <math>^{13}\text{C}</math>-NMR spectrum of compound 62.</u> .....	21
<u>Figure S34. <math>^1\text{H}</math>-NMR spectrum of compound 63.</u> .....	21
<u>Figure S35. <math>^1\text{H}</math>-NMR spectrum of compound 64.</u> .....	22
<u>Figure S36. <math>^{13}\text{C}</math>-NMR spectrum of compound 64.</u> .....	22
<u>Figure S37. <math>^1\text{H}</math>-NMR spectrum of compound 66.</u> .....	23
<u>Figure S38. <math>^{13}\text{C}</math>-NMR spectrum of compound 66.</u> .....	23
<u>Figure S39. <math>^1\text{H}</math>-NMR spectrum of compound 67.</u> .....	24
<u>Figure S40. <math>^{13}\text{C}</math>-NMR spectrum of compound 67.</u> .....	24
<u>Figure S41. <math>^1\text{H}</math>-NMR spectrum of compound 68.</u> .....	25
<u>Figure S42. <math>^1\text{H}</math>-NMR spectrum of compound 26.</u> .....	26
<u>Figure S43. <math>^{13}\text{C}</math>-NMR spectrum of compound 26.</u> .....	26
<u>Figure S44. <math>^1\text{H}</math>-NMR spectrum of compound 27.</u> .....	27
<u>Figure S45. <math>^{13}\text{C}</math>-NMR spectrum of compound 27.</u> .....	27
<u>Figure S46. <math>^1\text{H}</math>-NMR spectrum of compound 28.</u> .....	28
<u>Figure S47. <math>^{13}\text{C}</math>-NMR spectrum of compound 28.</u> .....	28
<u>Figure S48. <math>^1\text{H}</math>-NMR spectrum of compound 29.</u> .....	29
<u>Figure S49. <math>^{13}\text{C}</math>-NMR spectrum of compound 29.</u> .....	29
<u>Figure S50. <math>^1\text{H}</math>-NMR spectrum of compound 30.</u> .....	30
<u>Figure S51. <math>^{13}\text{C}</math>-NMR spectrum of compound 30.</u> .....	30
<u>Figure S52. <math>^1\text{H}</math>-NMR spectrum of compound 31.</u> .....	31
<u>Figure S53. <math>^{13}\text{C}</math>-NMR spectrum of compound 31.</u> .....	31
<u>Figure S54. <math>^{13}\text{C}</math>-NMR spectrum of compound 32.</u> .....	32
<u>Figure S55. <math>^{13}\text{C}</math>-NMR spectrum of compound 32.</u> .....	32
<u>Figure S56. <math>^1\text{H}</math>-NMR spectrum of compound 33.</u> .....	33
<u>Figure S57. <math>^1\text{H}</math>-NMR spectrum of compound 33.</u> .....	33
<u>Figure S58. <math>^1\text{H}</math>-NMR spectrum of compound 34.</u> .....	34

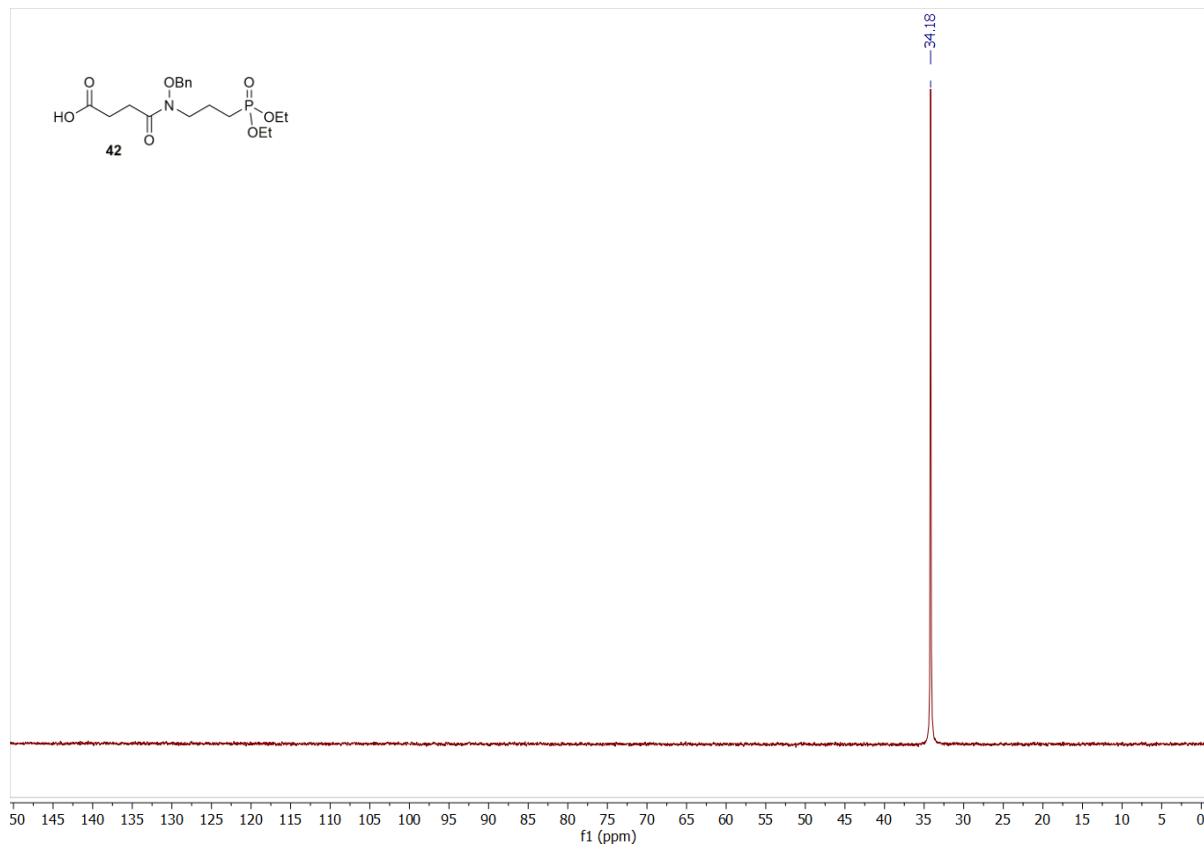
<u>Figure S59. <math>^{13}\text{C}</math>-NMR spectrum of compound 34.</u>	34
<u>Figure S60. <math>^1\text{H}</math>-NMR spectrum of compound 35.</u>	35
<u>Figure S61. <math>^{13}\text{C}</math>-NMR spectrum of compound 35.</u>	35



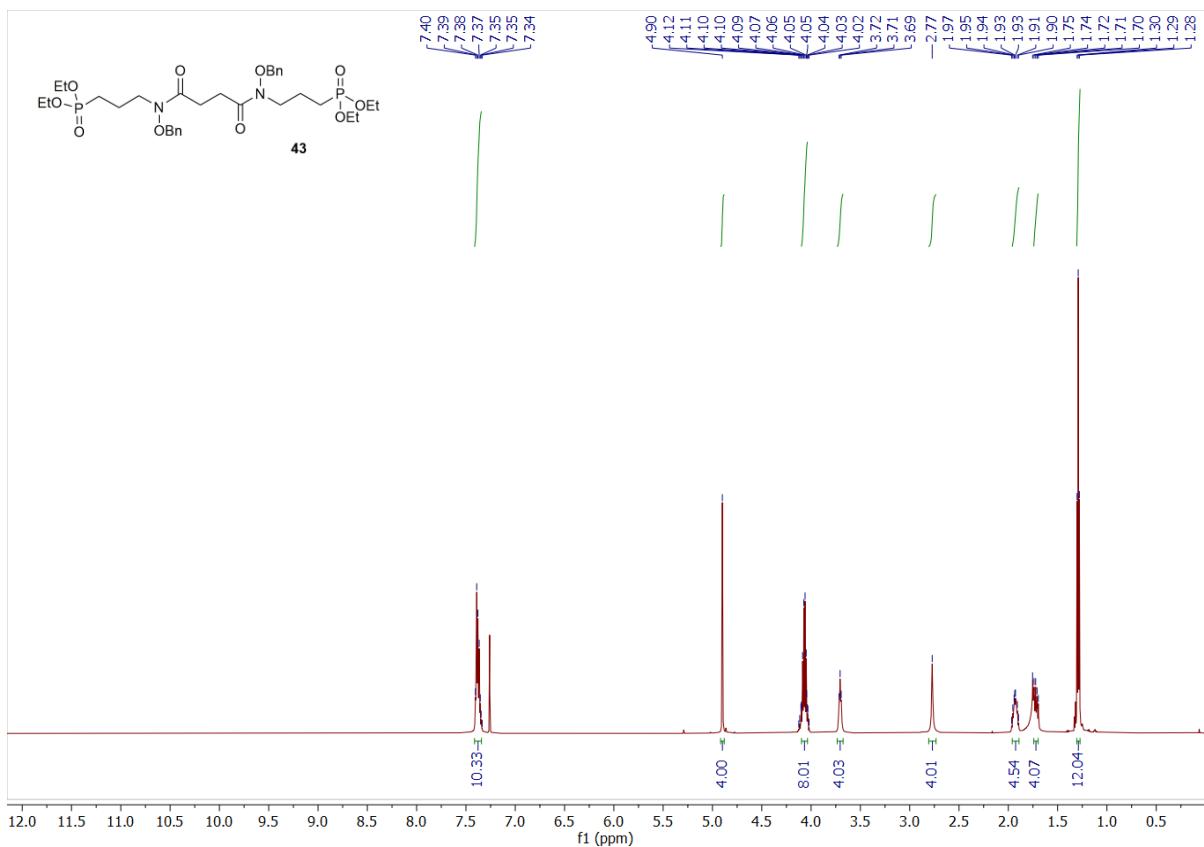
**Figure S1.**  $^1\text{H}$ -NMR spectrum of compound 42.



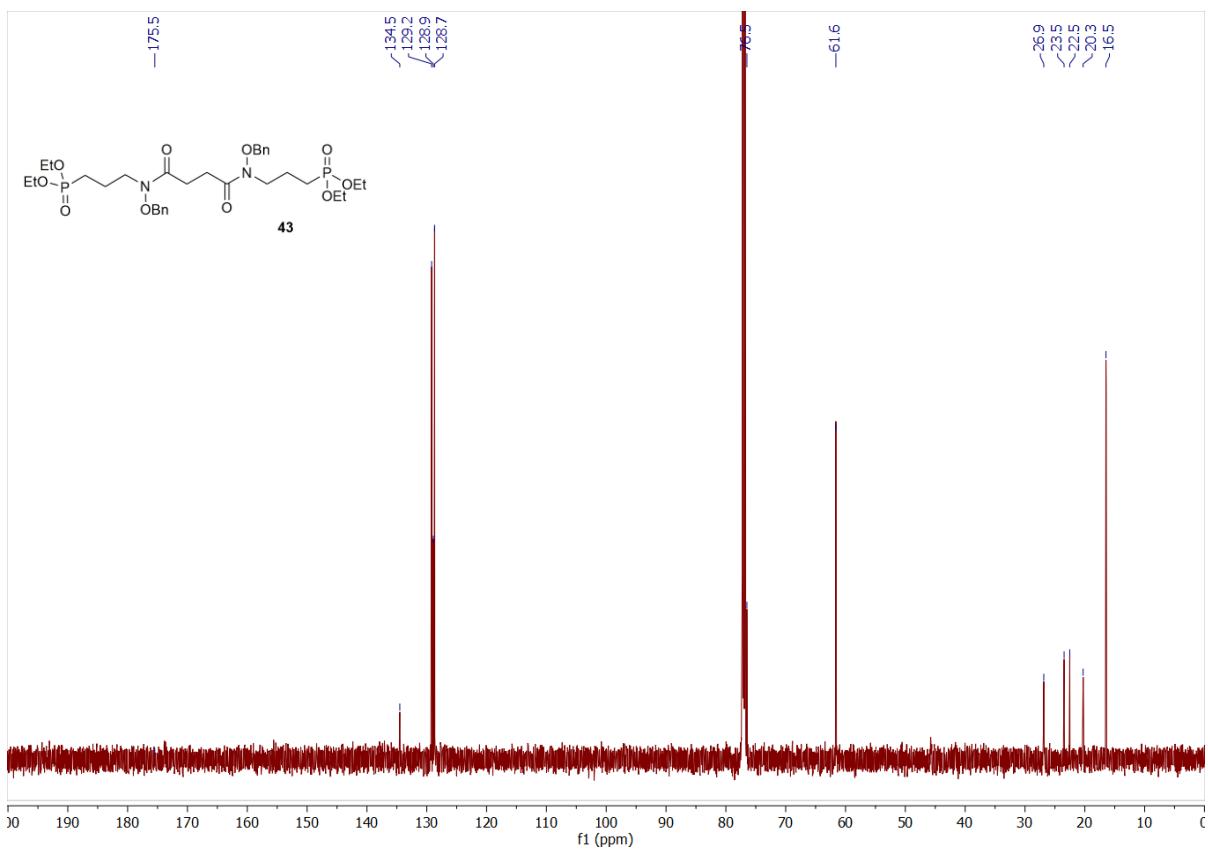
**Figure S2.**  $^{13}\text{C}$ -NMR spectrum of compound 42.



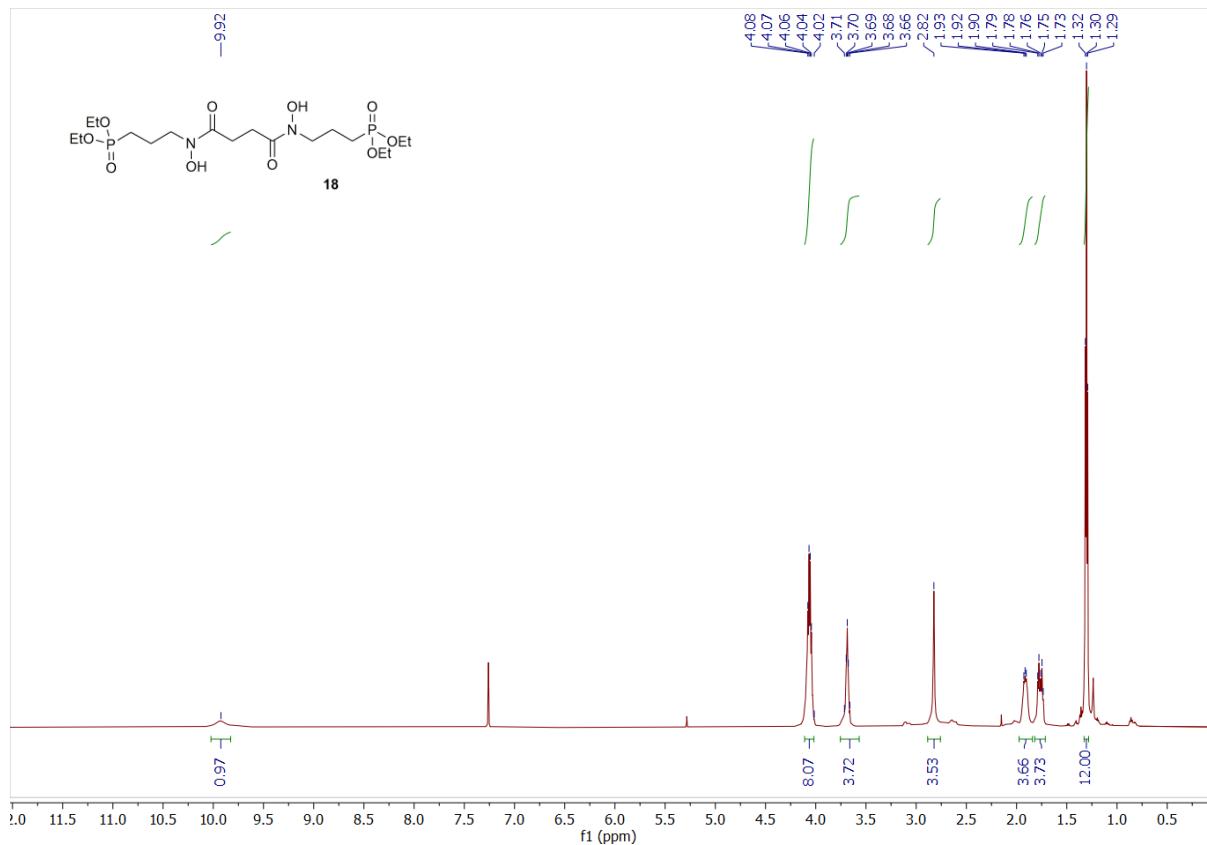
**Figure S3.**  $^{31}\text{P}$ -NMR spectrum of compound 42.



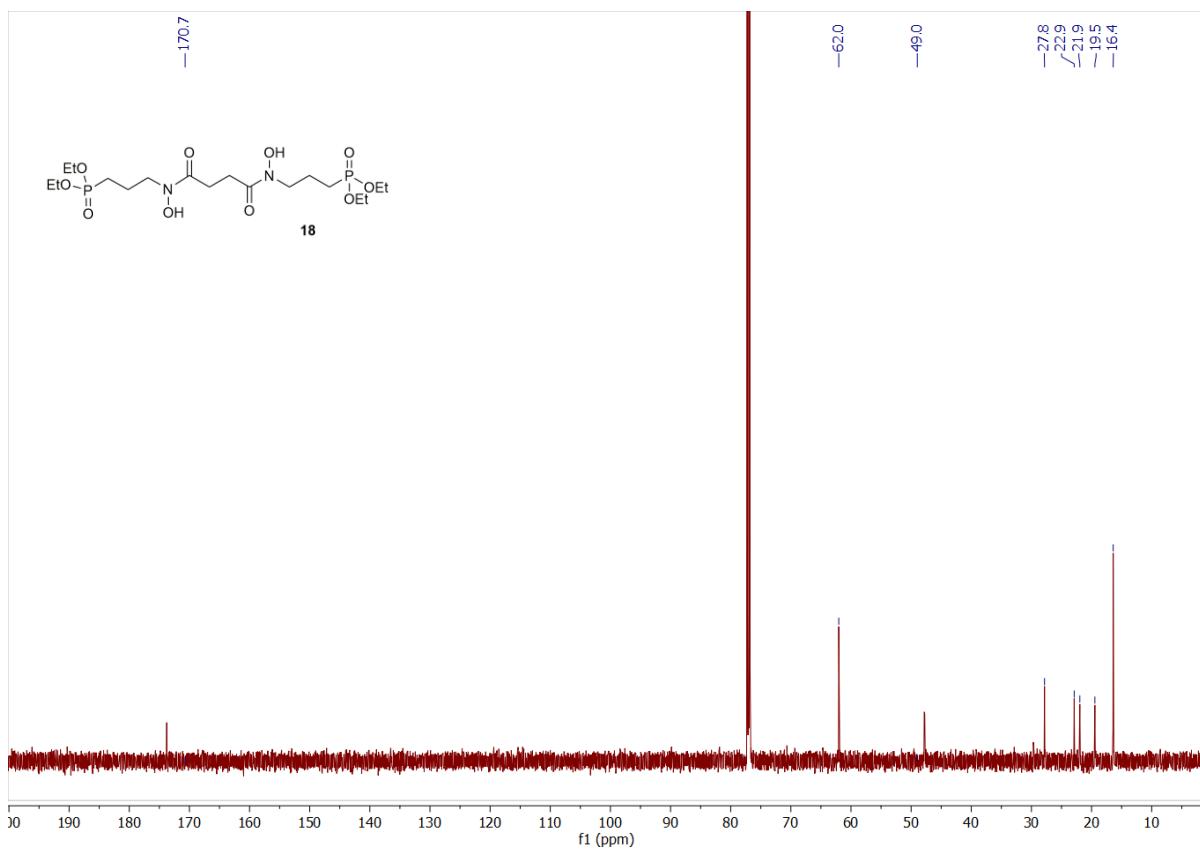
**Figure S4.**  $^1\text{H}$ -NMR spectrum of compound 43.



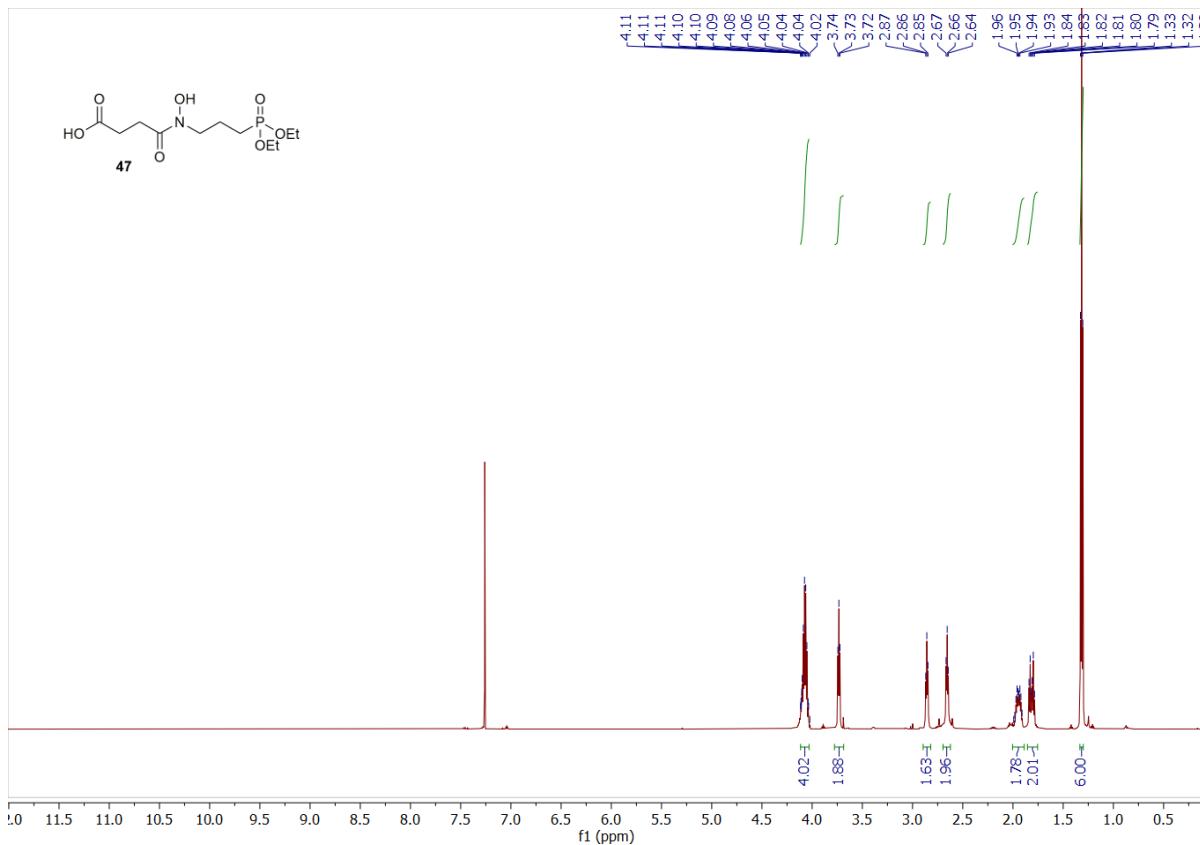
**Figure S5.**  $^{13}\text{C}$ -NMR spectrum of compound 43.



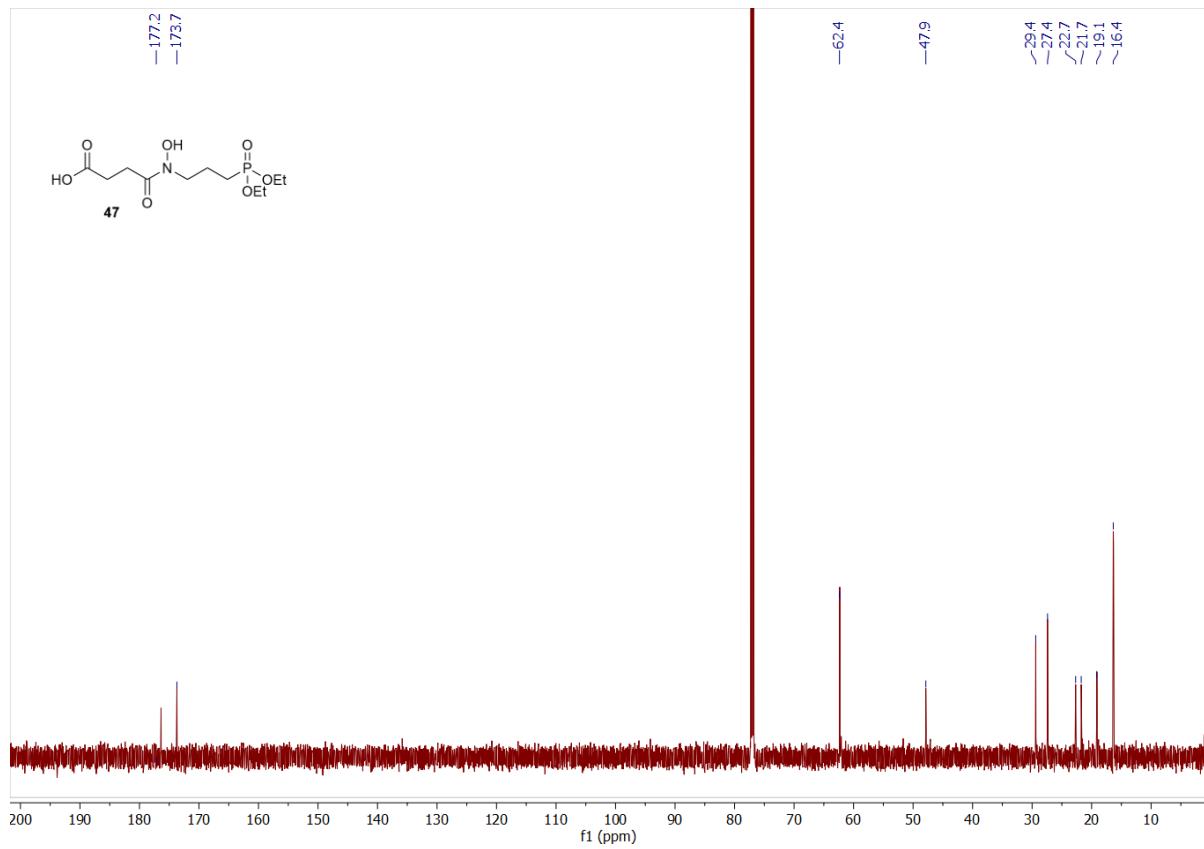
**Figure S6.**  $^1\text{H}$ -NMR spectrum of compound 18.



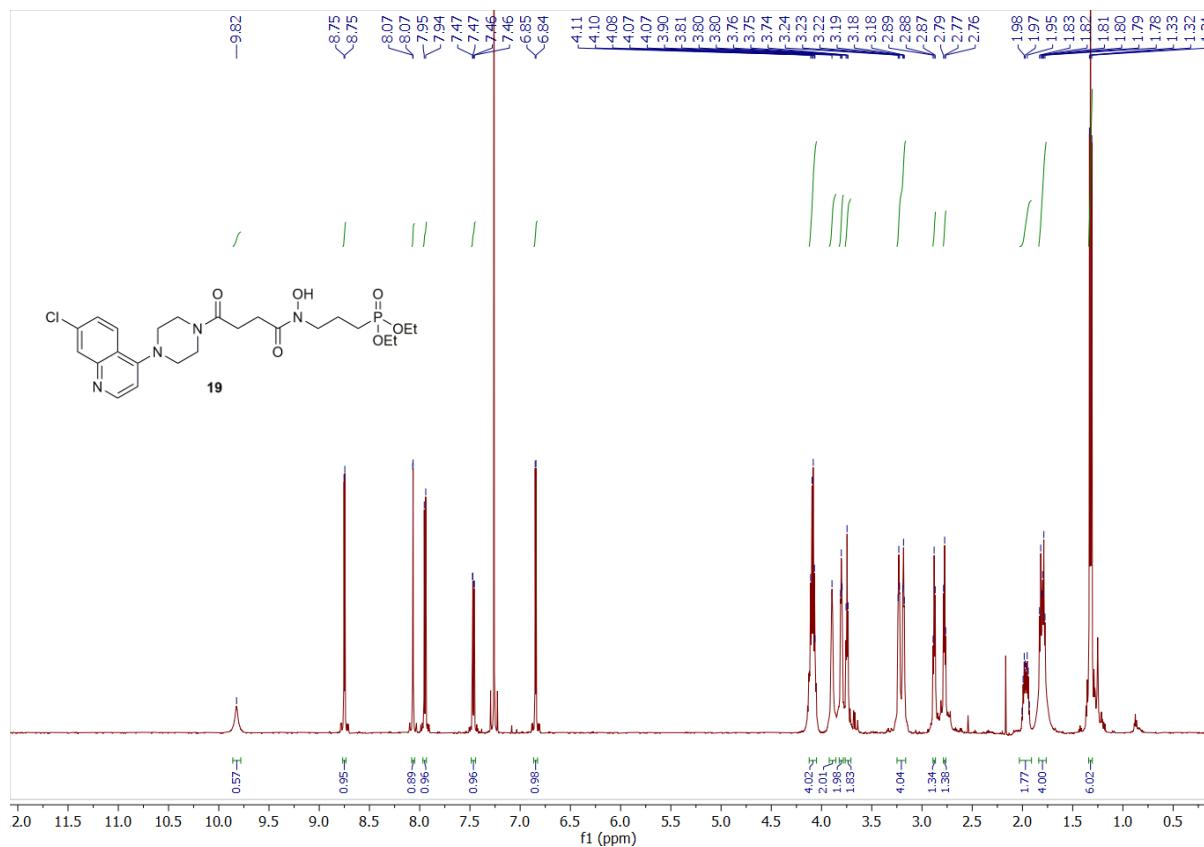
**Figure S7.**  $^{13}\text{C}$ -NMR spectrum of compound **18**.



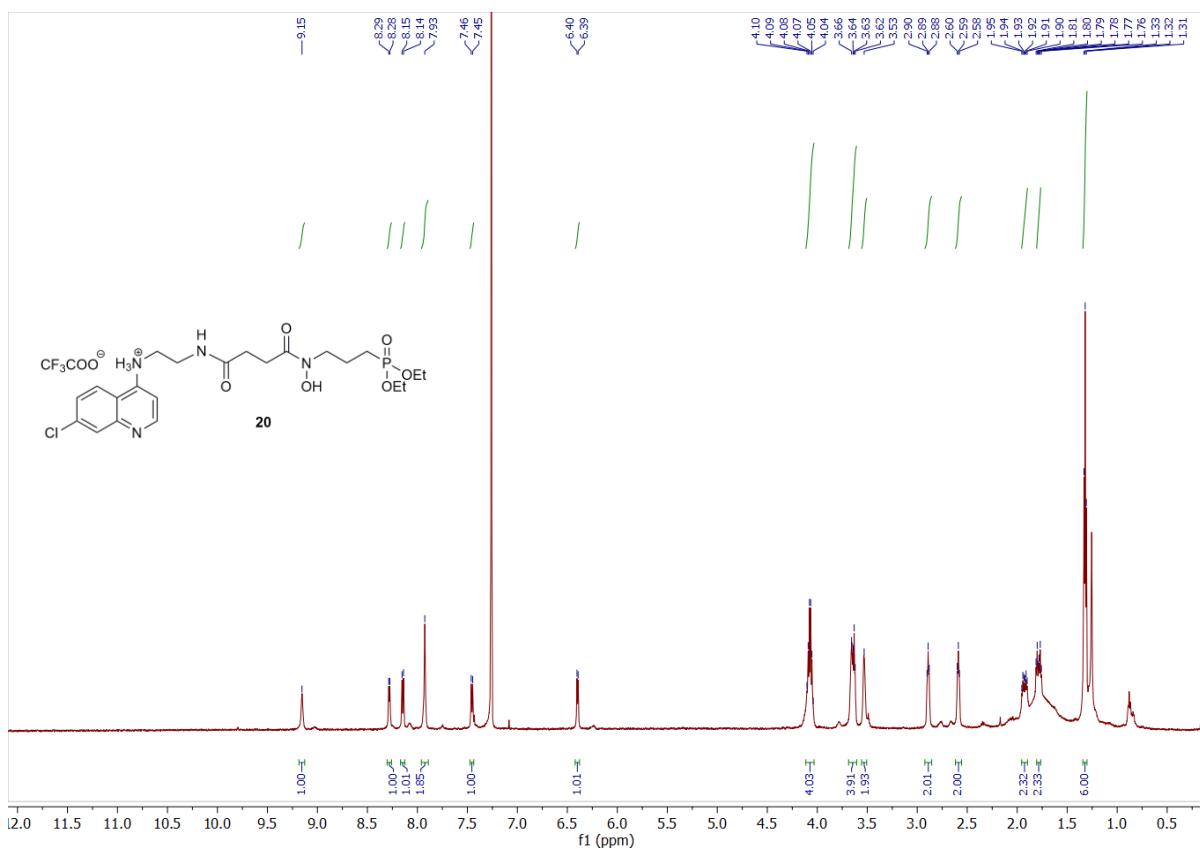
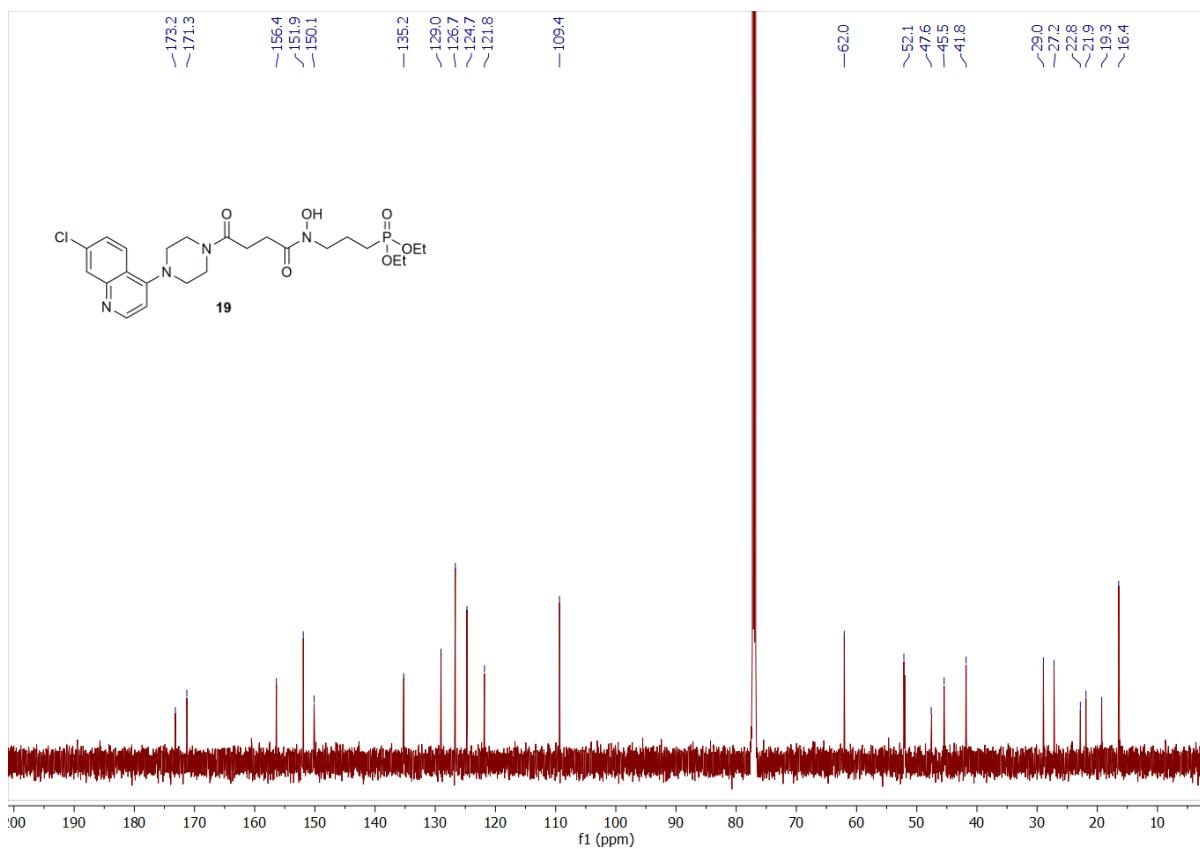
**Figure S8.**  $^1\text{H}$ -NMR spectrum of compound **47**.

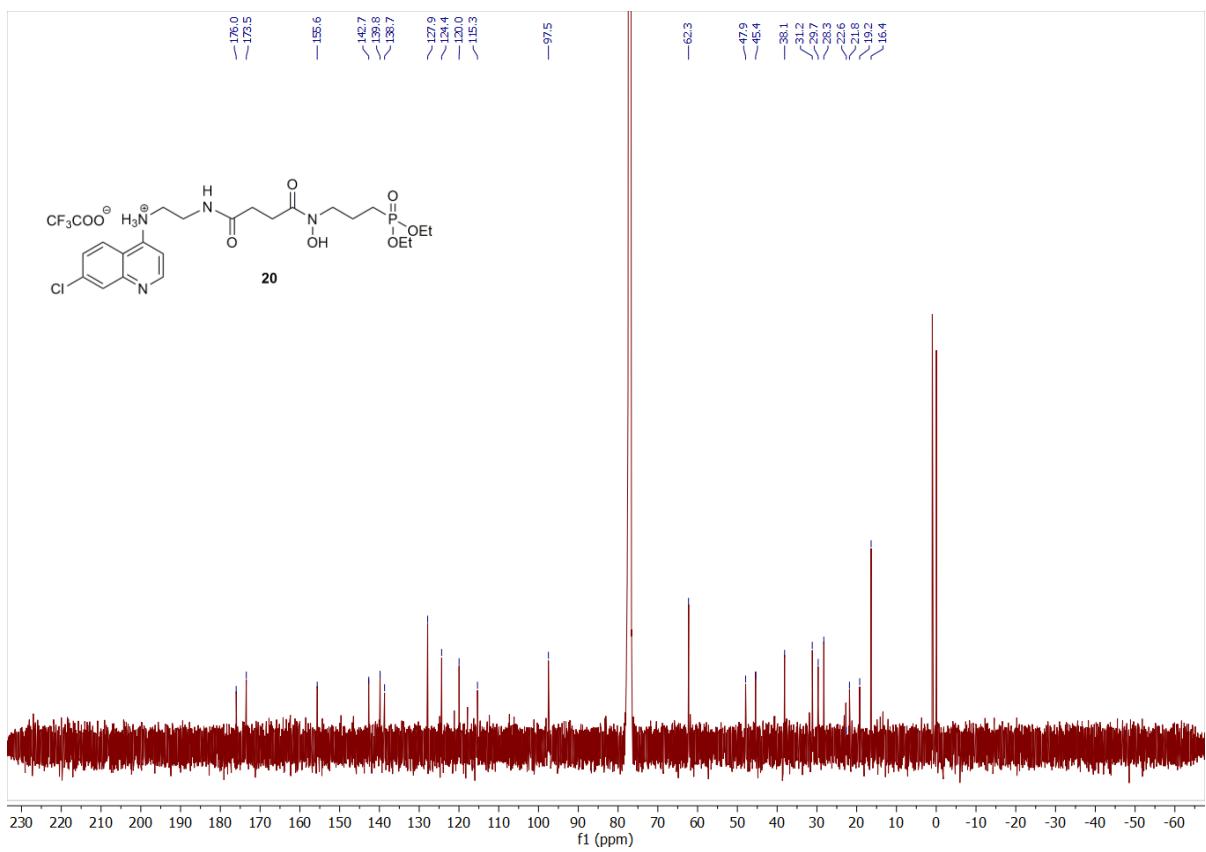


**Figure S9.**  $^{13}\text{C}$ -NMR spectrum of compound 47.

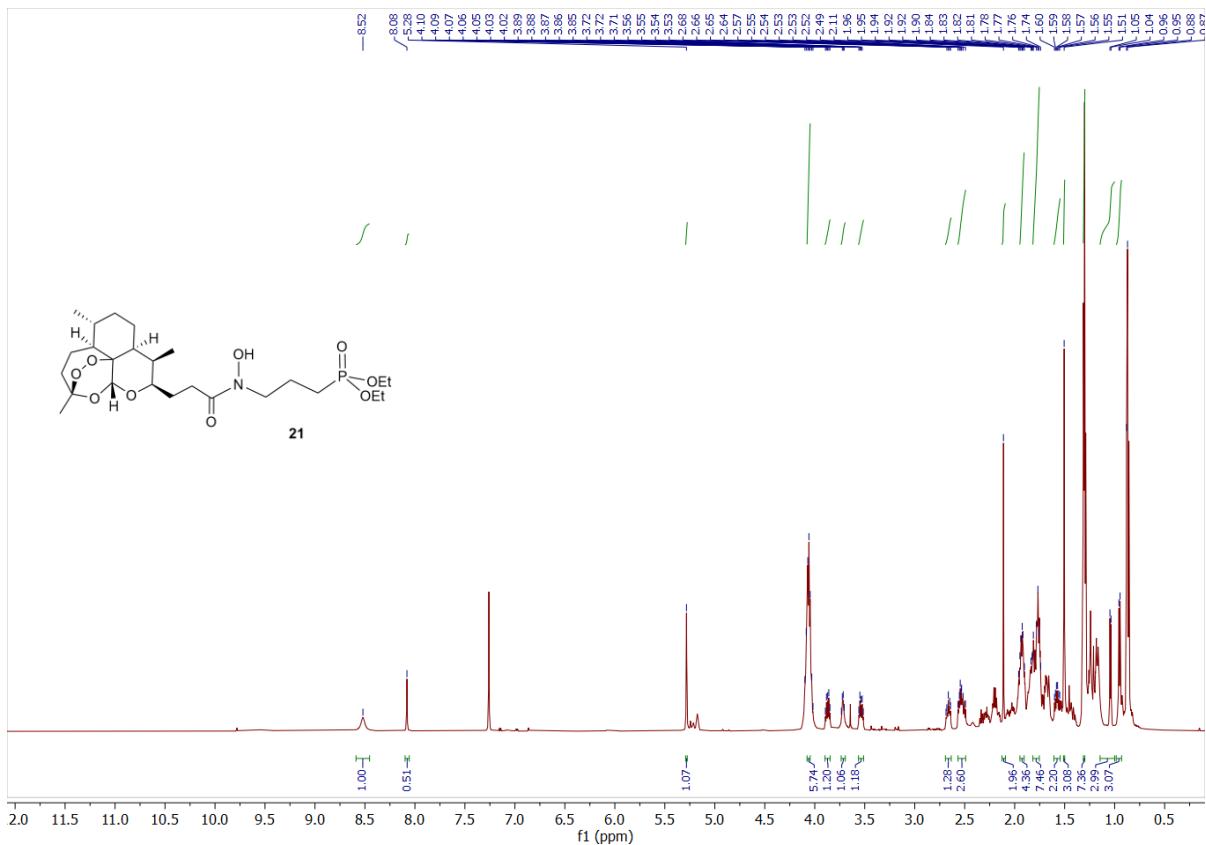


**Figure S10.**  $^1\text{H}$ -NMR spectrum of compound 19.

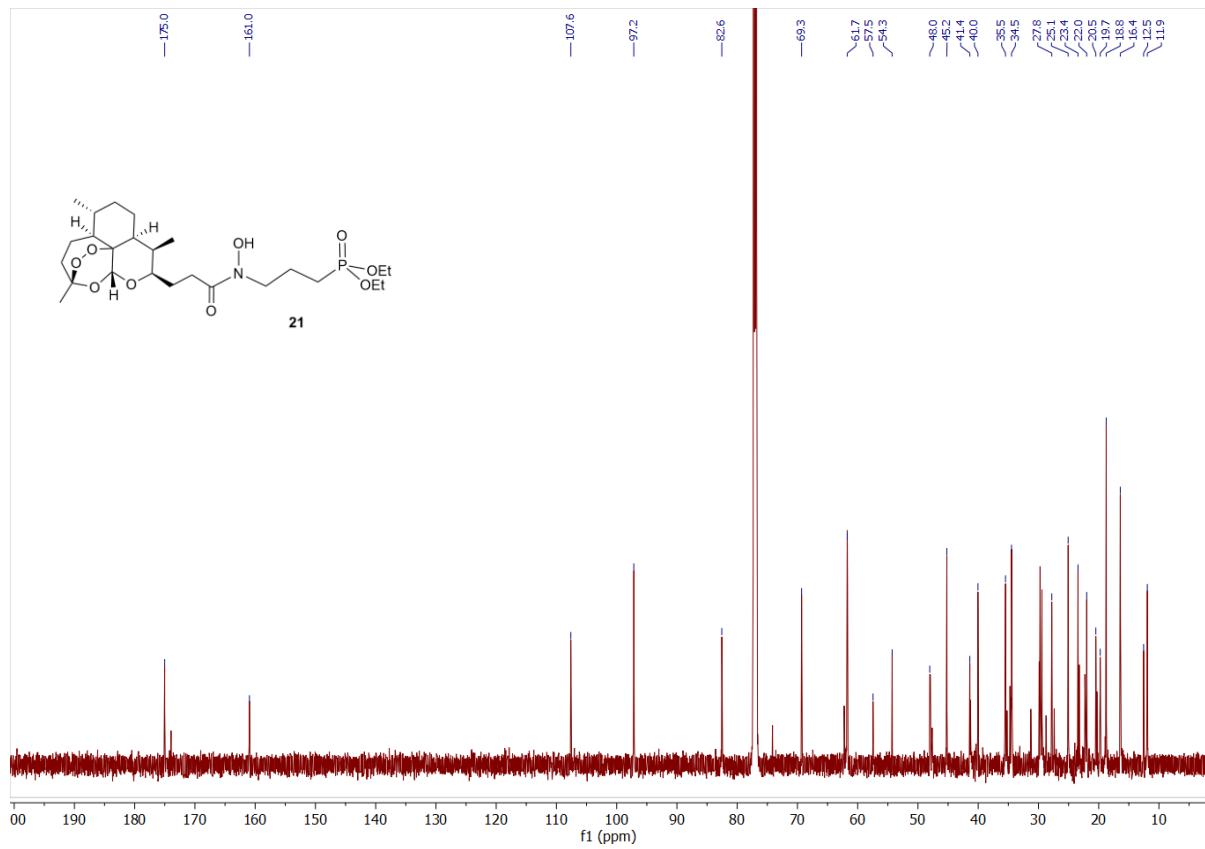




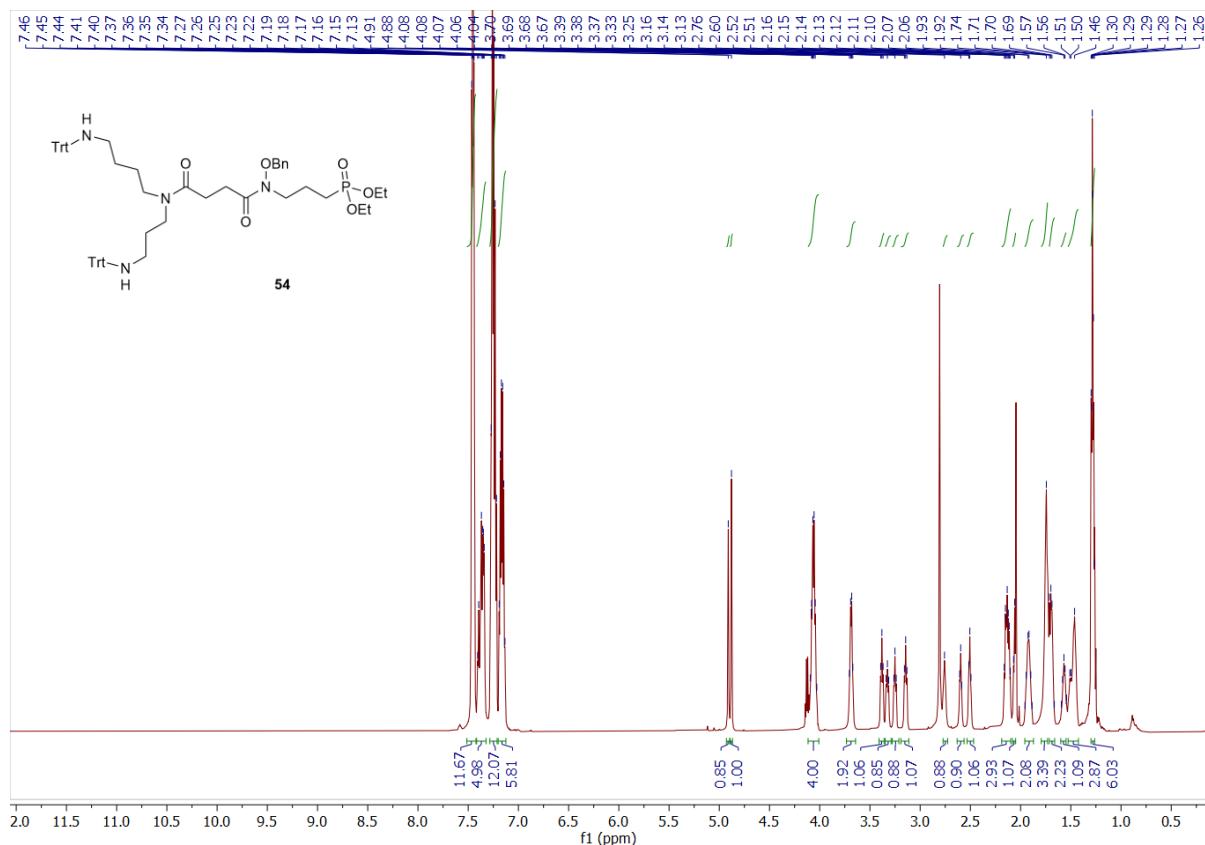
**Figure S13.**  $^{13}\text{C}$ -NMR spectrum of compound 20.



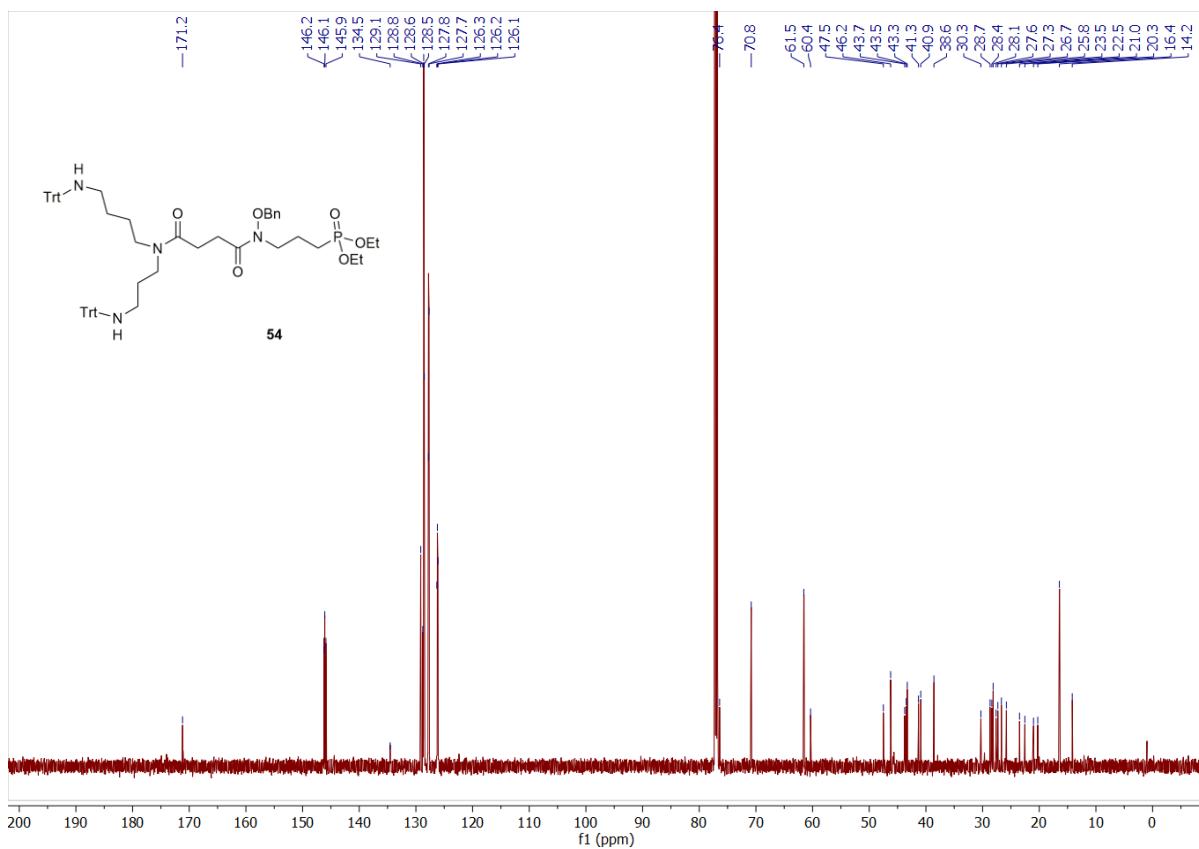
**Figure S14.**  $^1\text{H}$ -NMR spectrum of compound 21.



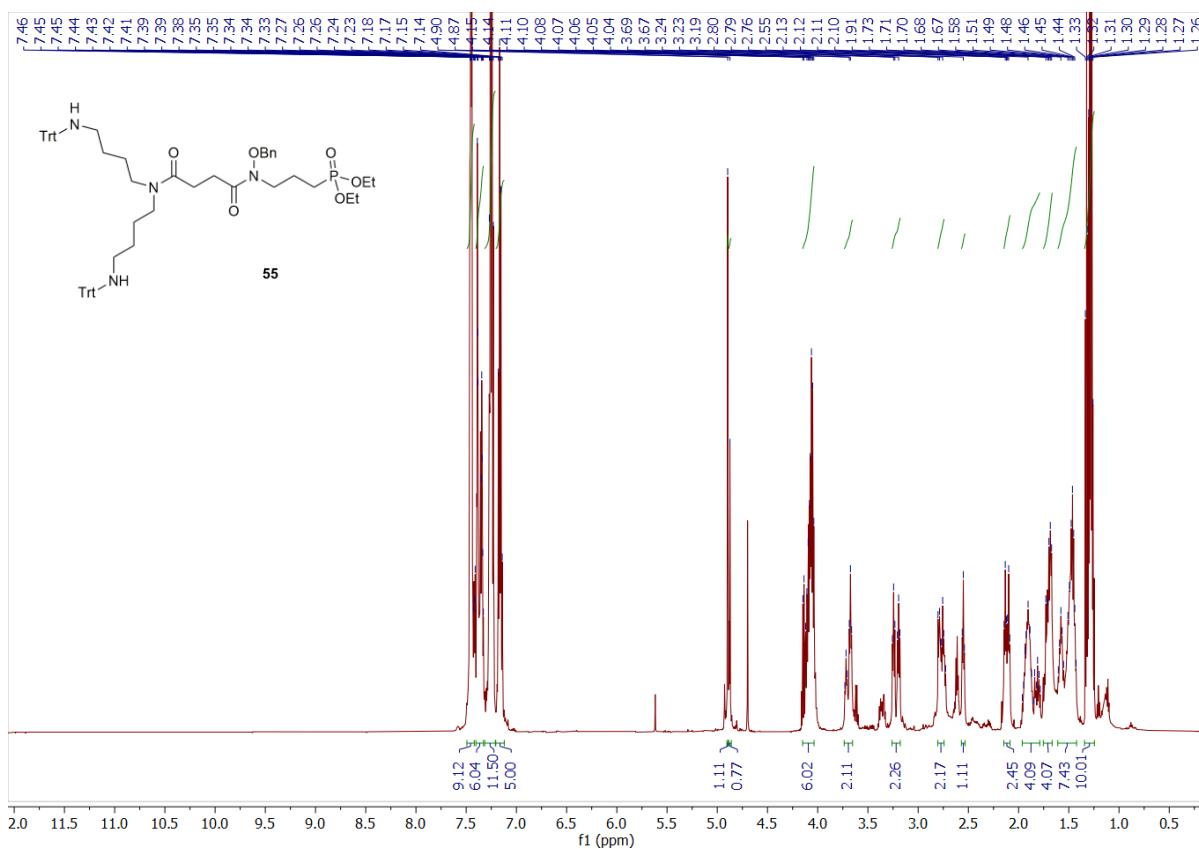
**Figure S15.**  $^{13}\text{C}$ -NMR spectrum of compound 21.



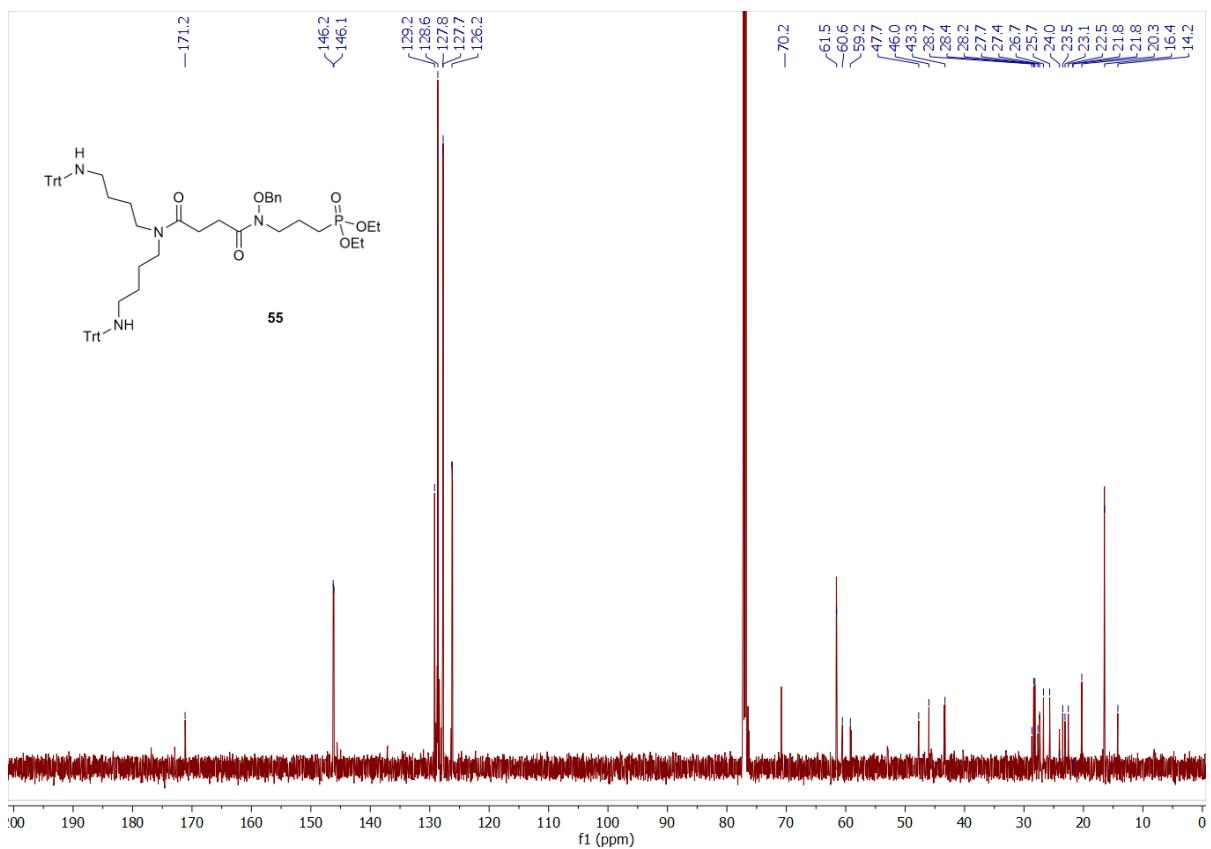
**Figure S16.**  $^1\text{H}$ -NMR spectrum of compound 54.



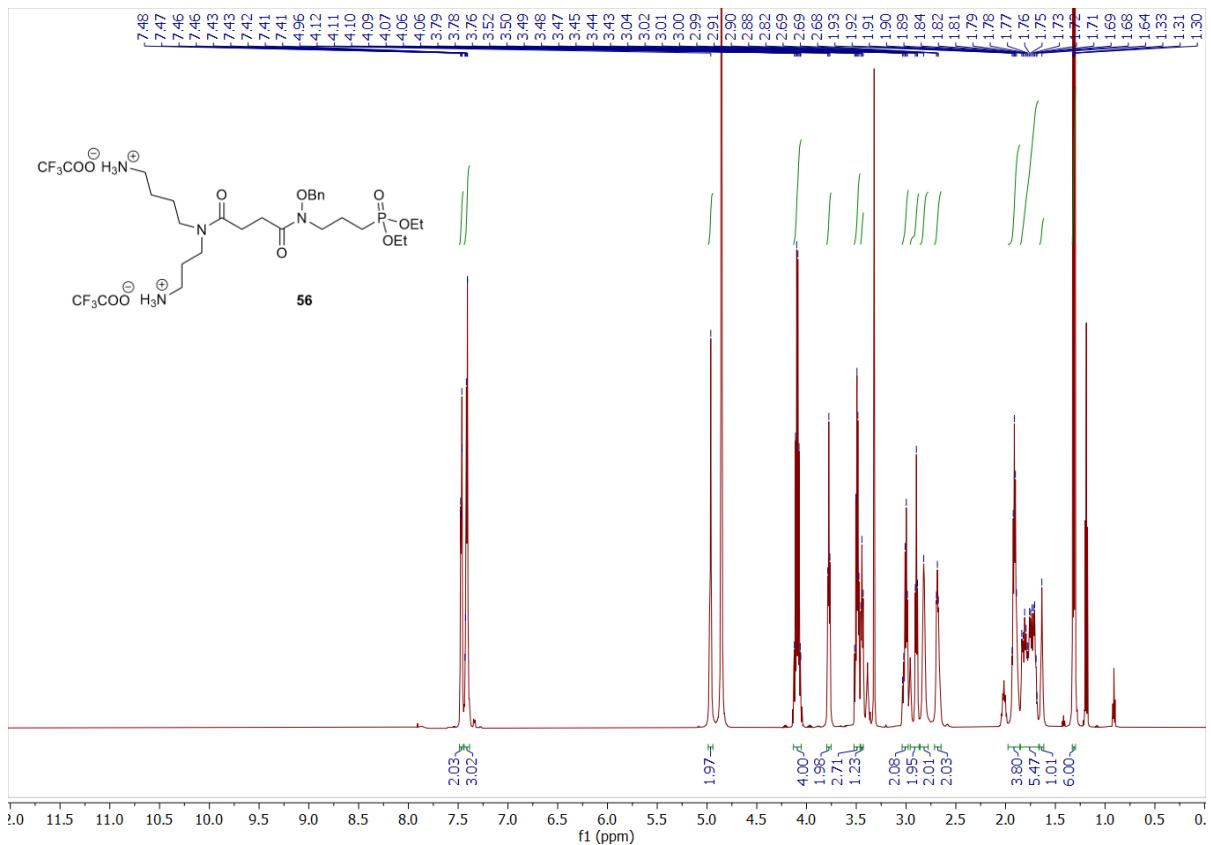
**Figure S17.**  $^{13}\text{C}$ -NMR spectrum of compound 54.



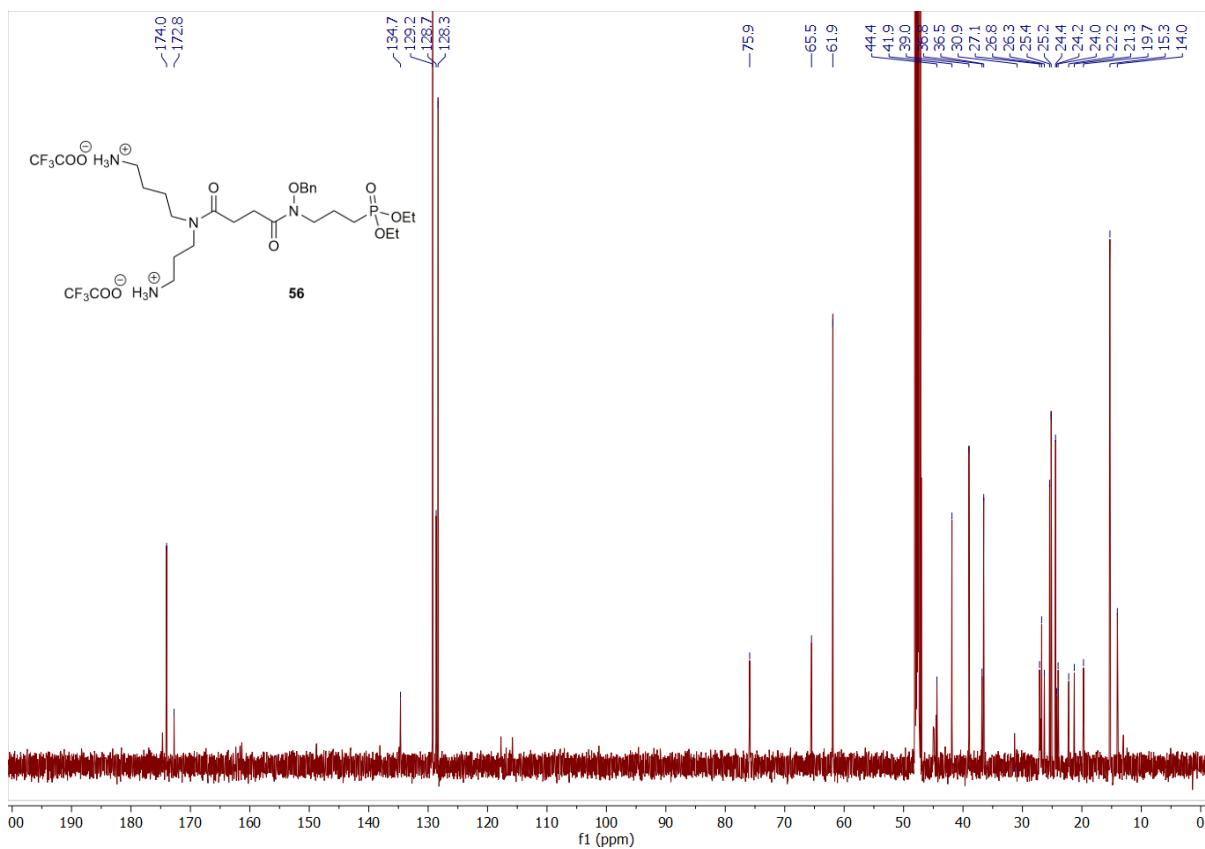
**Figure S18.**  $^1\text{H}$ -NMR spectrum of compound 55.



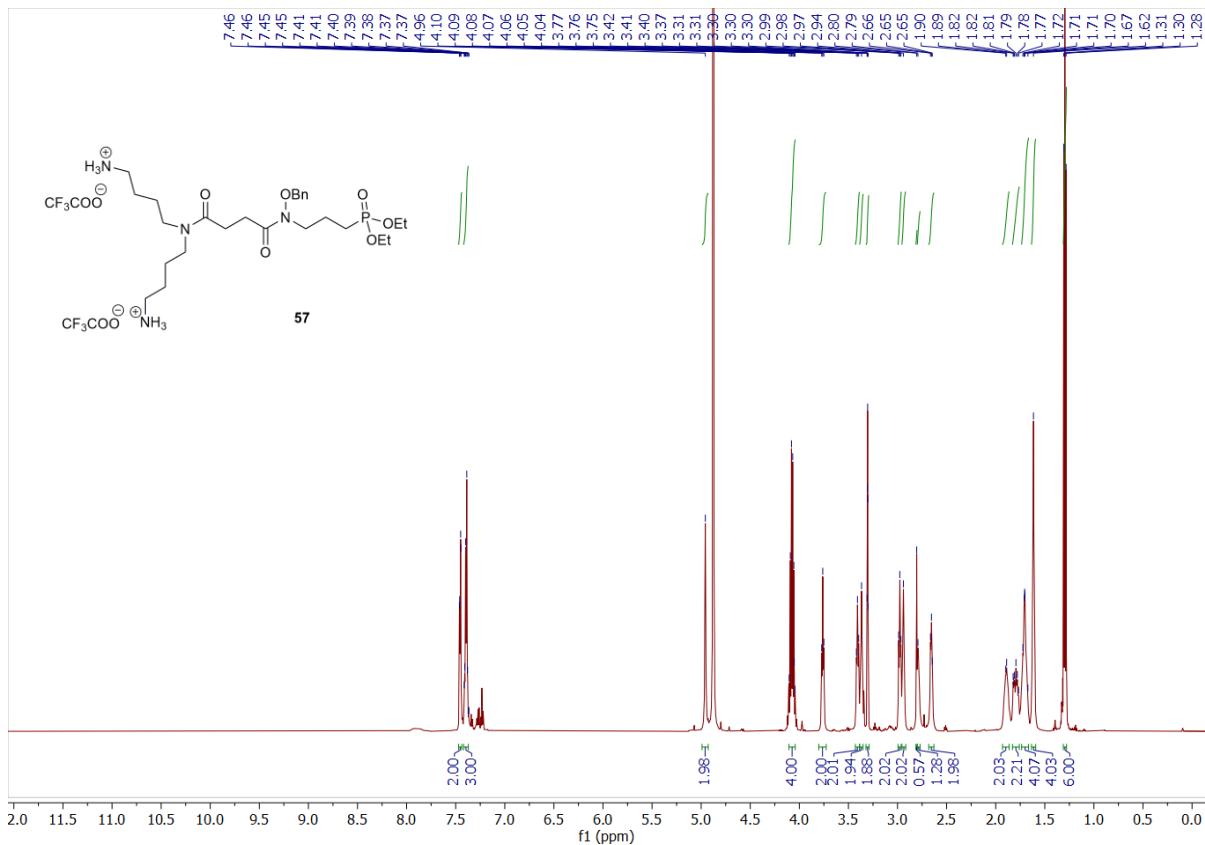
**Figure S19.** <sup>13</sup>C-NMR spectrum of compound 55.



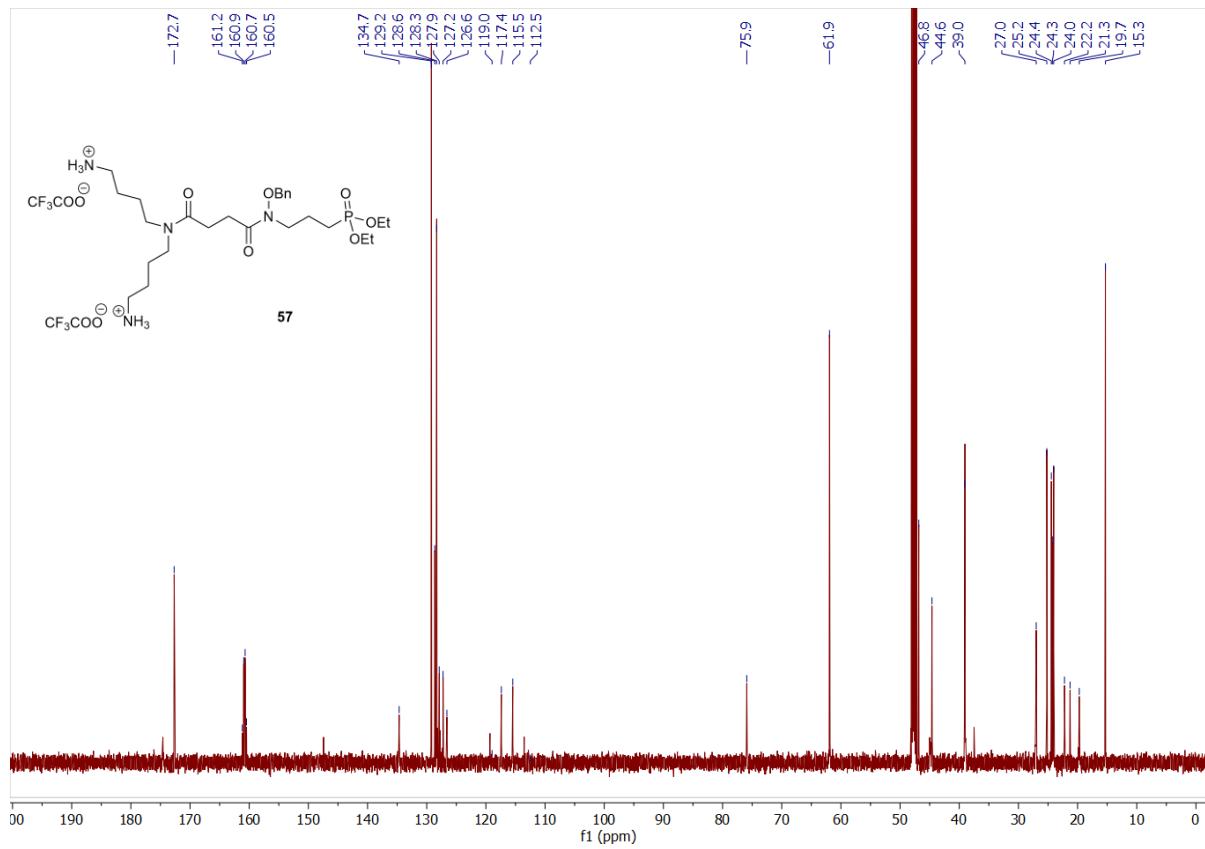
**Figure S20.** <sup>1</sup>H-NMR spectrum of compound 56.



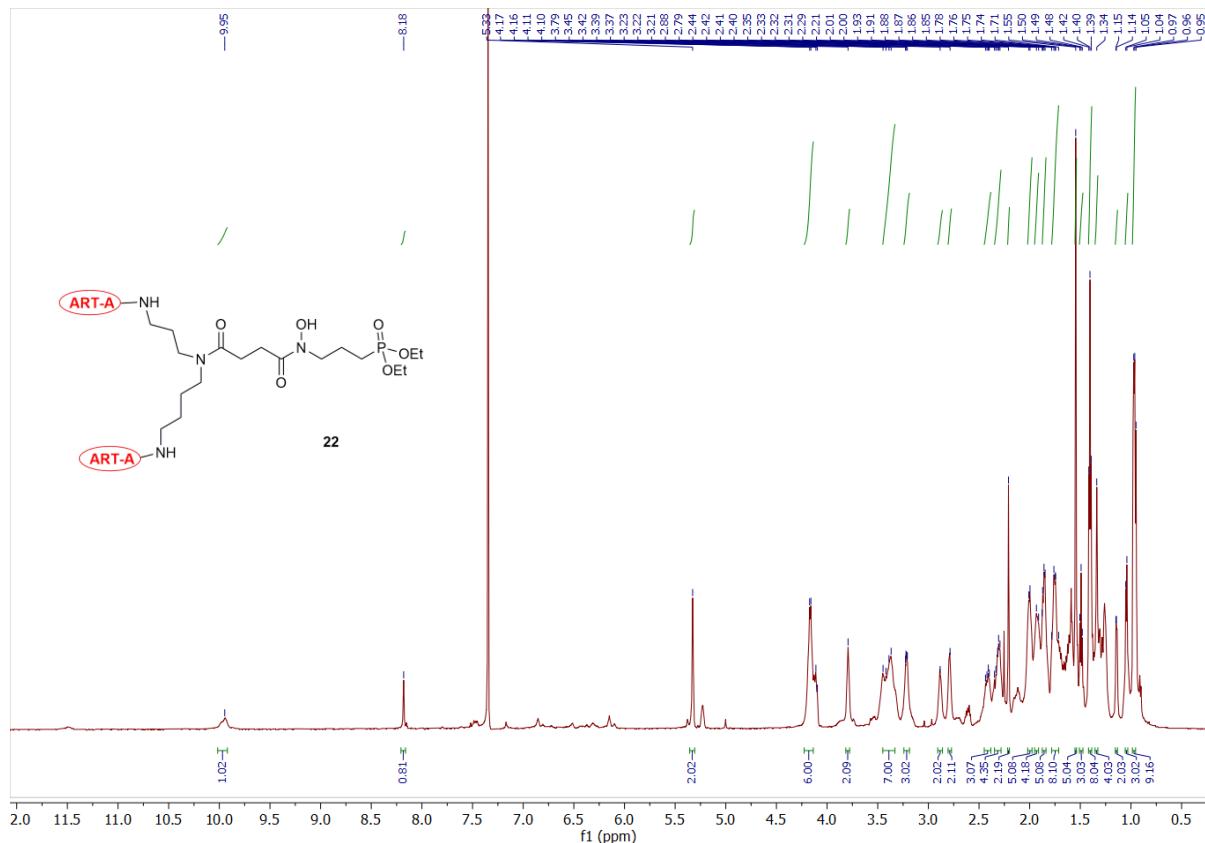
**Figure S21.** <sup>13</sup>C-NMR spectrum of compound 56.



**Figure S22.** <sup>1</sup>H-NMR spectrum of compound 57.



**Figure S23.**  $^{13}\text{C}$ -NMR spectrum of compound 57.



**Figure S24.**  $^1\text{H}$ -NMR spectrum of compound 22.

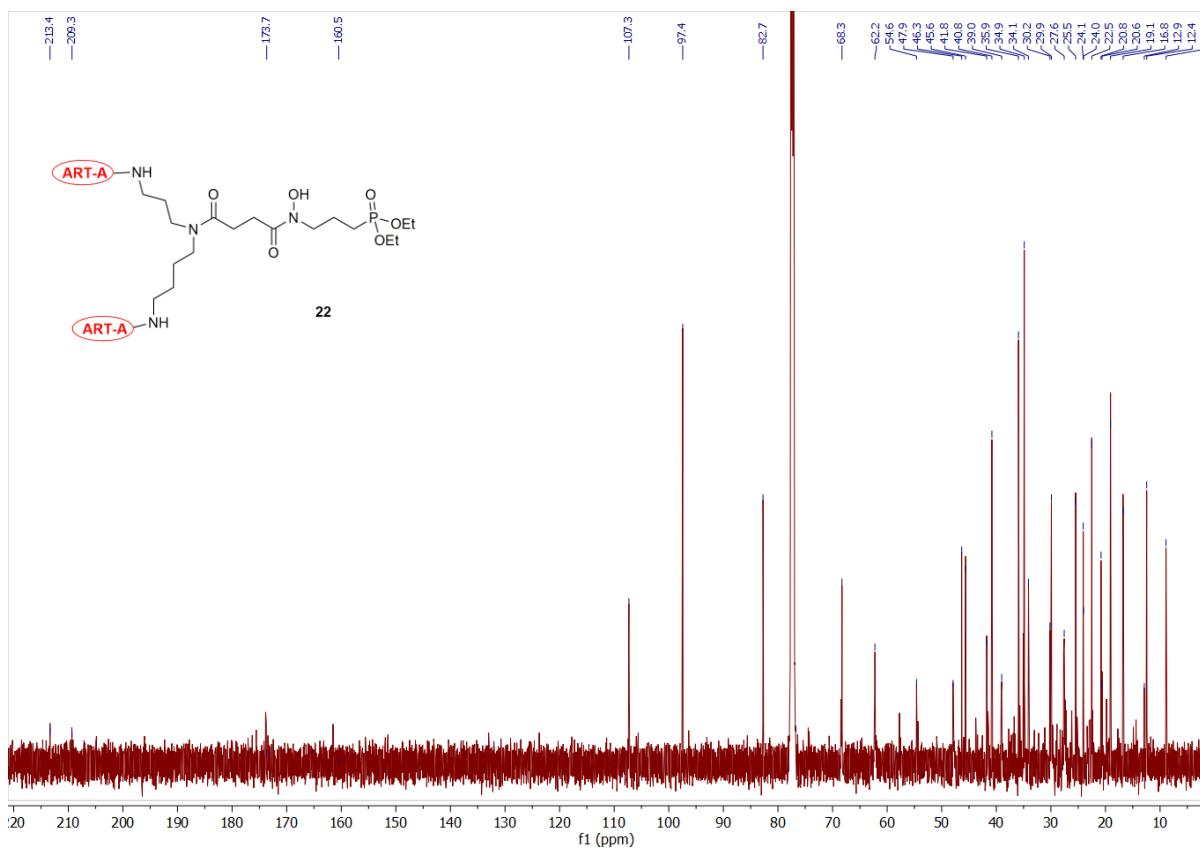


Figure S25.  $^{13}\text{C}$ -NMR spectrum of compound 22.

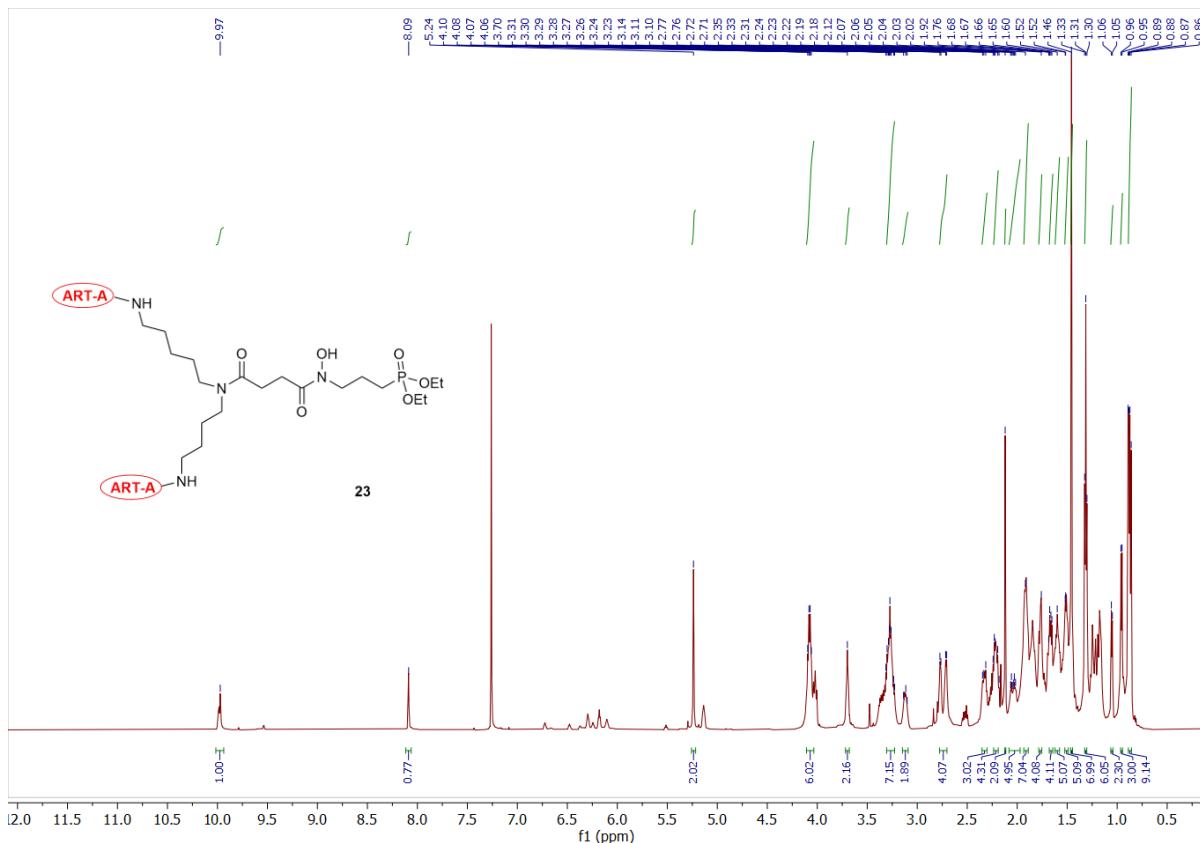
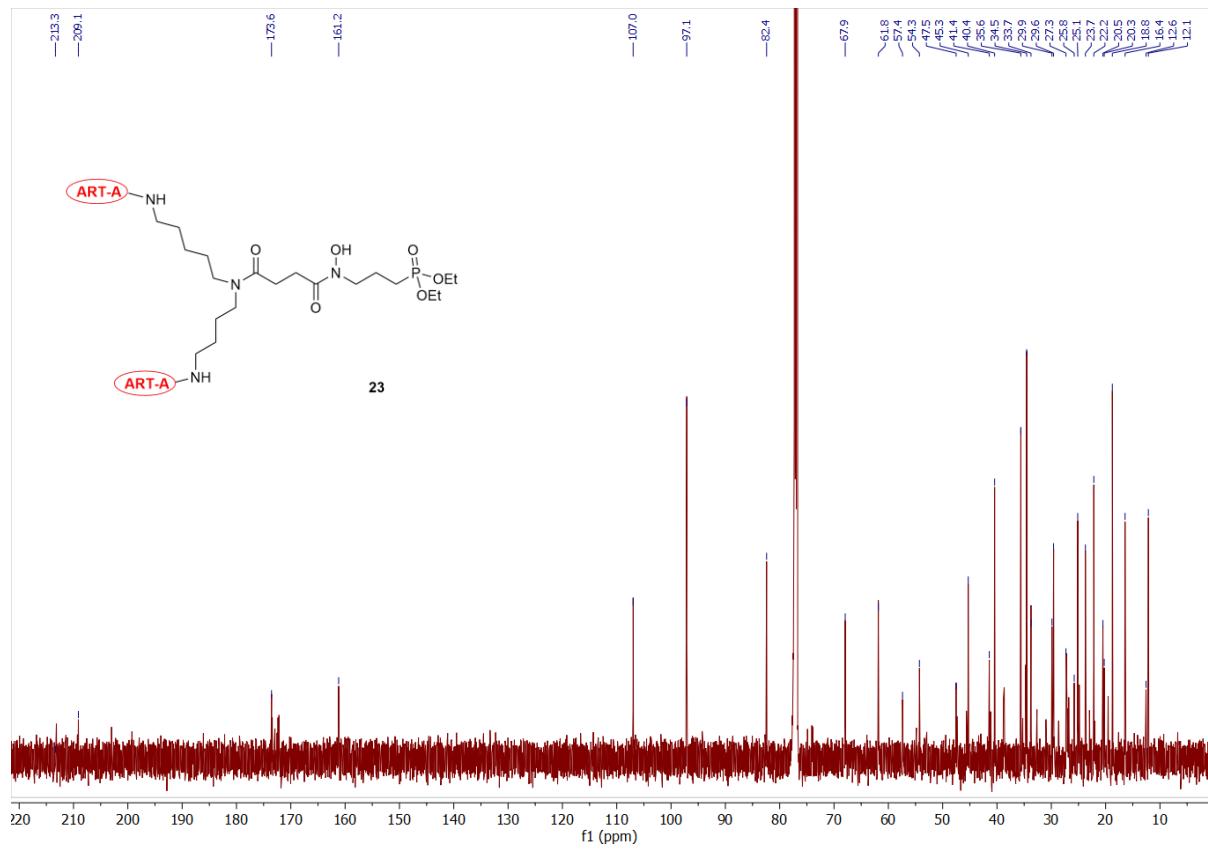
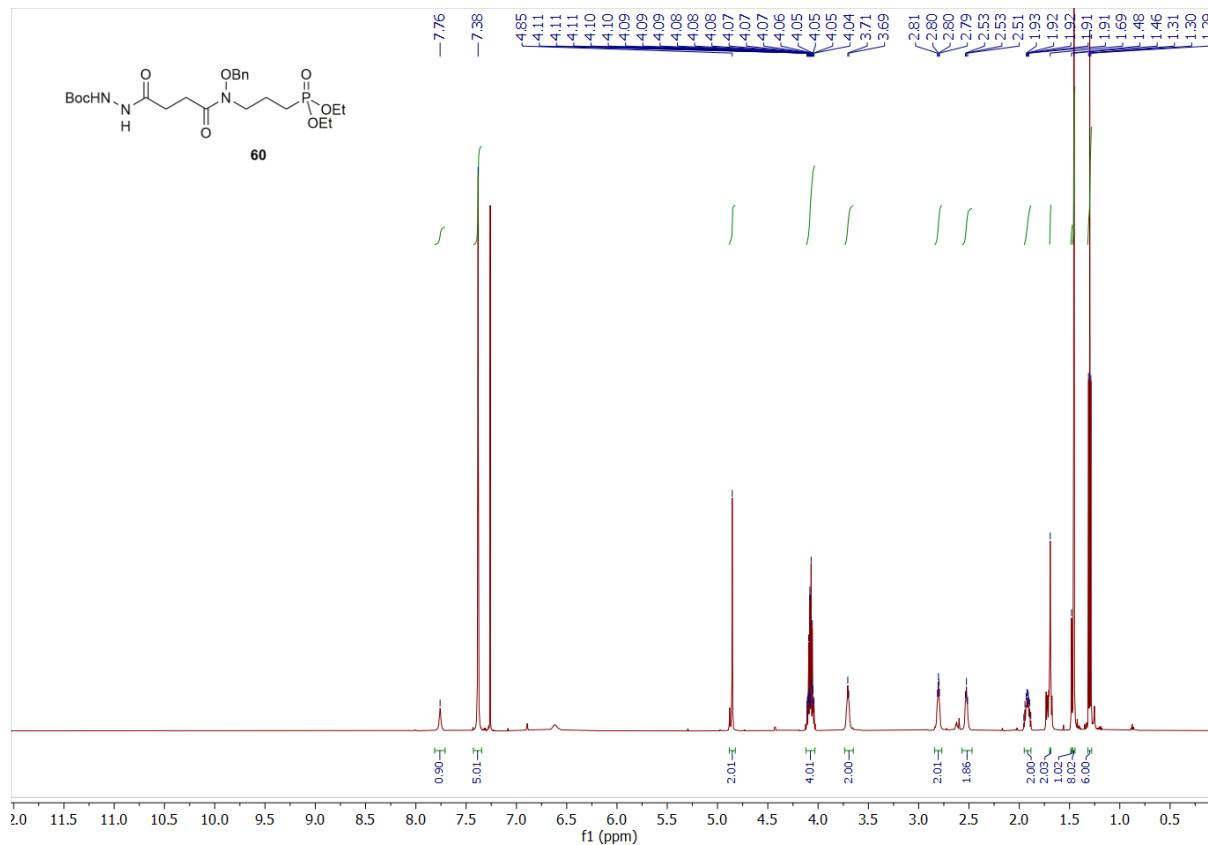


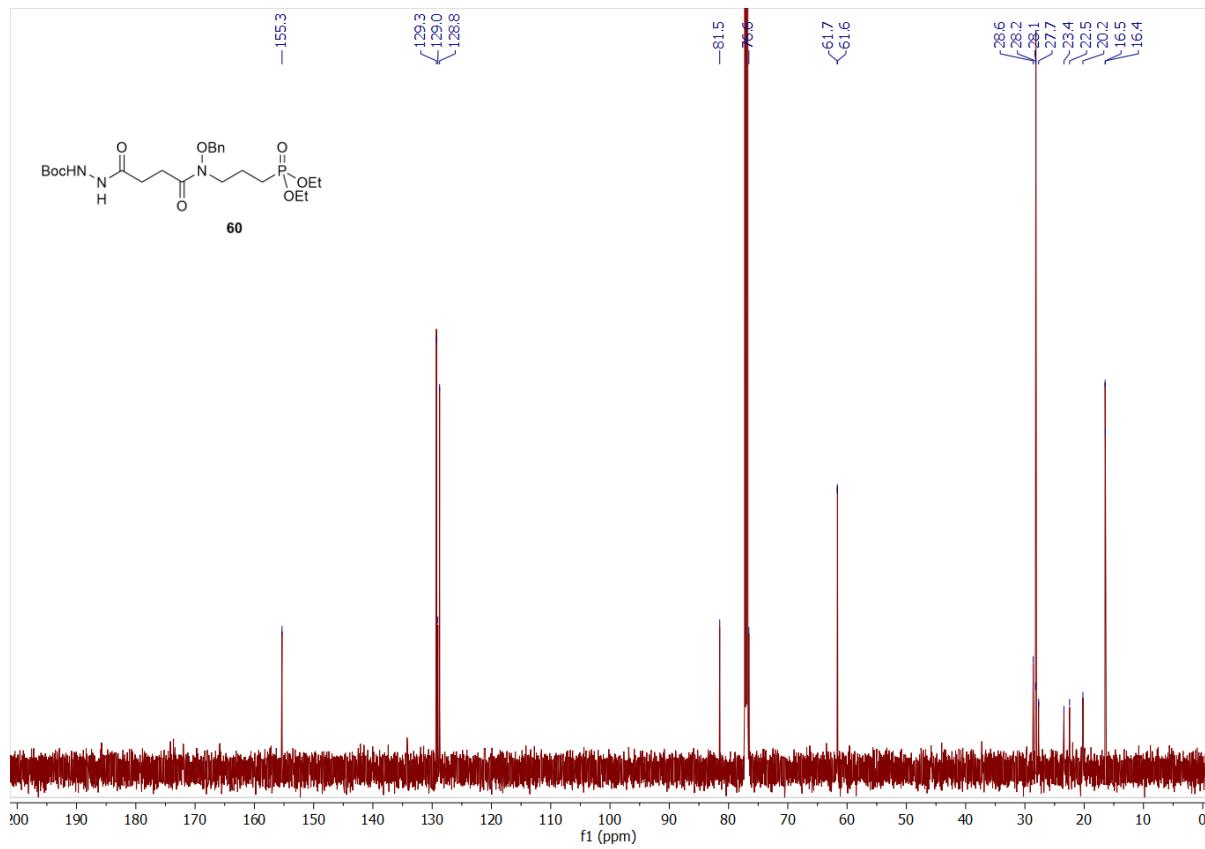
Figure S26.  $^1\text{H}$ -NMR spectrum of compound 23.



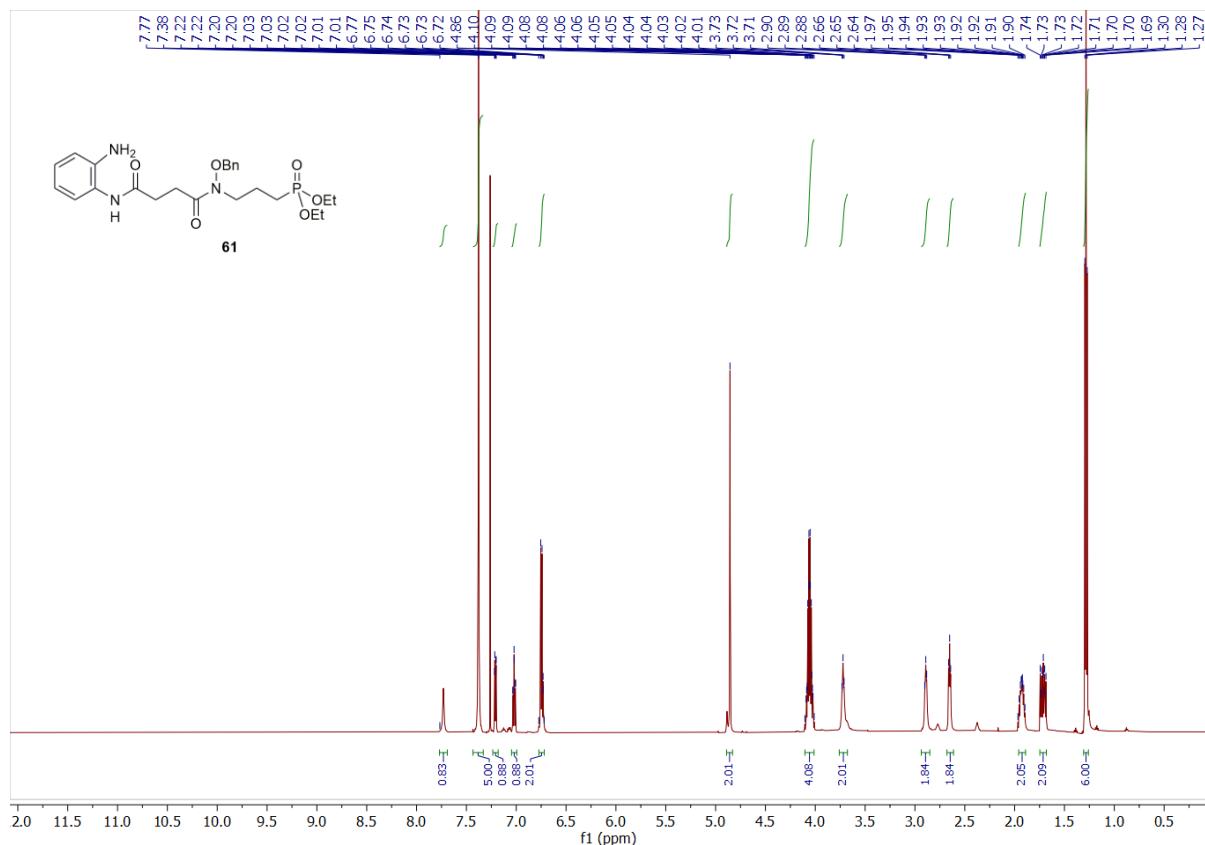
**Figure S27.**  $^{13}\text{C}$ -NMR spectrum of compound 23.



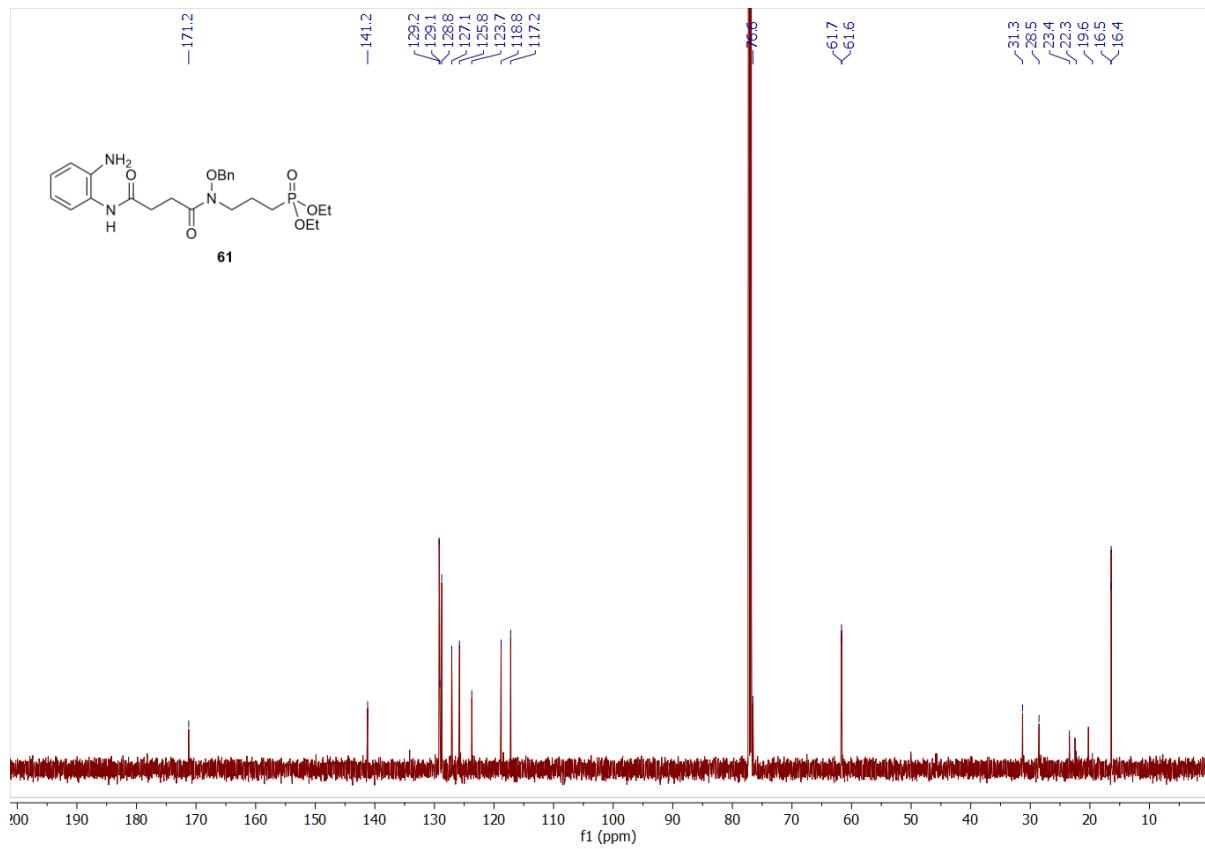
**Figure S28.**  $^1\text{H}$ -NMR spectrum of compound 60.



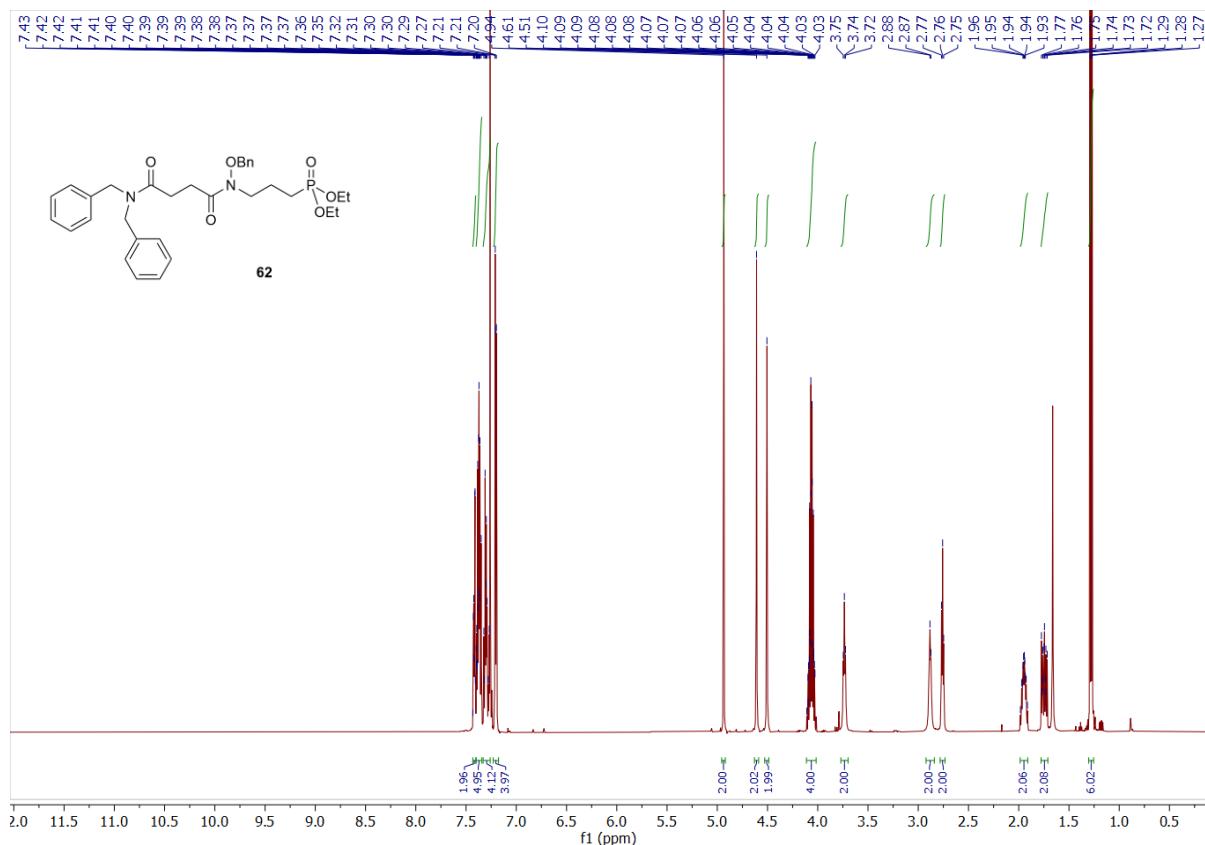
**Figure S29.**  $^{13}\text{C}$ -NMR spectrum of compound 60.



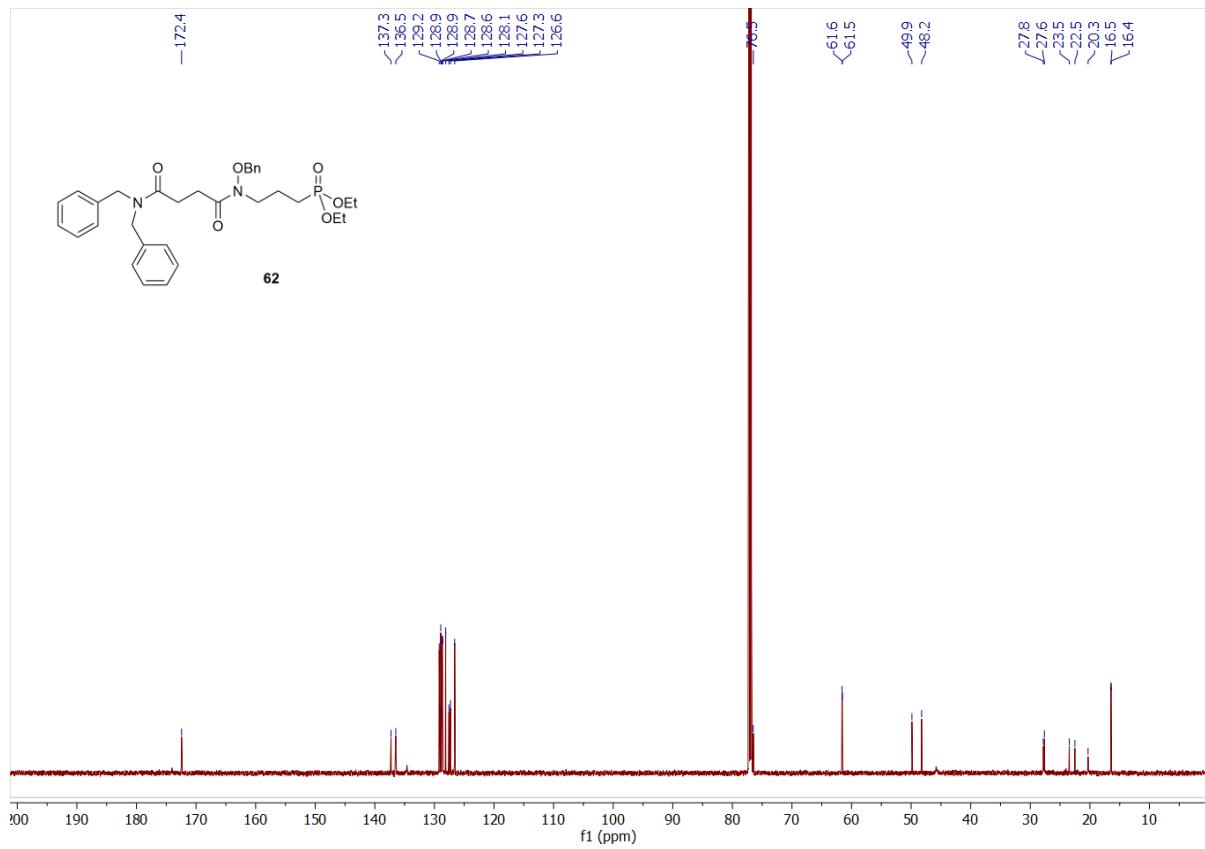
**Figure S30.**  $^1\text{H}$ -NMR spectrum of compound 61.



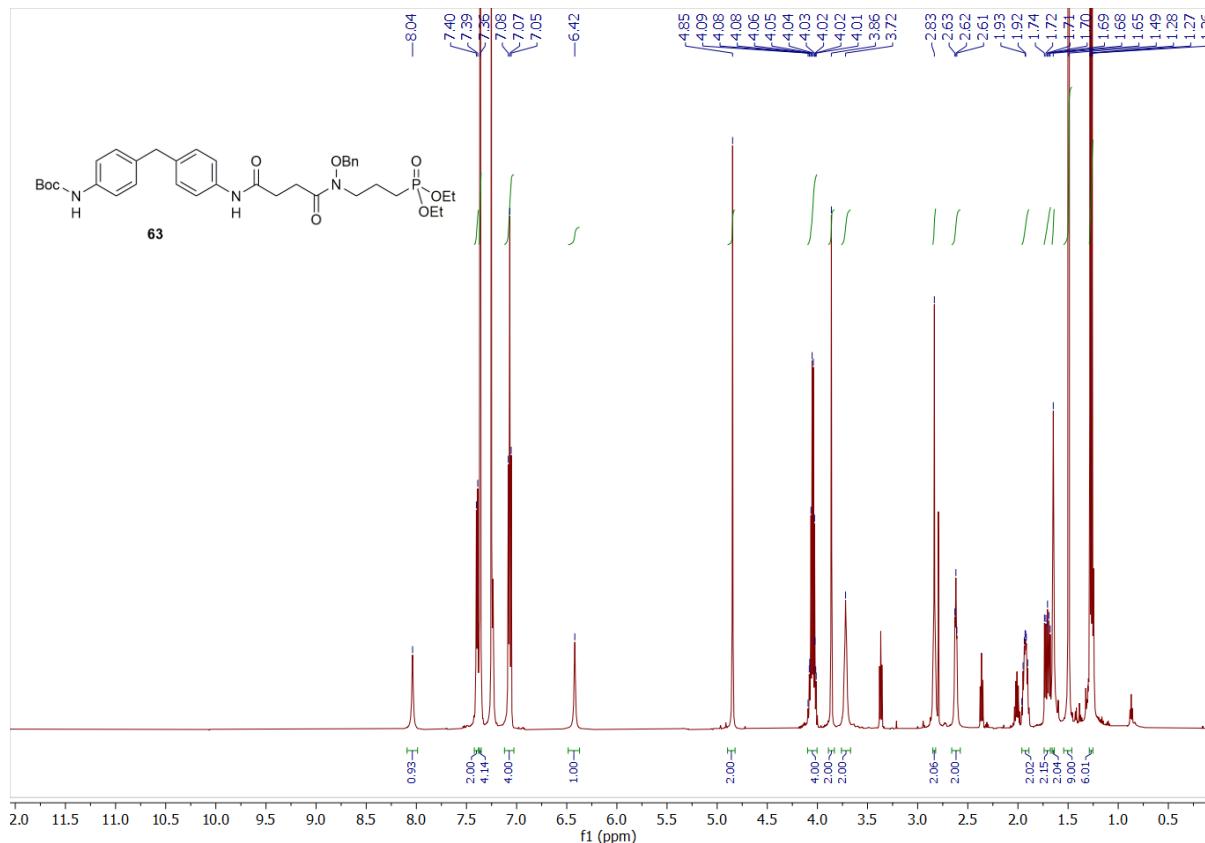
**Figure S31.**  $^{13}\text{C}$ -NMR spectrum of compound 61.



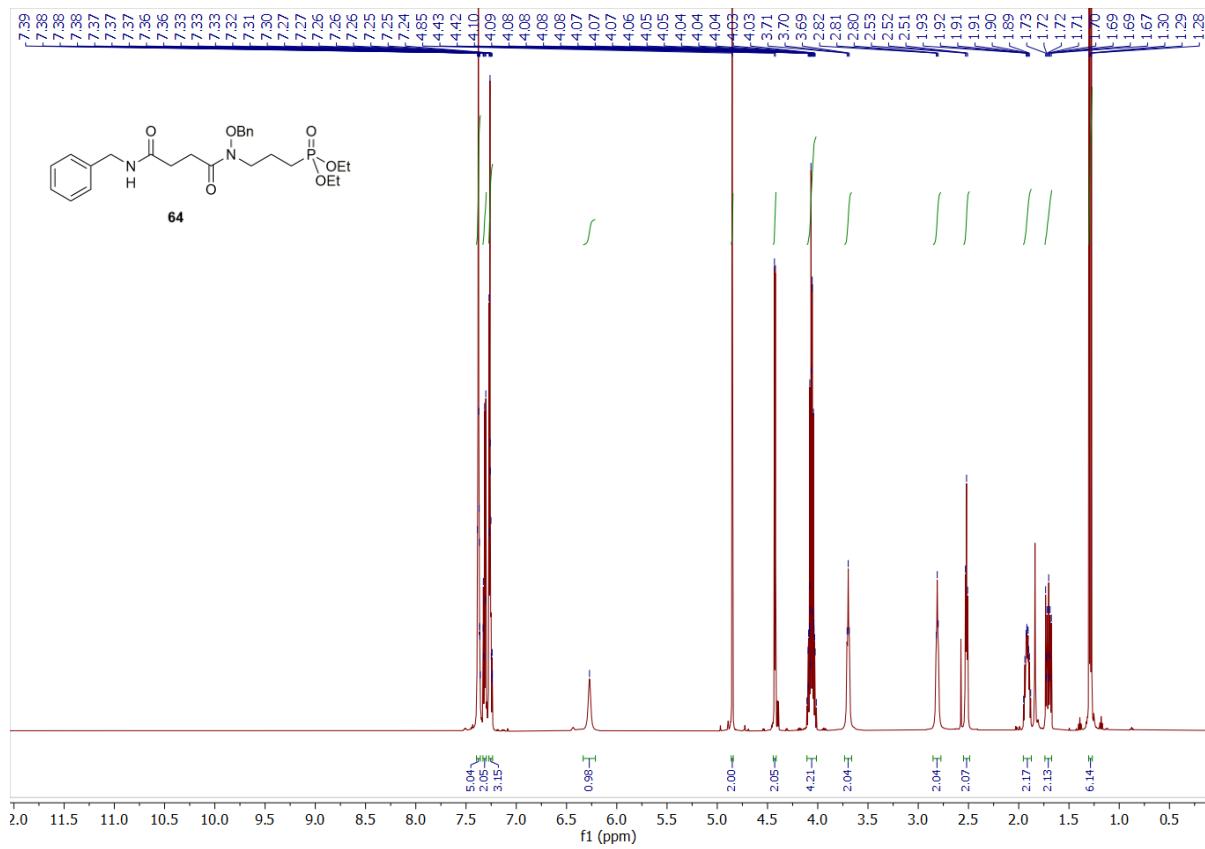
**Figure S32.**  $^1\text{H}$ -NMR spectrum of compound 62.



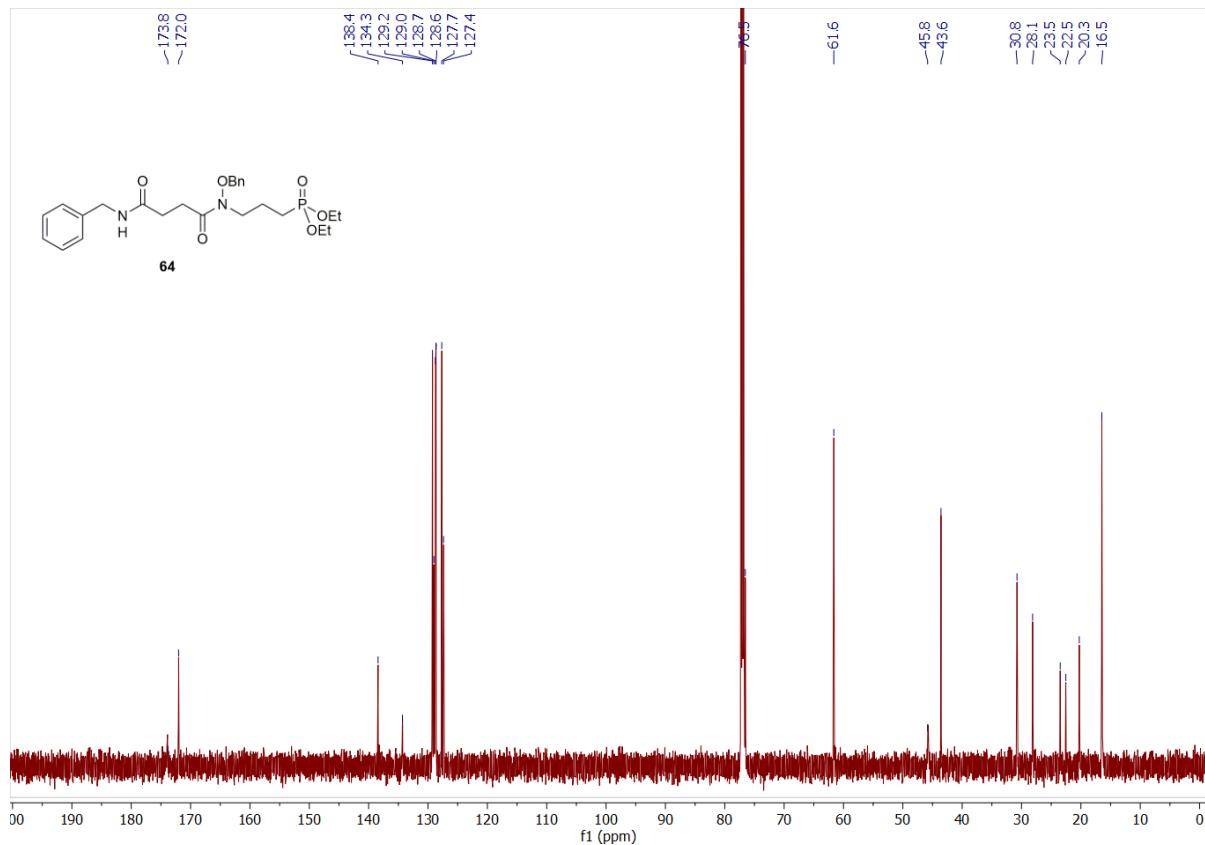
**Figure S33.**  $^{13}\text{C}$ -NMR spectrum of compound 62.



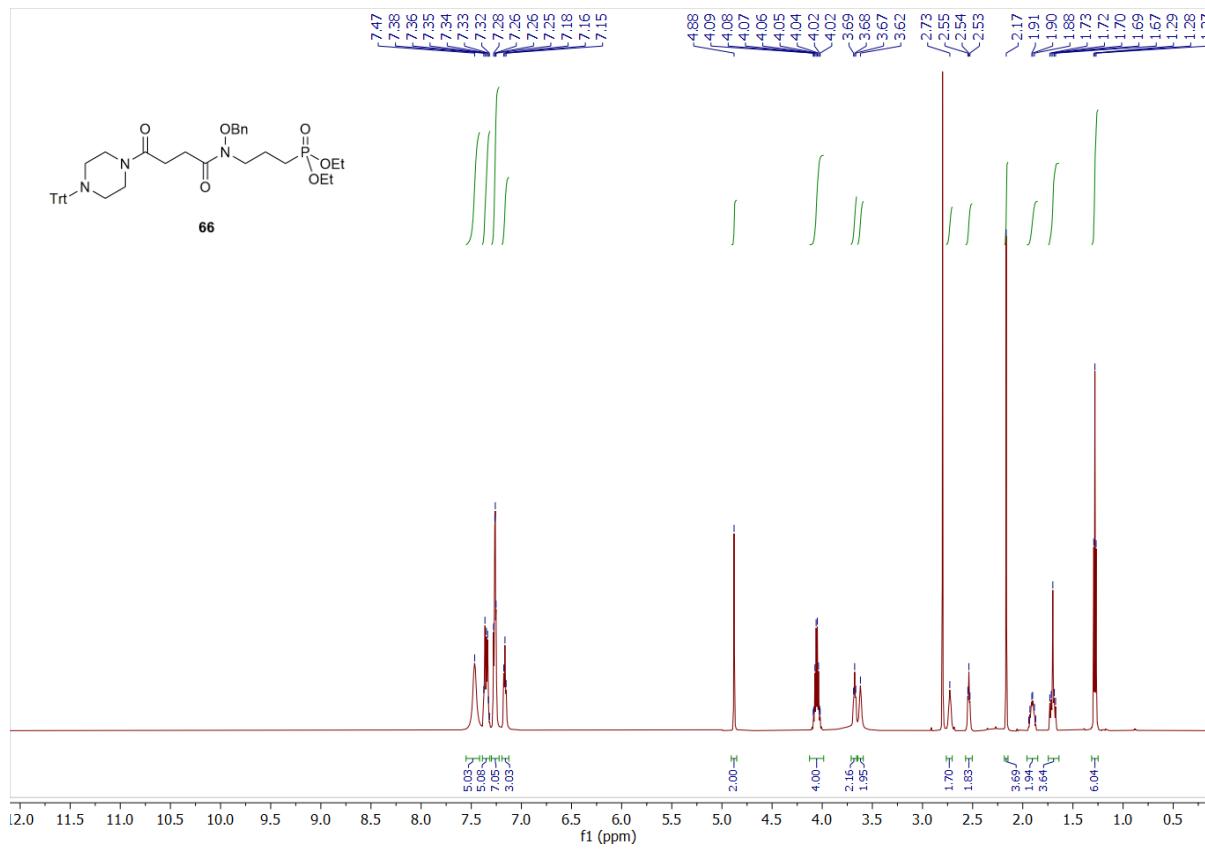
**Figure S34.**  $^1\text{H}$ -NMR spectrum of compound 63.



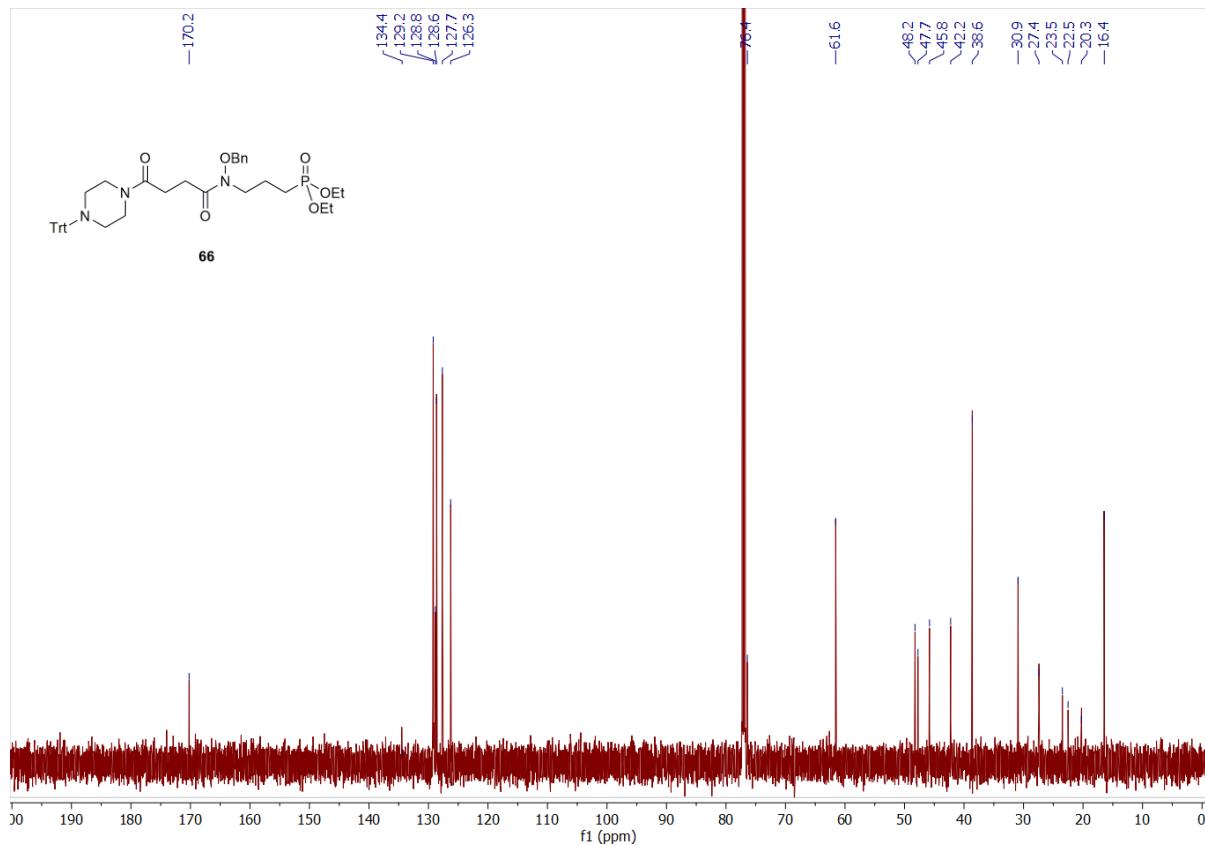
**Figure S35.**  $^1\text{H}$ -NMR spectrum of compound 64.



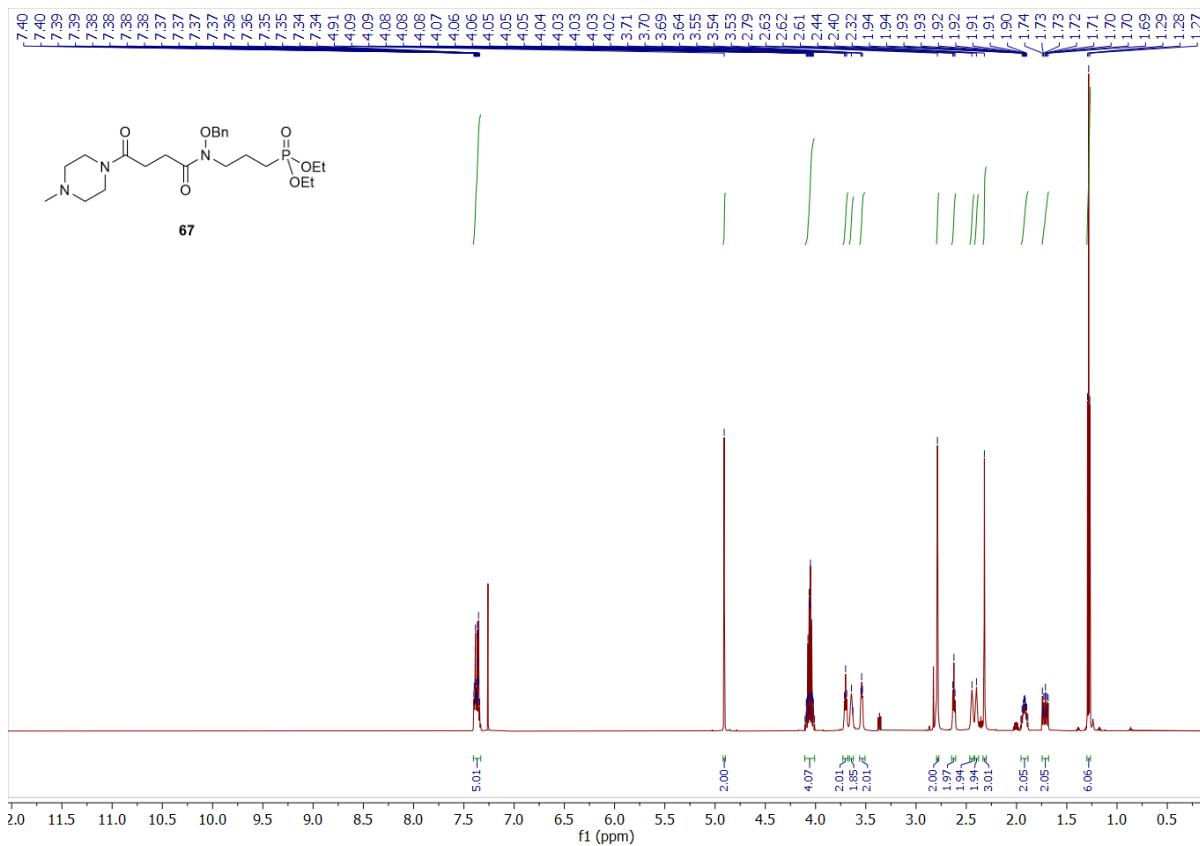
**Figure S36.**  $^{13}\text{C}$ -NMR spectrum of compound 64.



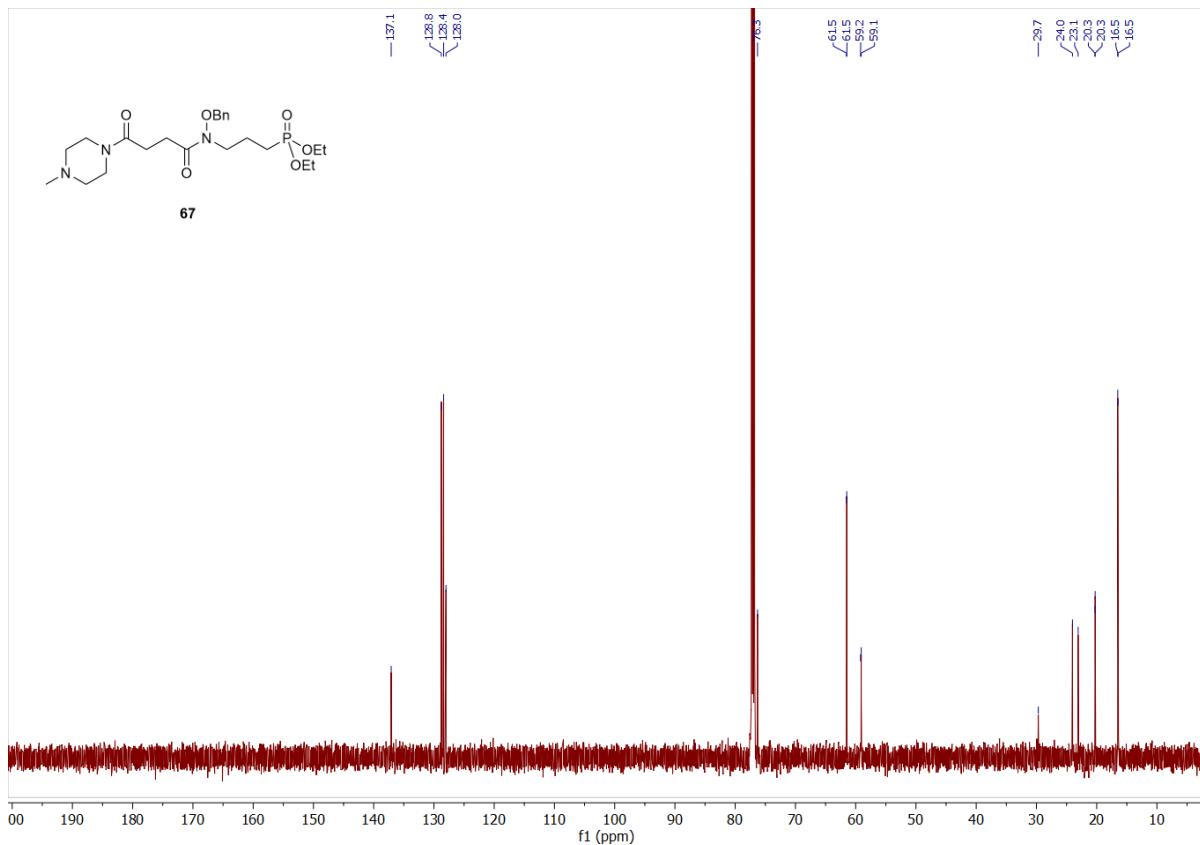
**Figure S37.**  $^1\text{H}$ -NMR spectrum of compound 66.



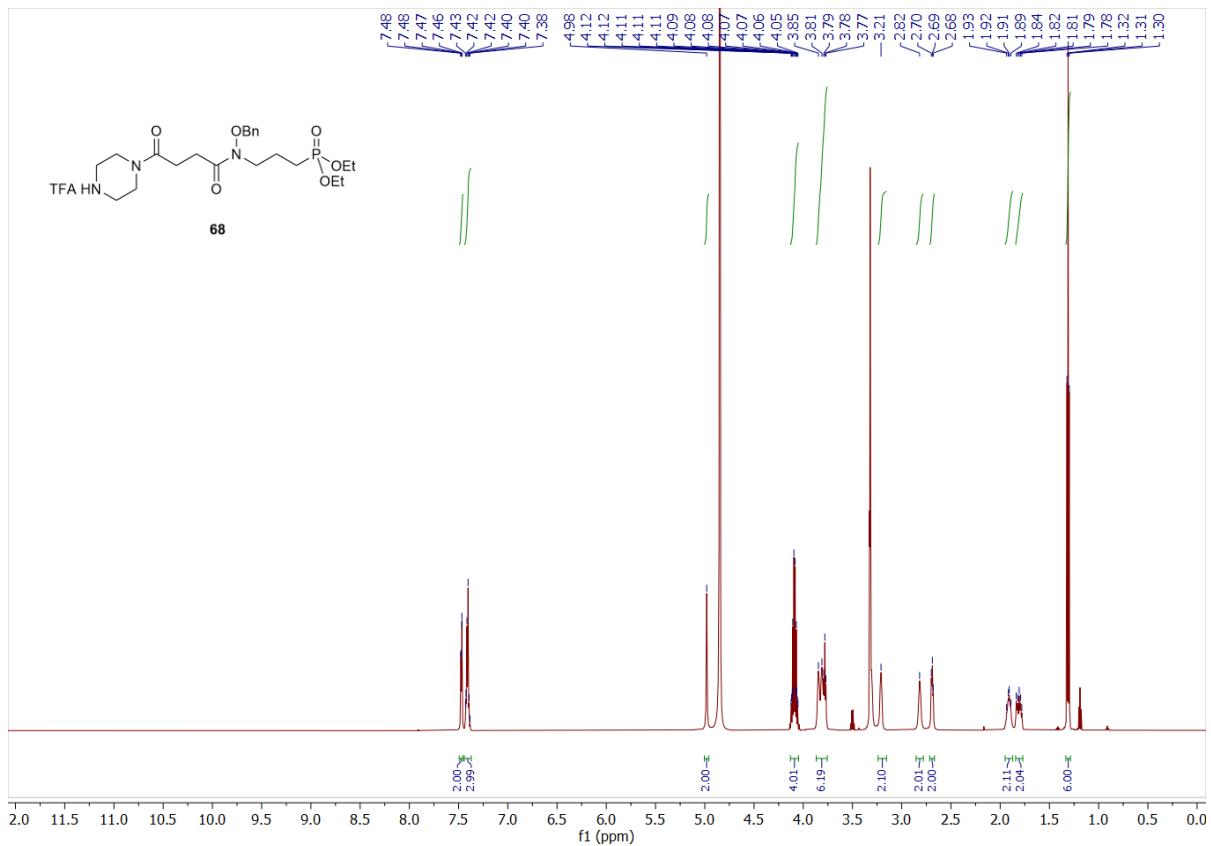
**Figure S38.**  $^{13}\text{C}$ -NMR spectrum of compound 66.



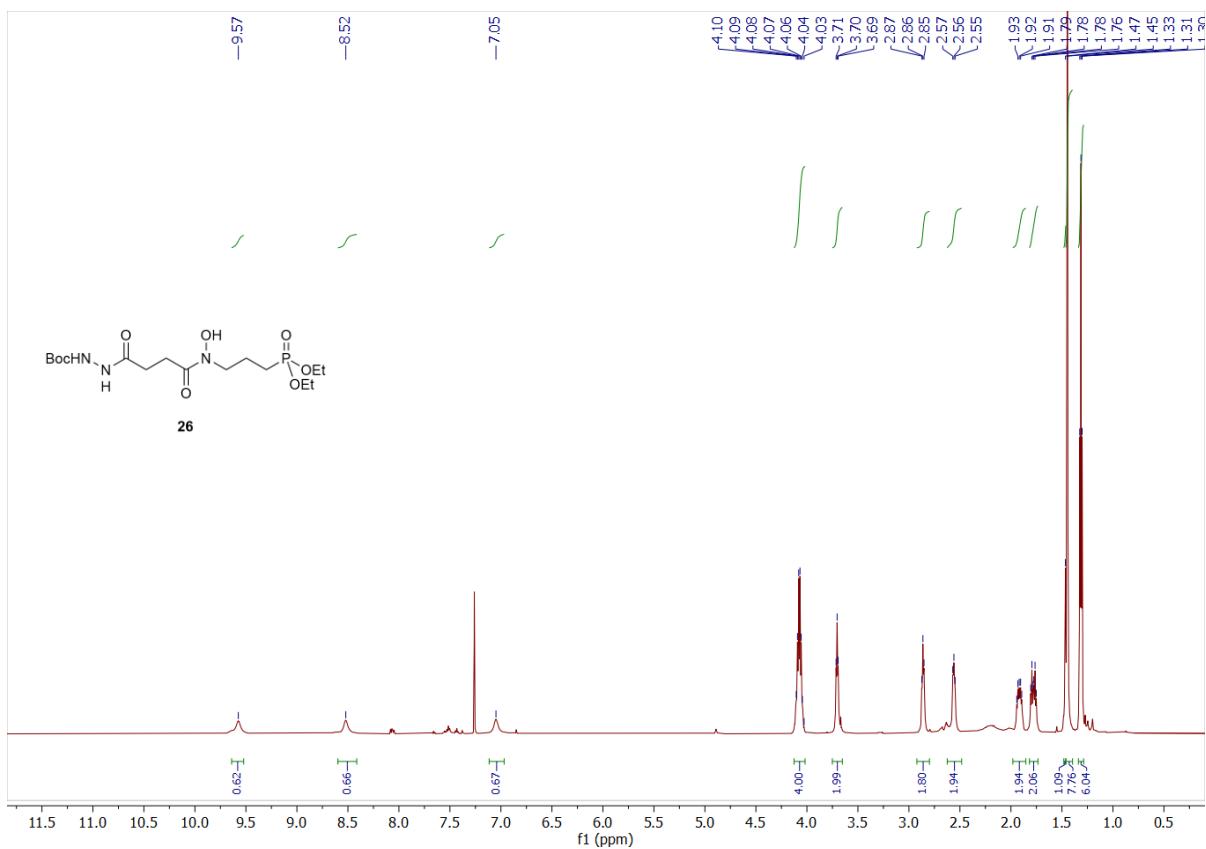
**Figure S39.** <sup>1</sup>H-NMR spectrum of compound 67.



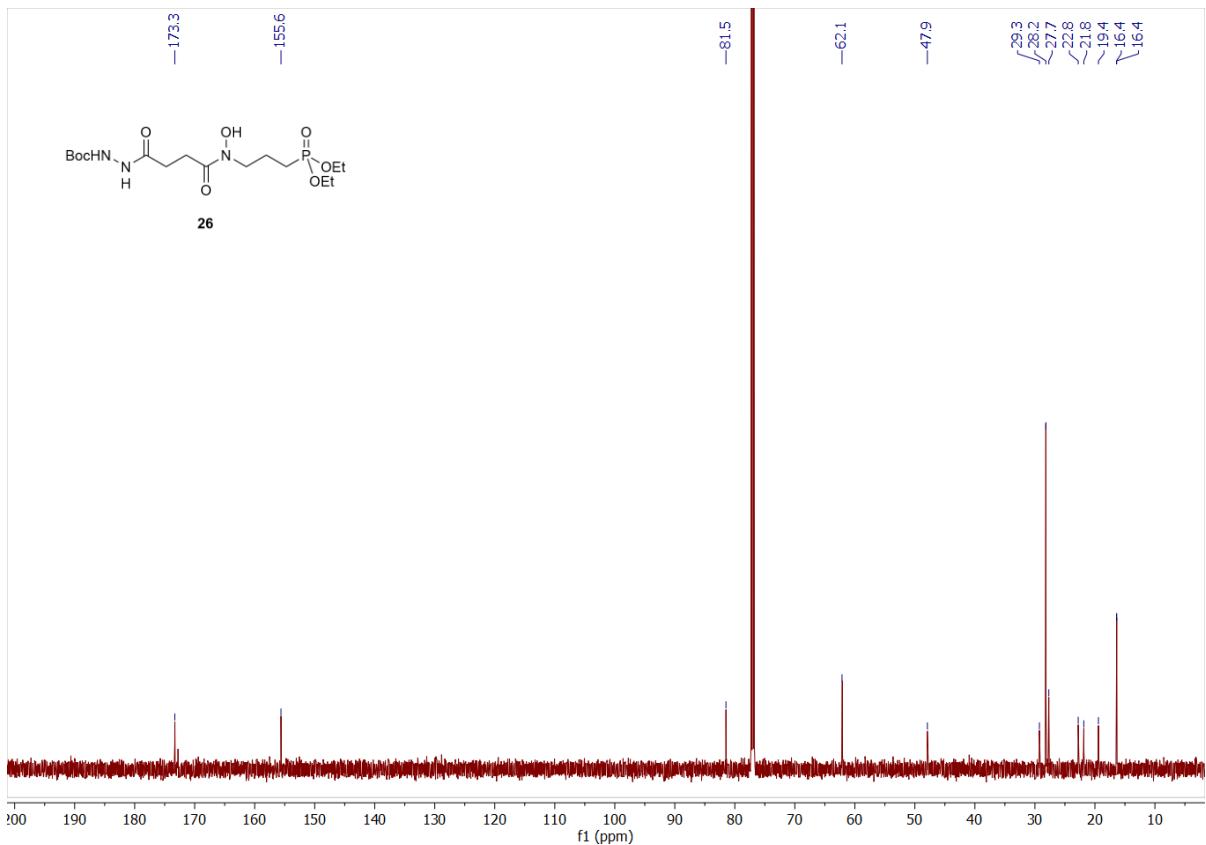
**Figure S40.** <sup>13</sup>C-NMR spectrum of compound 67.



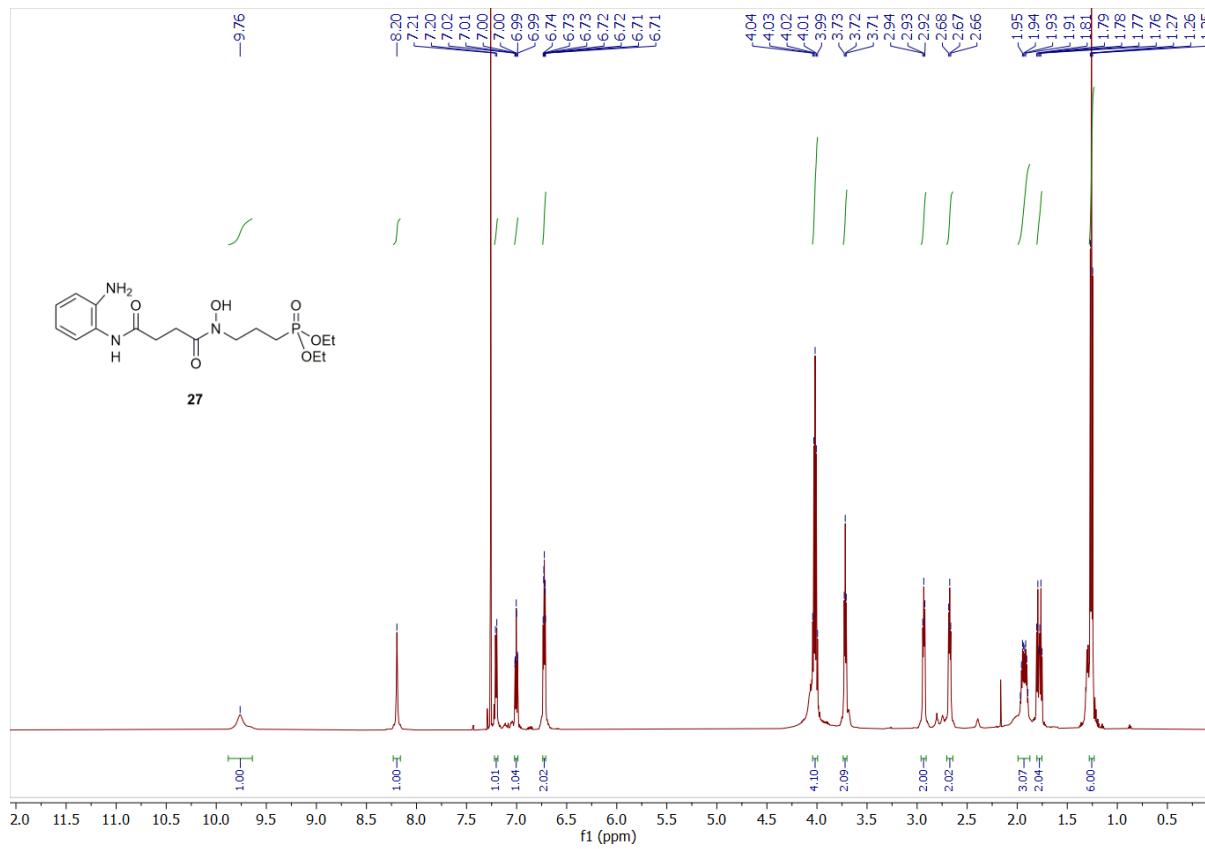
**Figure S41.**  $^1\text{H}$ -NMR spectrum of compound 68.



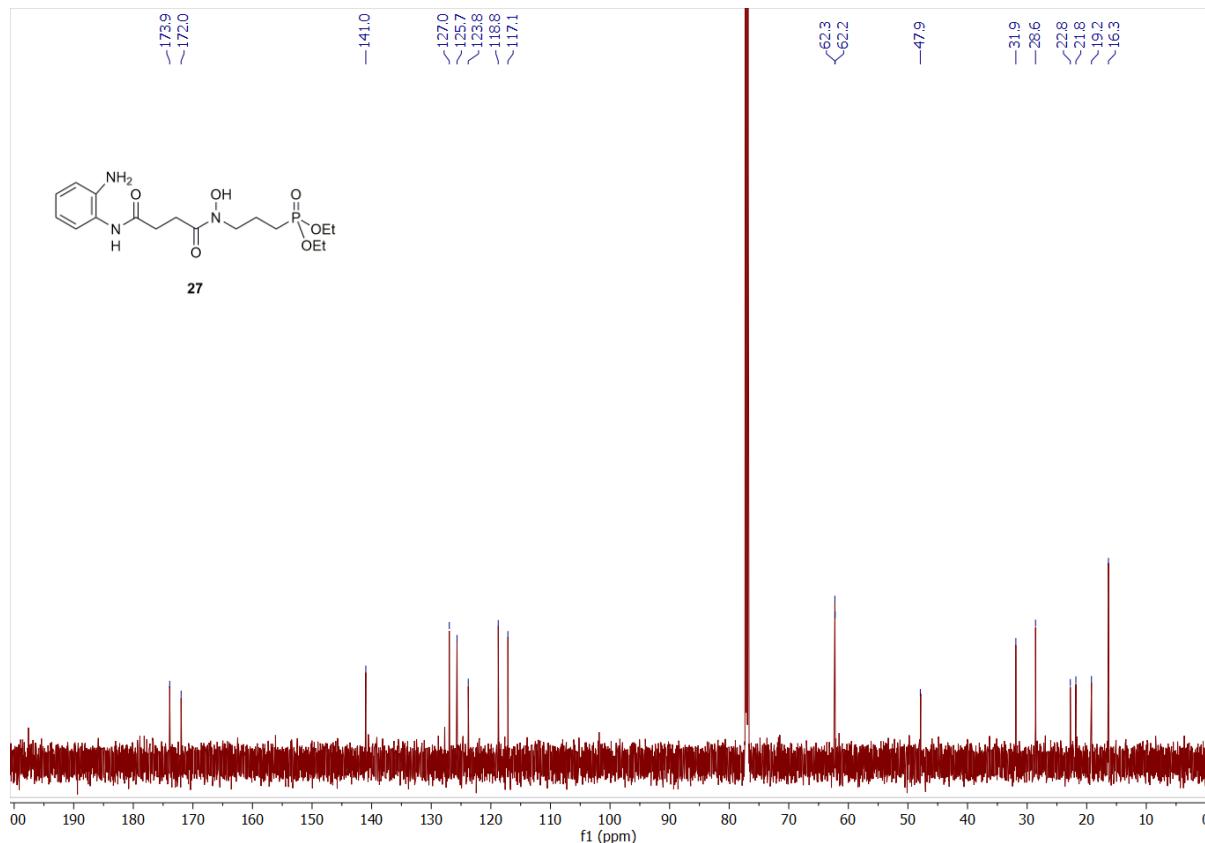
**Figure S42.** <sup>1</sup>H-NMR spectrum of compound 26.



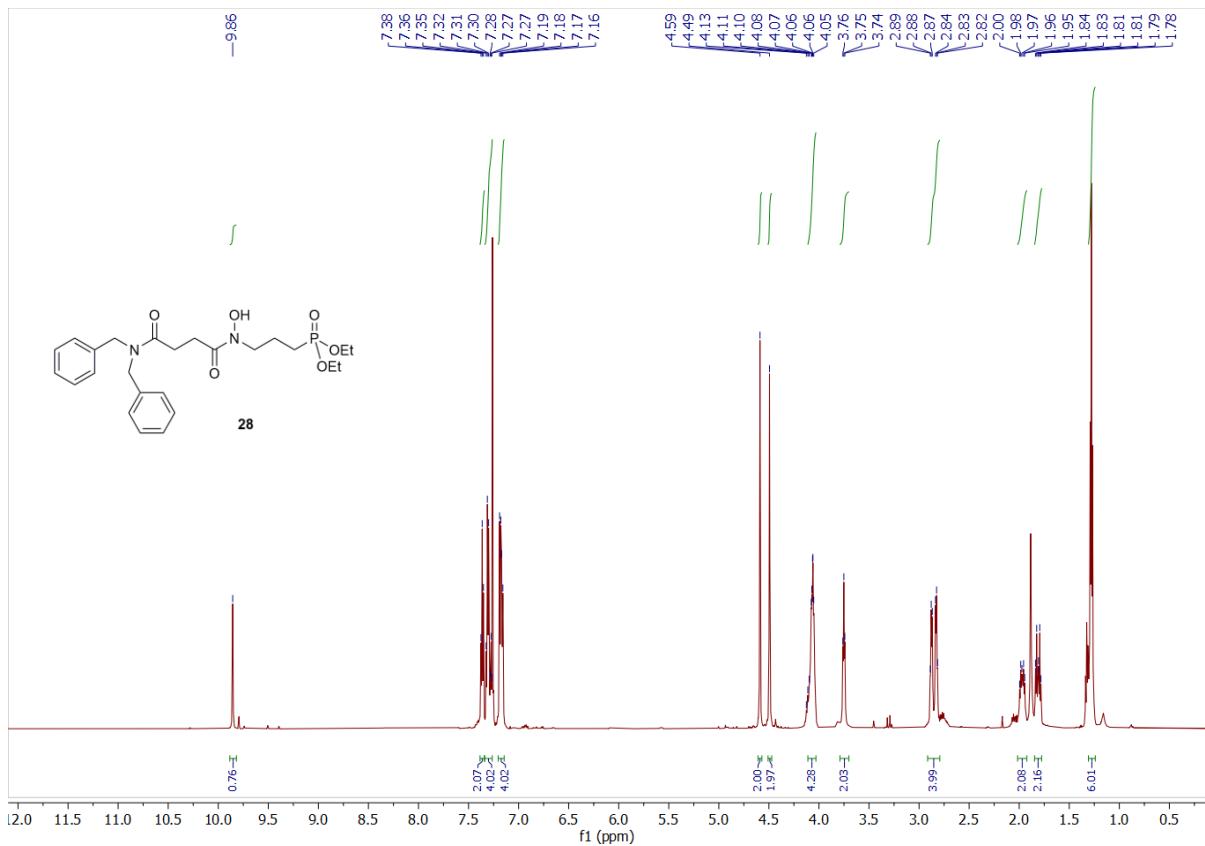
**Figure S43.** <sup>13</sup>C-NMR spectrum of compound 26.



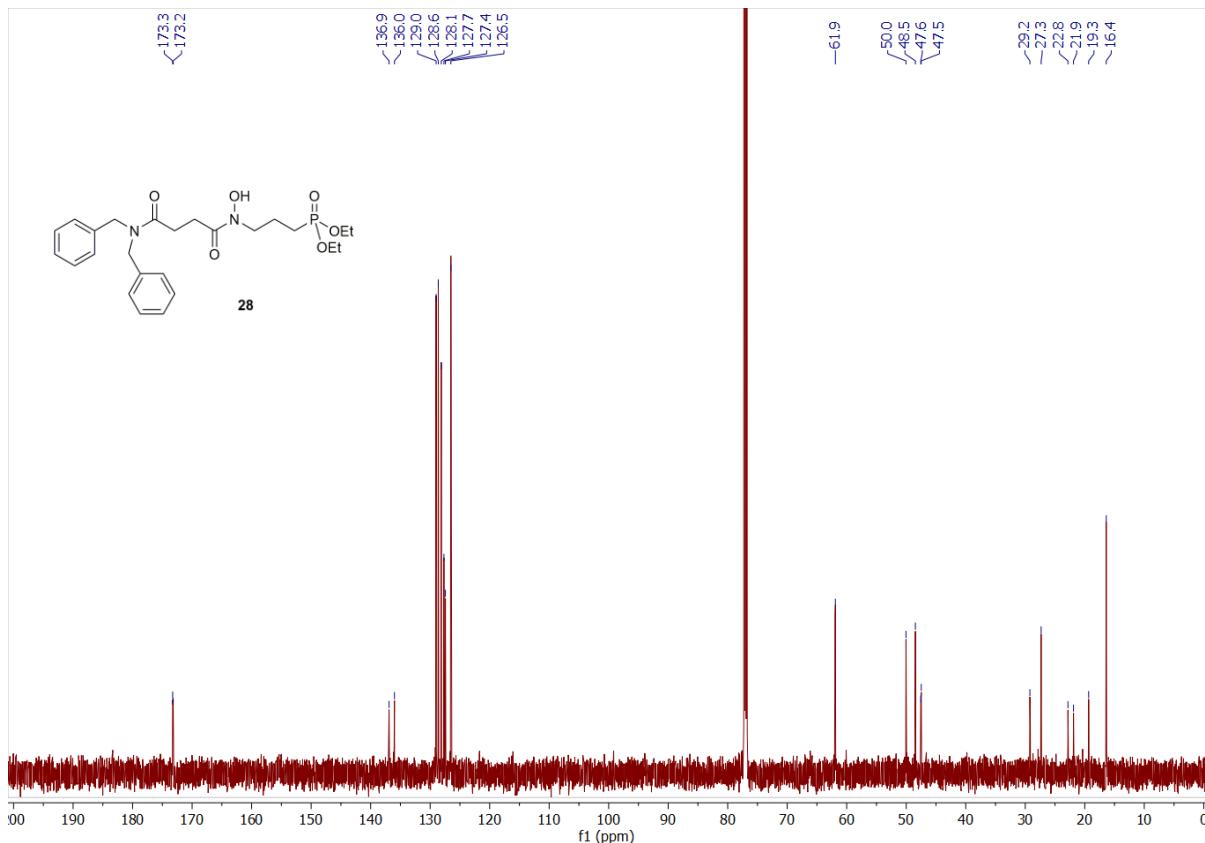
**Figure S44.**  $^1\text{H}$ -NMR spectrum of compound 27.



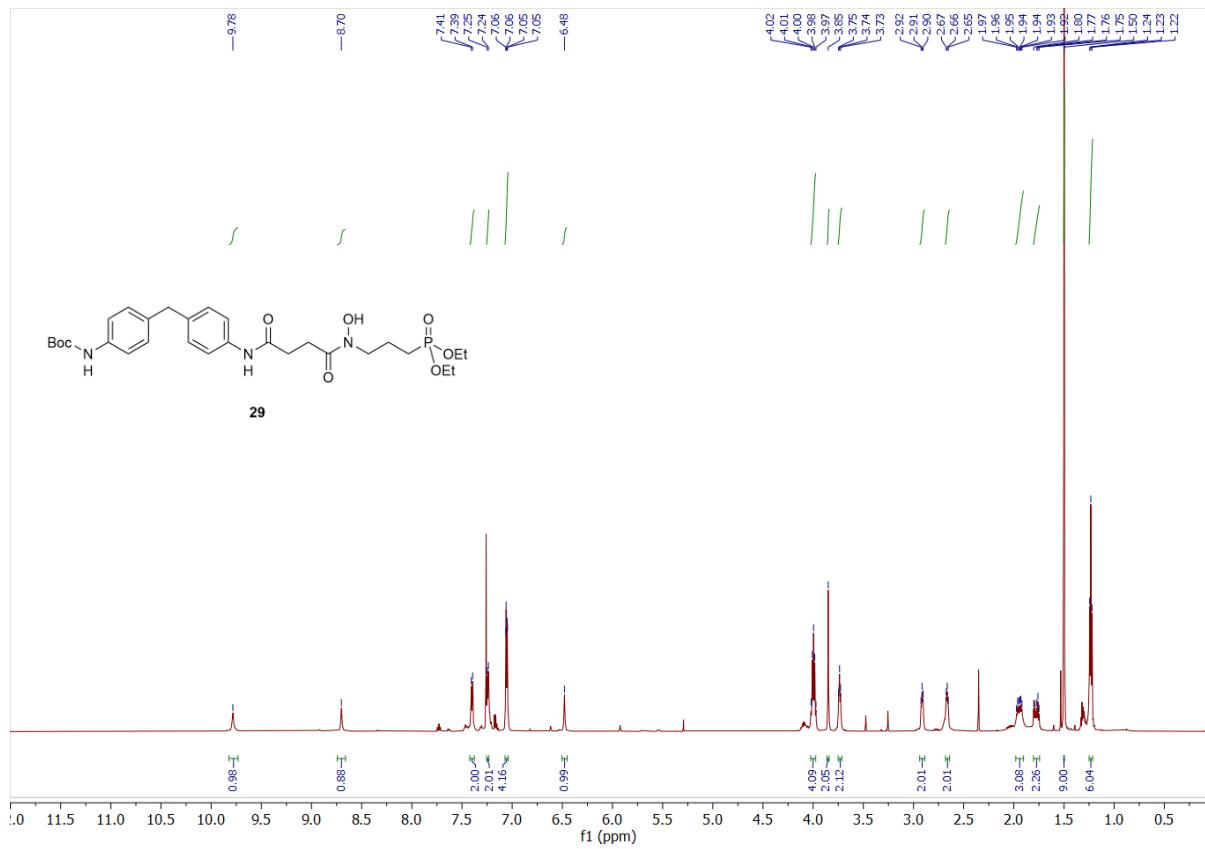
**Figure S45.**  $^{13}\text{C}$ -NMR spectrum of compound 27.



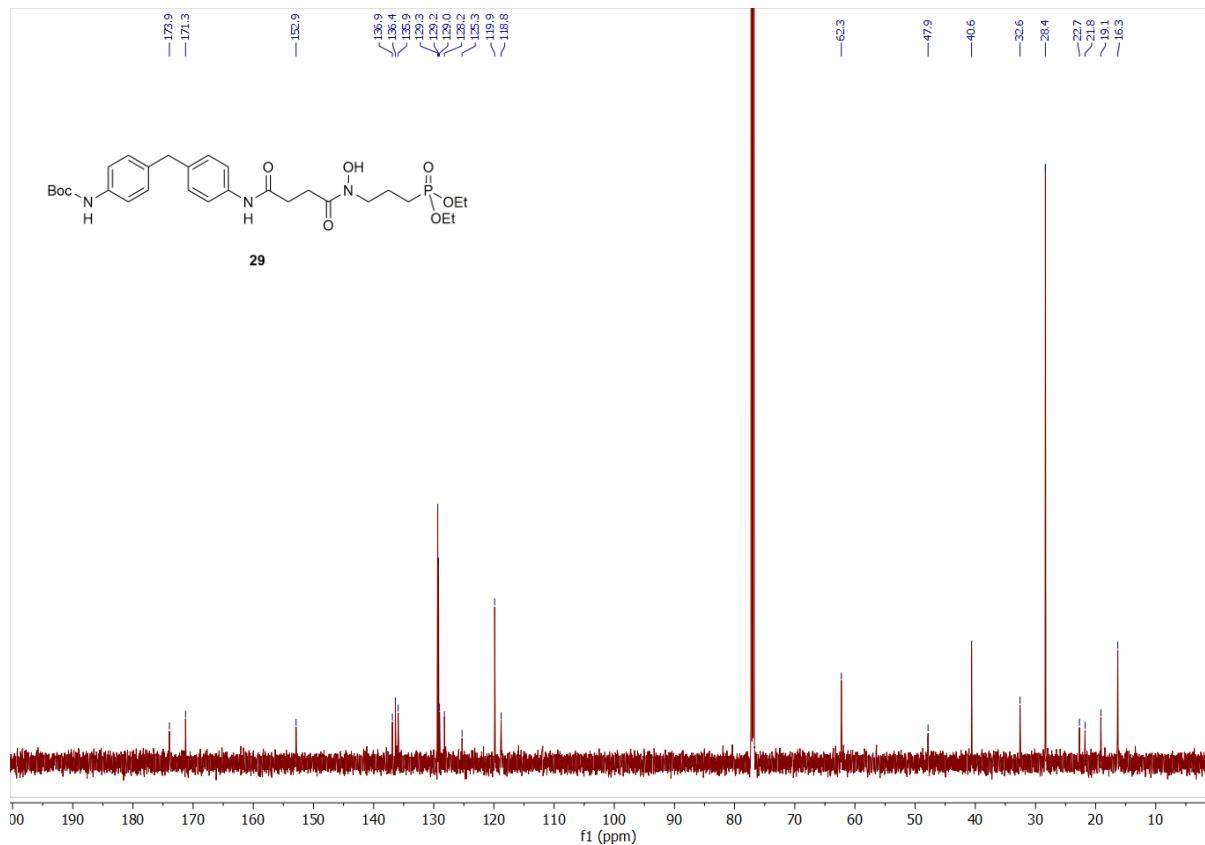
**Figure S46.** <sup>1</sup>H-NMR spectrum of compound 28.



**Figure S47.** <sup>13</sup>C-NMR spectrum of compound 28.

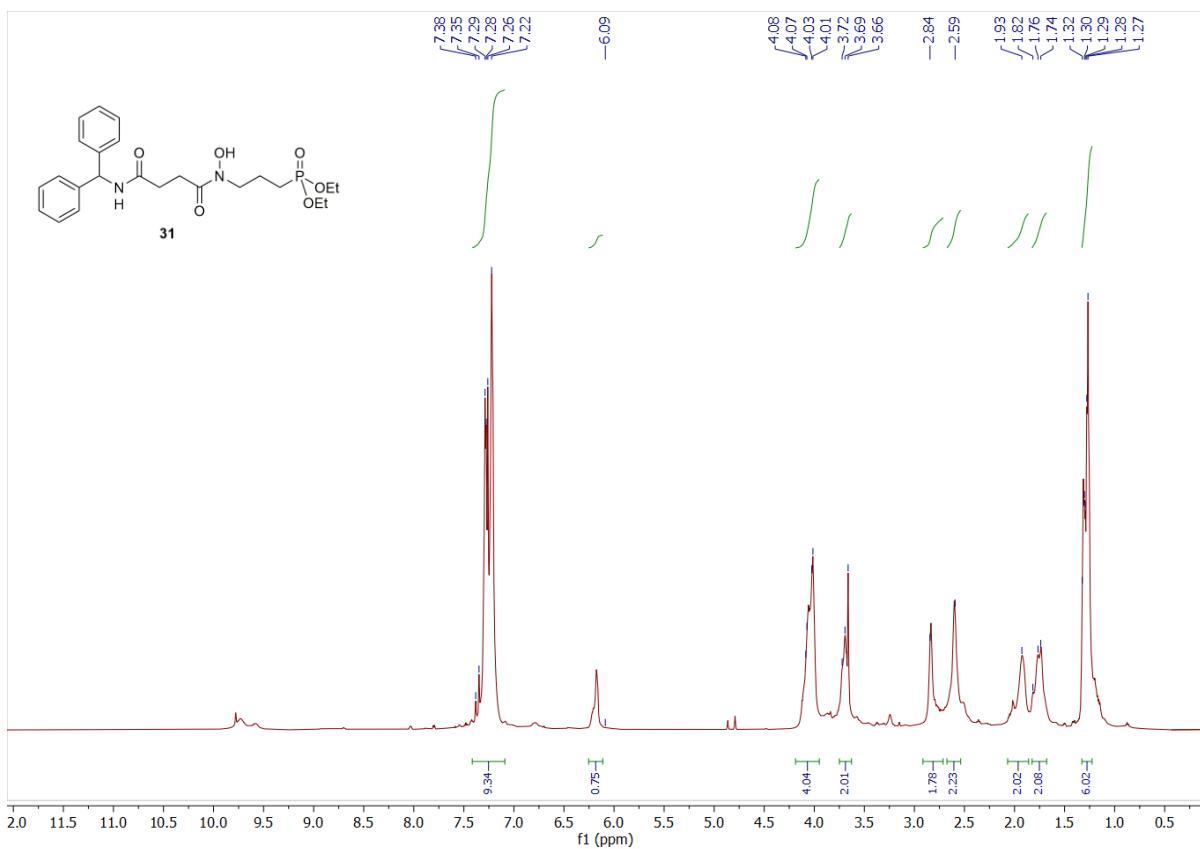


**Figure S48.**  $^1\text{H}$ -NMR spectrum of compound 29.

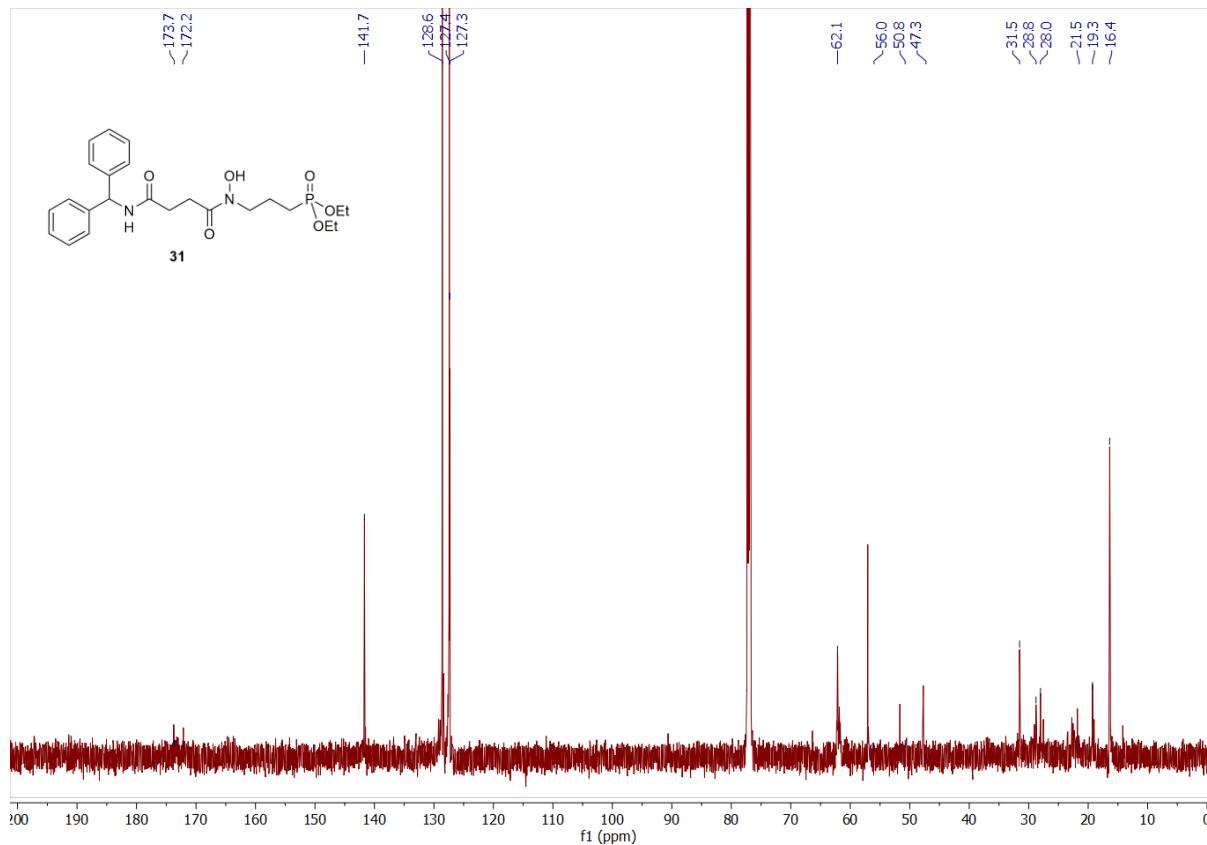


**Figure S49.**  $^{13}\text{C}$ -NMR spectrum of compound 29.

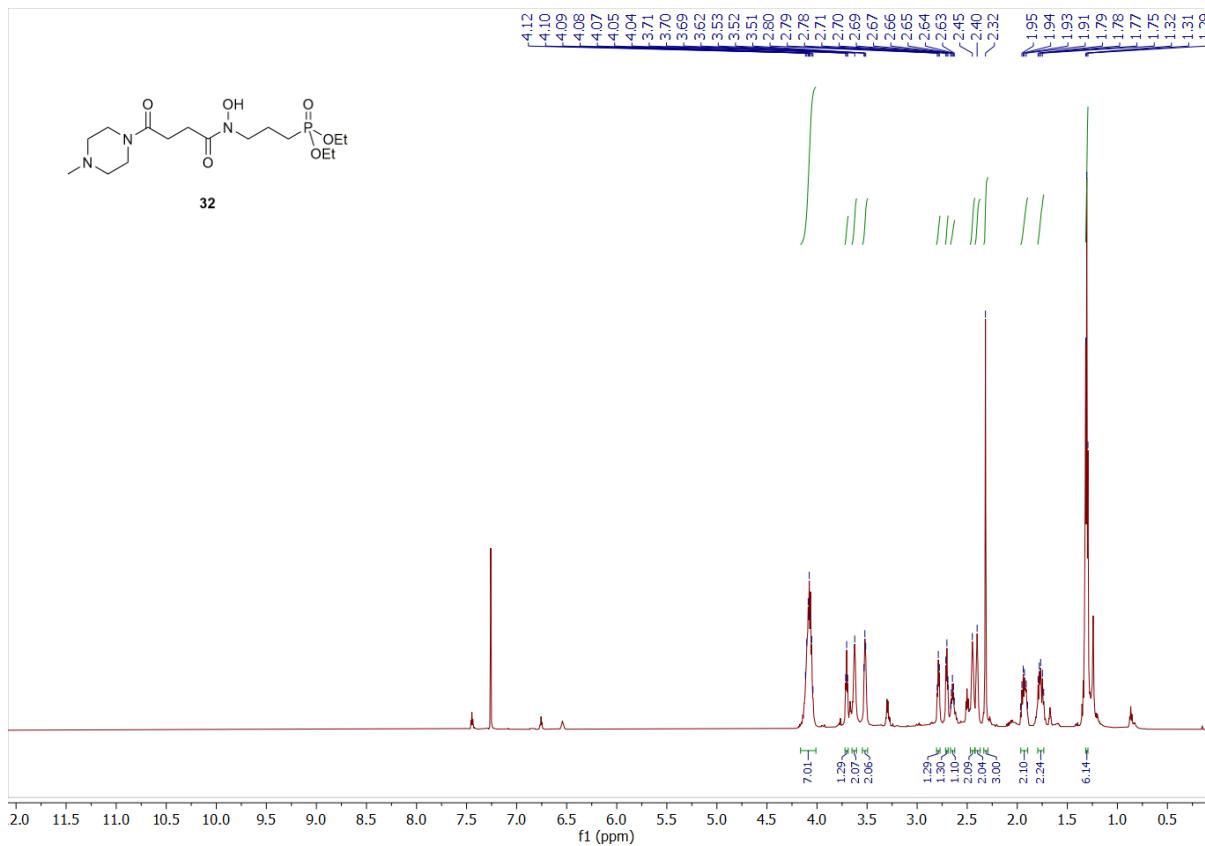




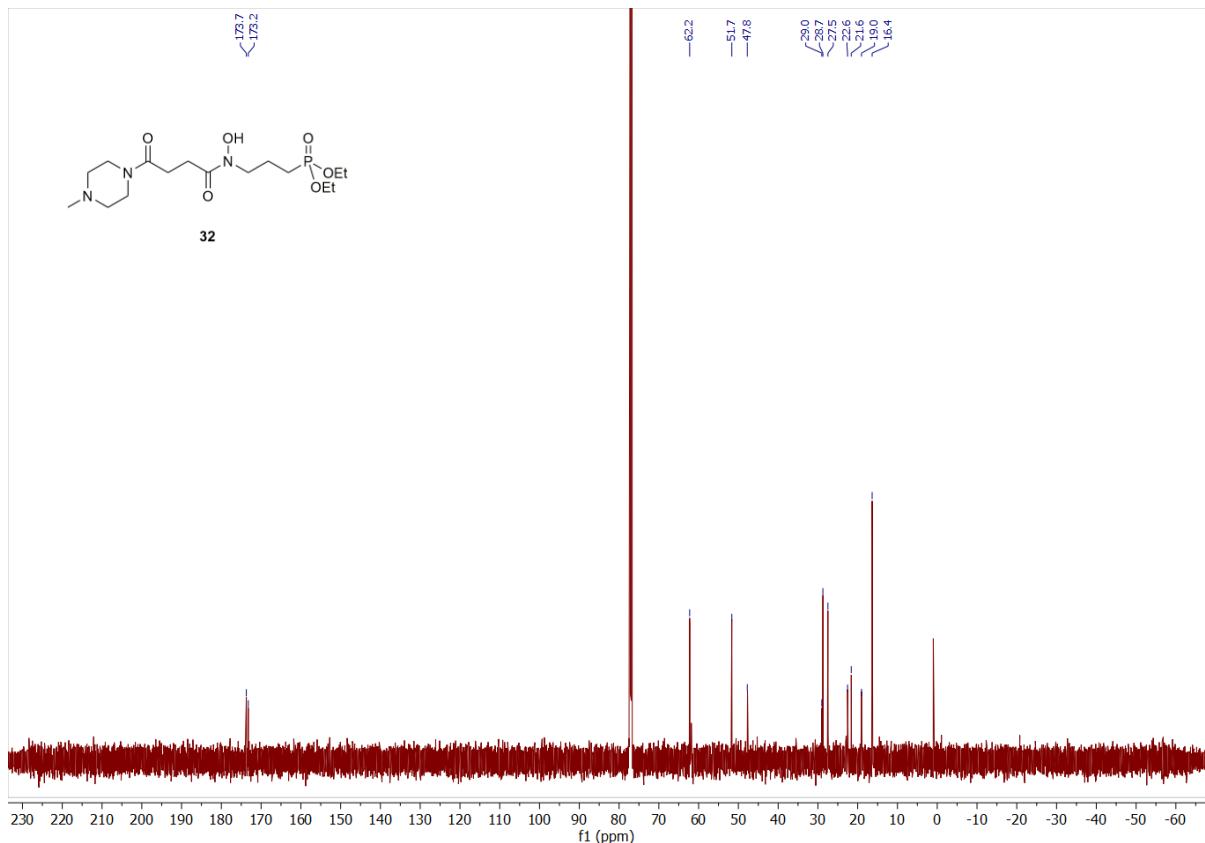
**Figure S52.**  $^1\text{H}$ -NMR spectrum of compound 31.



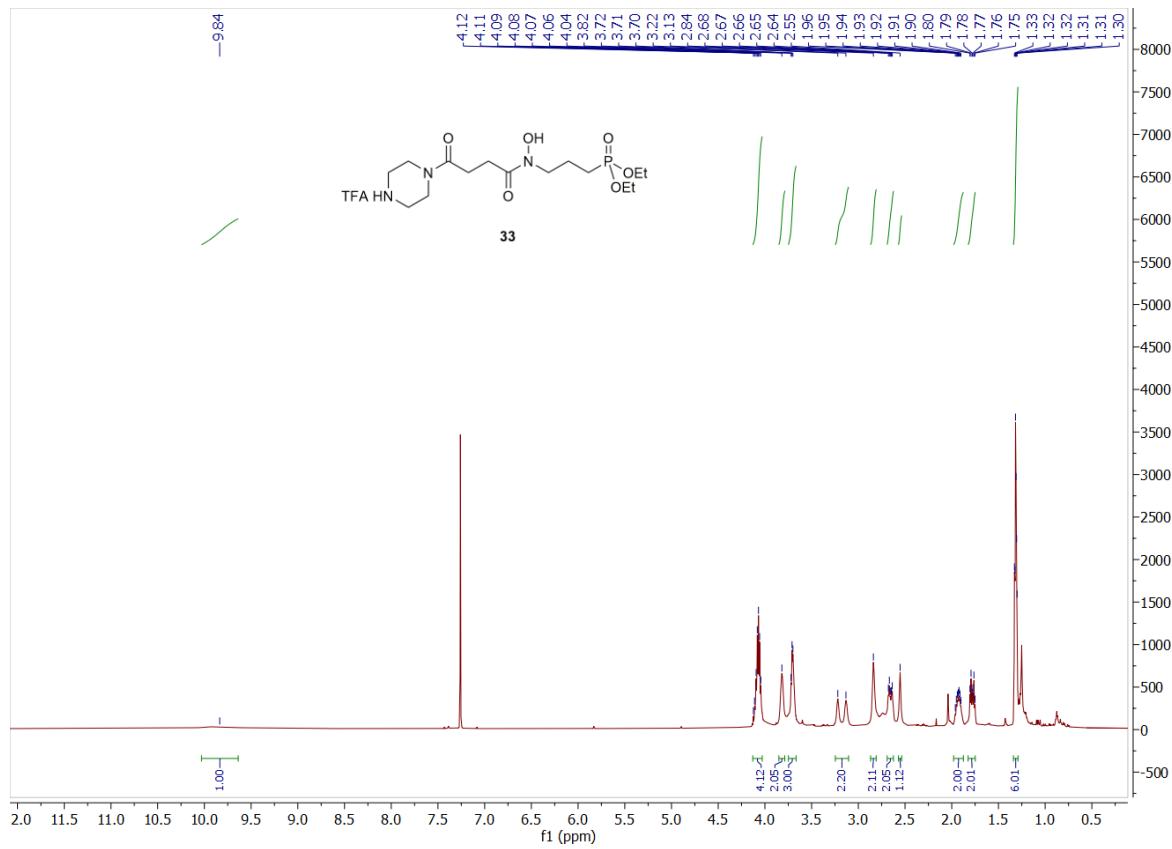
**Figure S53.**  $^{13}\text{C}$ -NMR spectrum of compound 31.



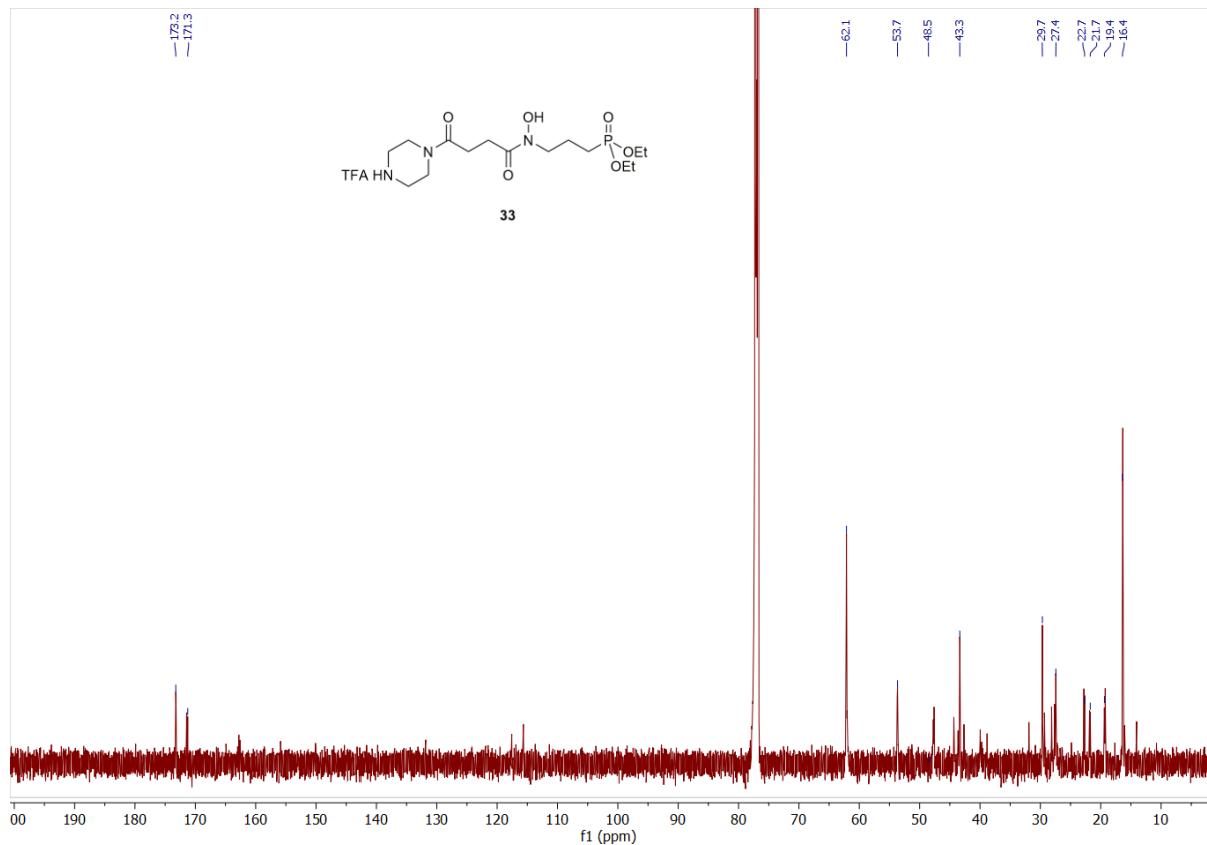
**Figure S54.**  $^{13}\text{C}$ -NMR spectrum of compound 32.



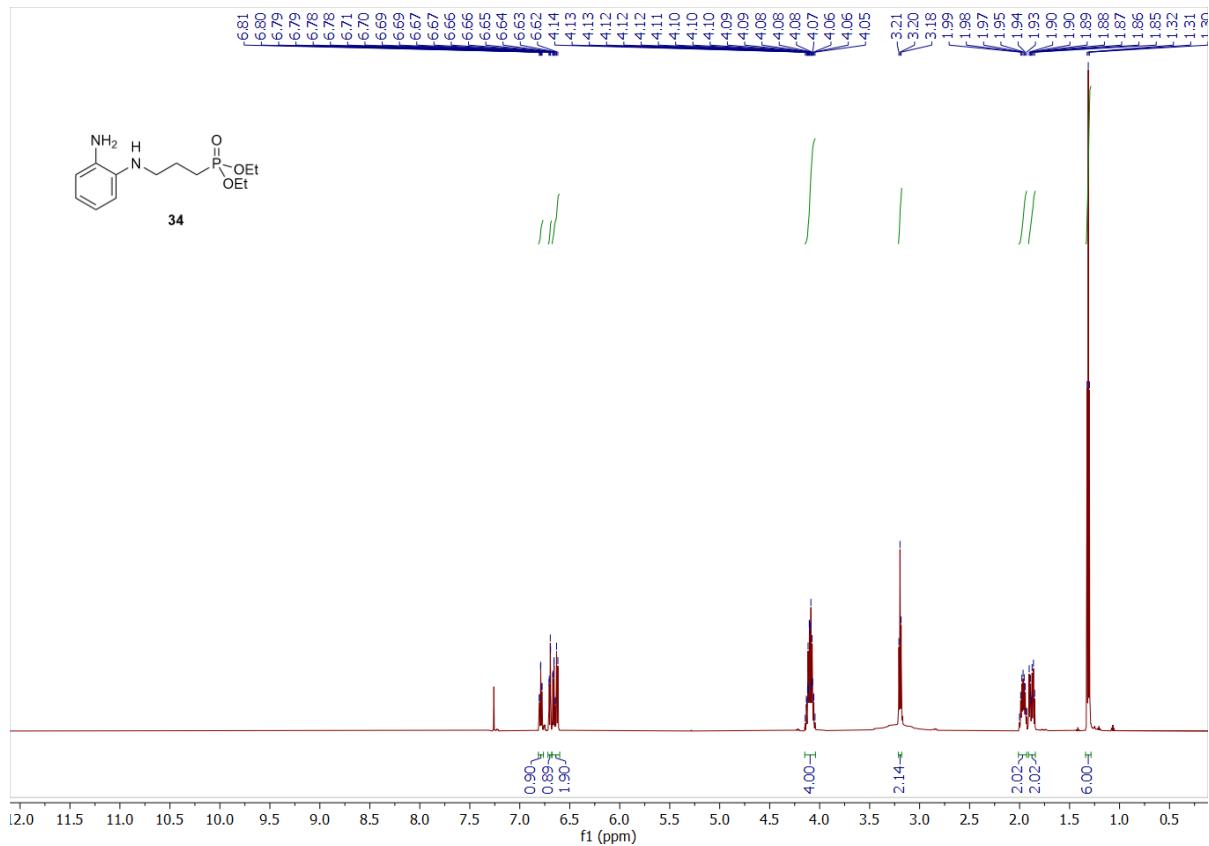
**Figure S55.**  $^{13}\text{C}$ -NMR spectrum of compound 32.



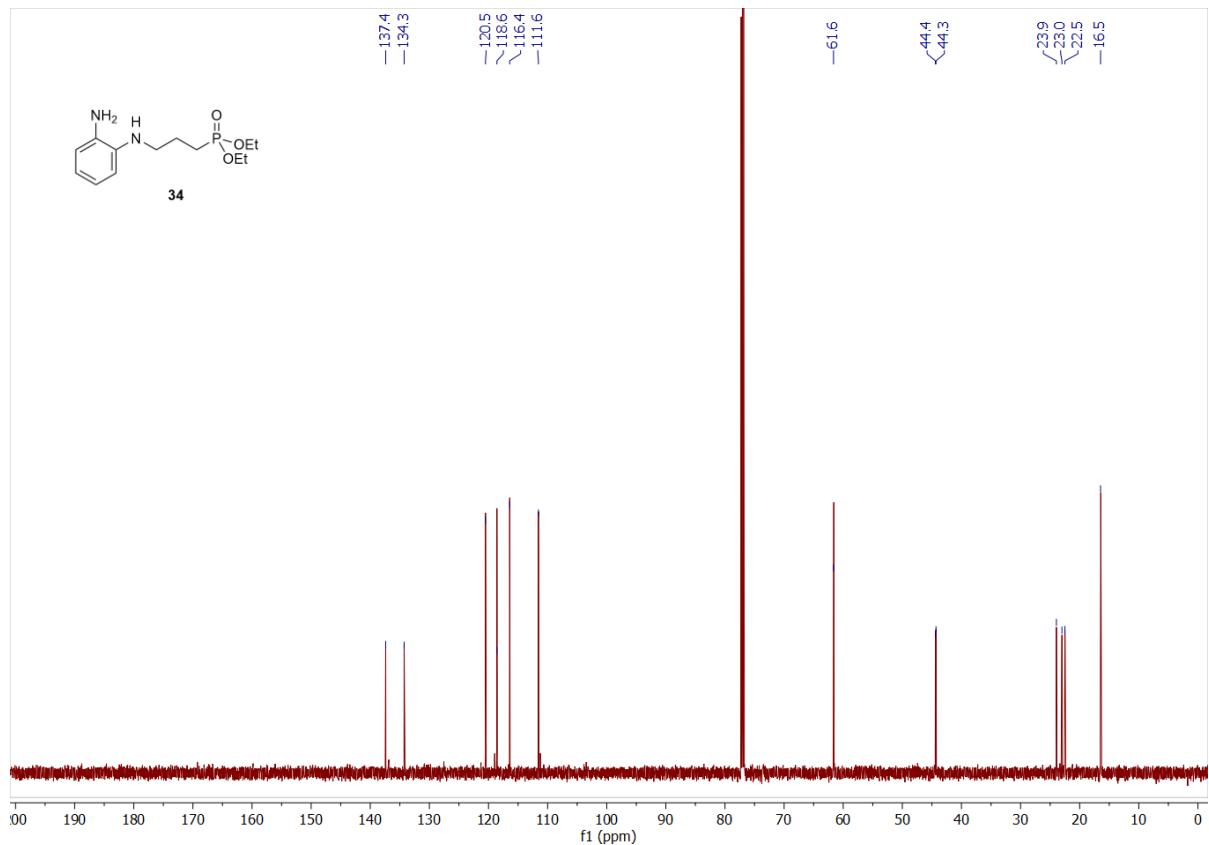
**Figure S56.**  $^1\text{H}$ -NMR spectrum of compound 33.



**Figure S57.**  $^1\text{H}$ -NMR spectrum of compound 33.



**Figure S58.**  $^1\text{H}$ -NMR spectrum of compound 34.



**Figure S59.**  $^{13}\text{C}$ -NMR spectrum of compound 34.

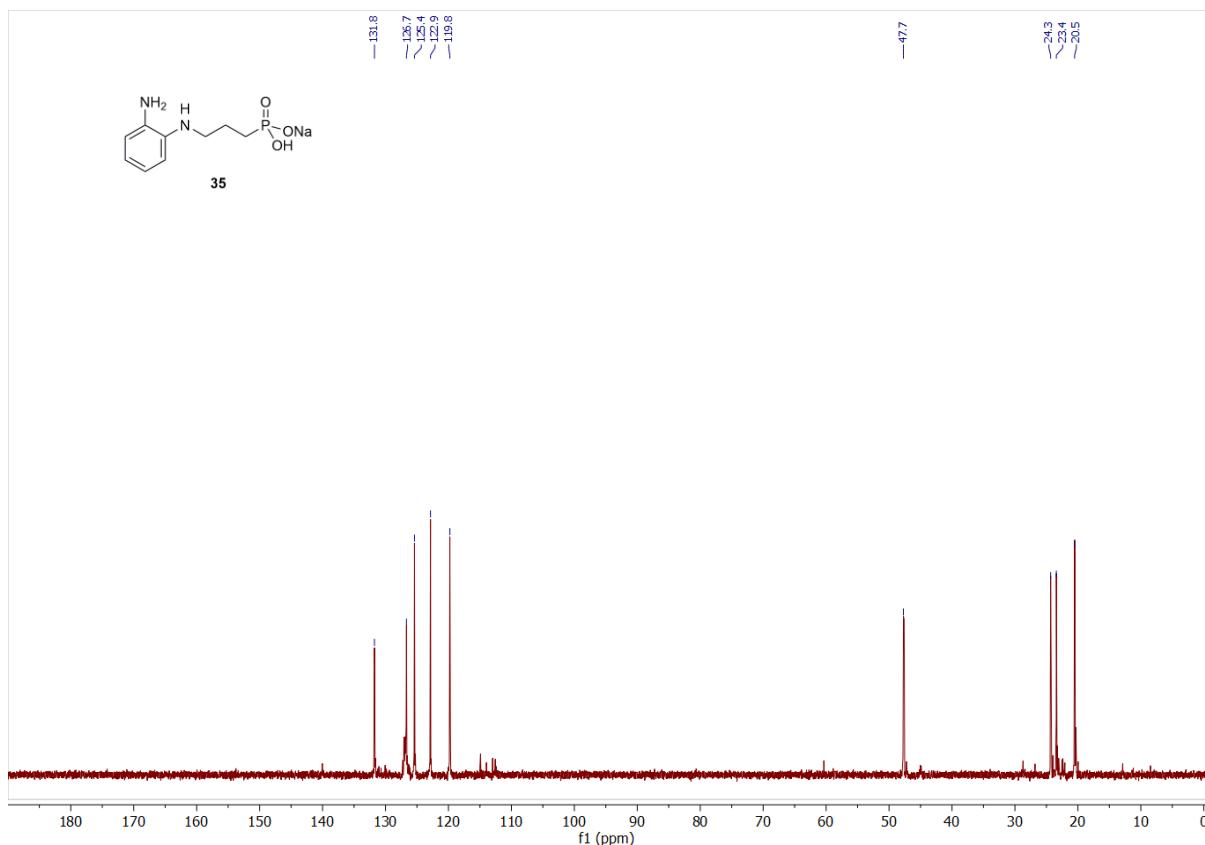
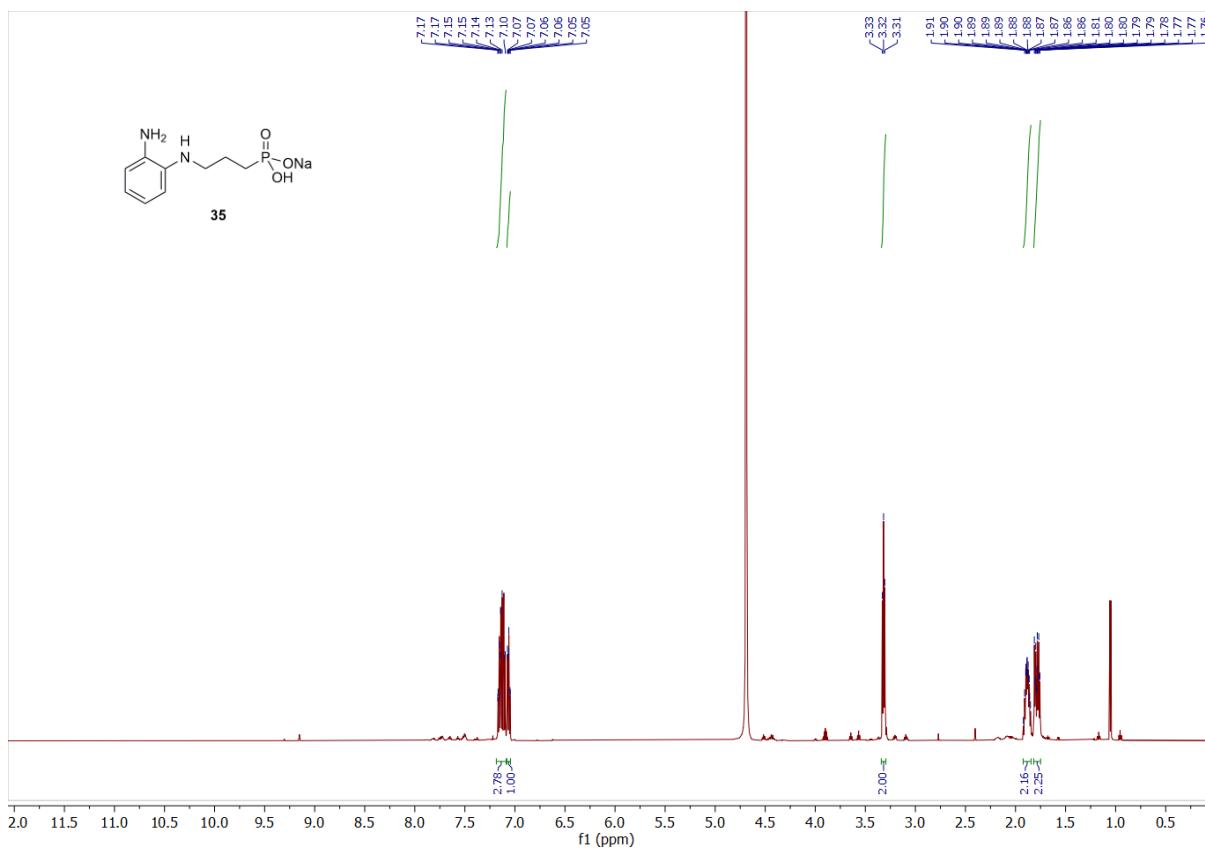


Figure S61.  $^{13}\text{C}$ -NMR spectrum of compound 35.