

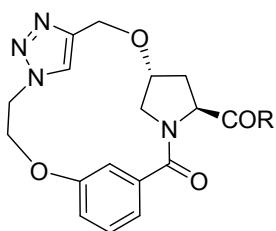
# **Supplementary Materials: Synthetic Strategy and Anti-Tumor Activities of Macrocyclic Scaffolds Based on 4-Hydroxyproline**

**Guorui Cao, Kun Yang, Yue Li, Longjiang Huang and Dawei Teng**

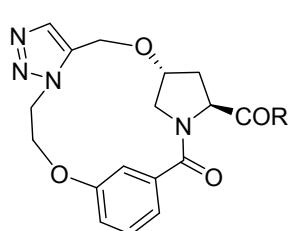
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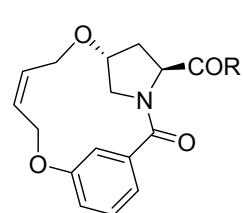
## General



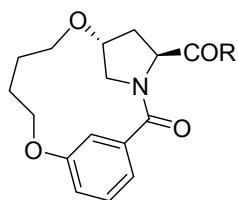
- 6a** R = OCH<sub>3</sub>  
**22** R = OH  
**23** R = NH<sub>2</sub>  
**24** R = NHPH  
**25** R = NHCH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>



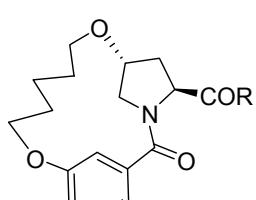
- 6b** R = OCH<sub>3</sub>  
**26** R = OH  
**27** R = NH<sub>2</sub>  
**28** R = NHPH  
**29** R = NHCH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>



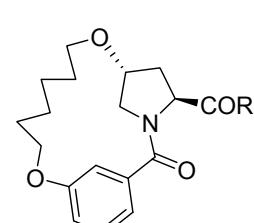
- 9** R = OCH<sub>3</sub>  
**30** R = OH  
**31** R = NH<sub>2</sub>  
**32** R = NHPH  
**33** R = NHCH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>



- 10a** R = OCH<sub>3</sub>  
**34** R = OH  
**35** R = NH<sub>2</sub>  
**36** R = NHPH  
**37** R = NHCH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>



- 10b** R = OCH<sub>3</sub>  
**38** R = OH  
**39** R = NH<sub>2</sub>  
**40** R = NHPH  
**41** R = NHCH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>



- 10c** R = OCH<sub>3</sub>  
**42** R = OH  
**43** R = NH<sub>2</sub>  
**44** R = NHPH  
**45** R = NHCH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>

**Figure S1.** Target macrocycles.

### Spectra of Macrocycle 6a–b

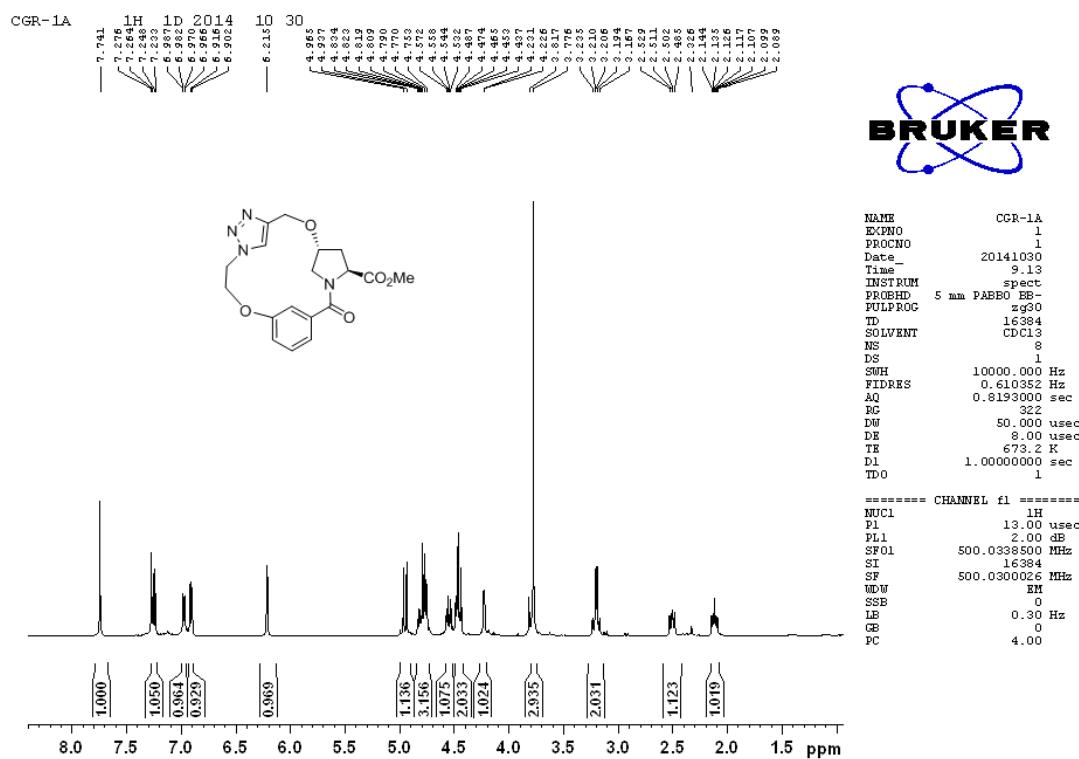


Figure S2. <sup>1</sup>H-NMR Spectrum of 6a.

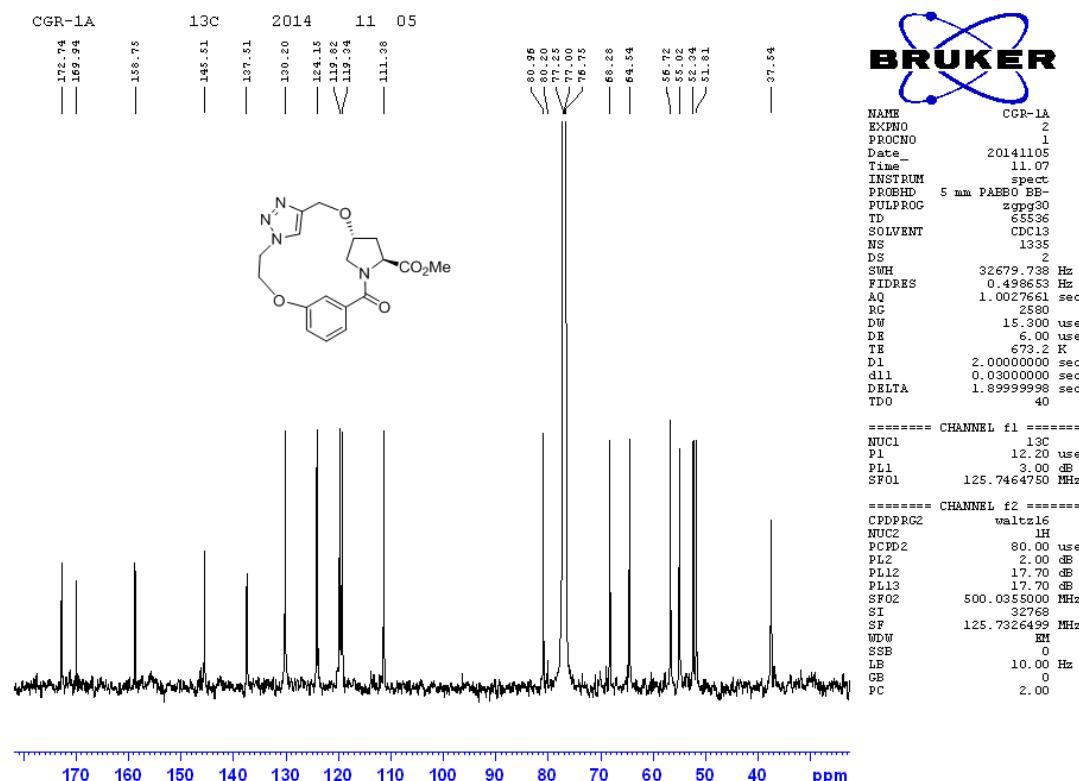
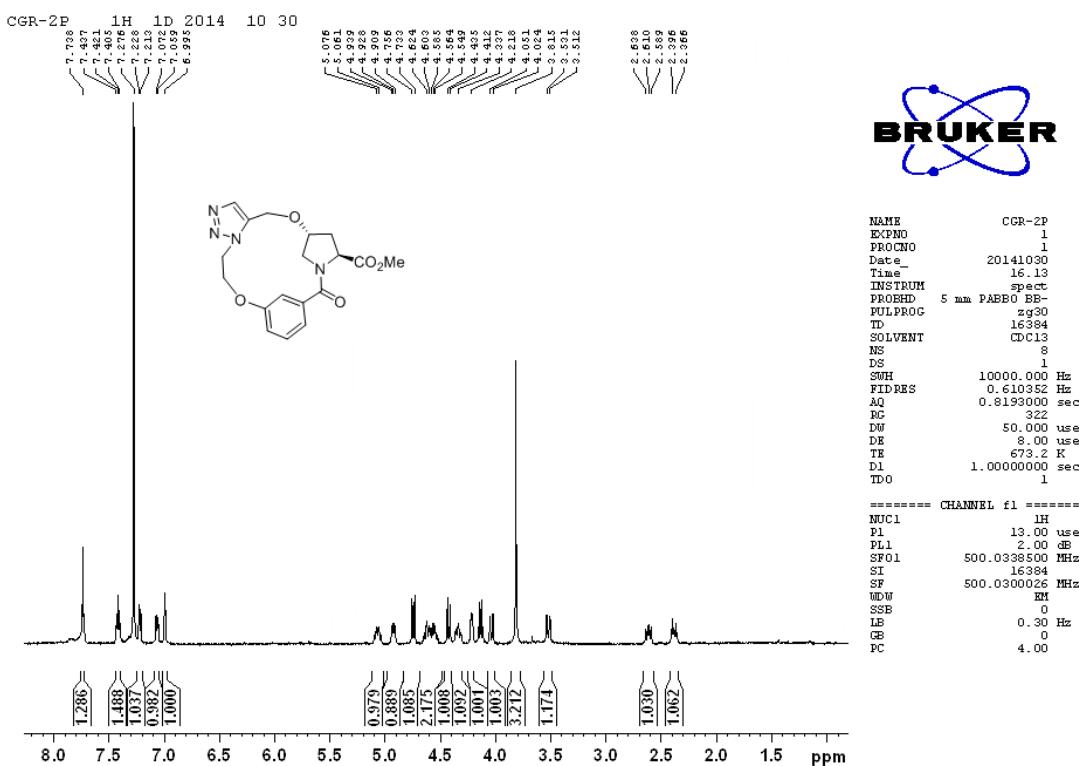
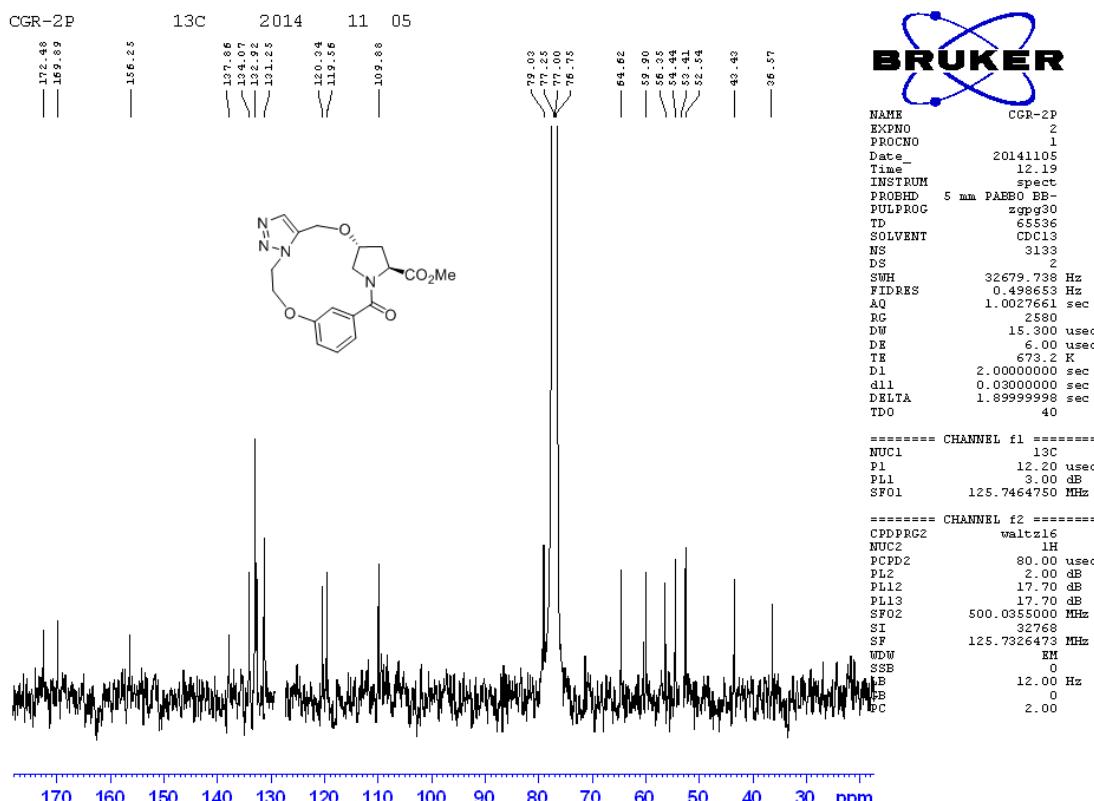


Figure S3. <sup>13</sup>C-NMR Spectrum of 6a.



**Figure S4.**  $^1\text{H}$ -NMR Spectrum of **6b**.



**Figure S5.**  $^{13}\text{C}$ -NMR Spectrum of **6b**.

### Spectra of macrocycle 9

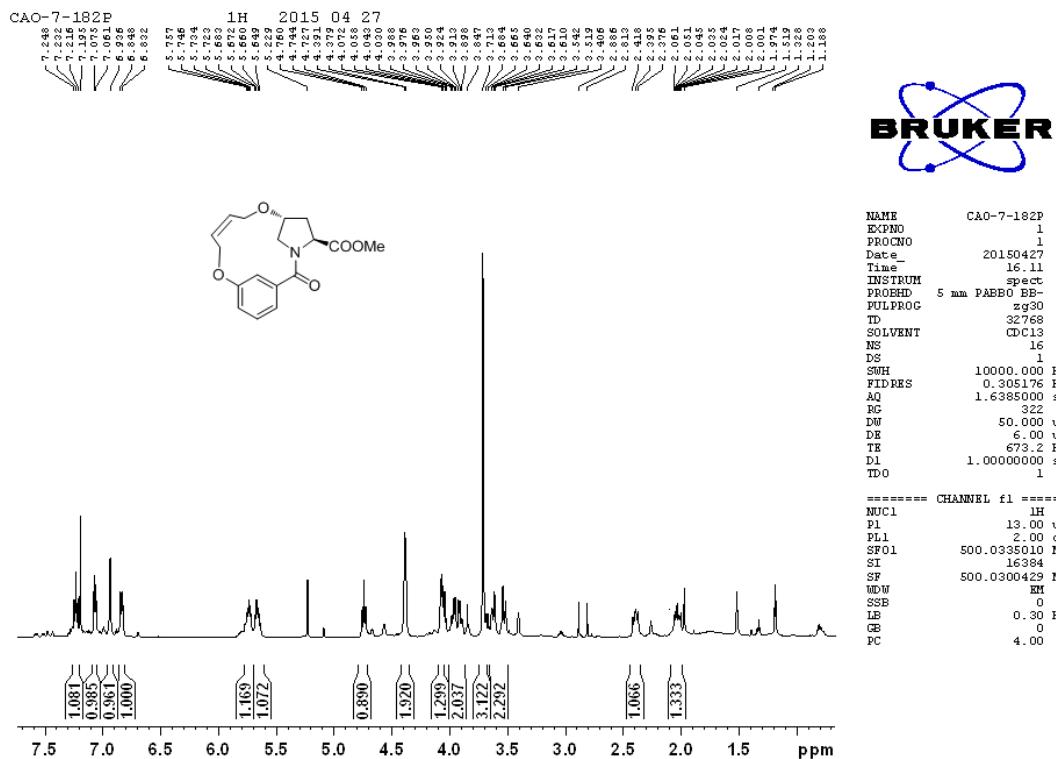


Figure S6. <sup>1</sup>H-NMR Spectrum of 9.

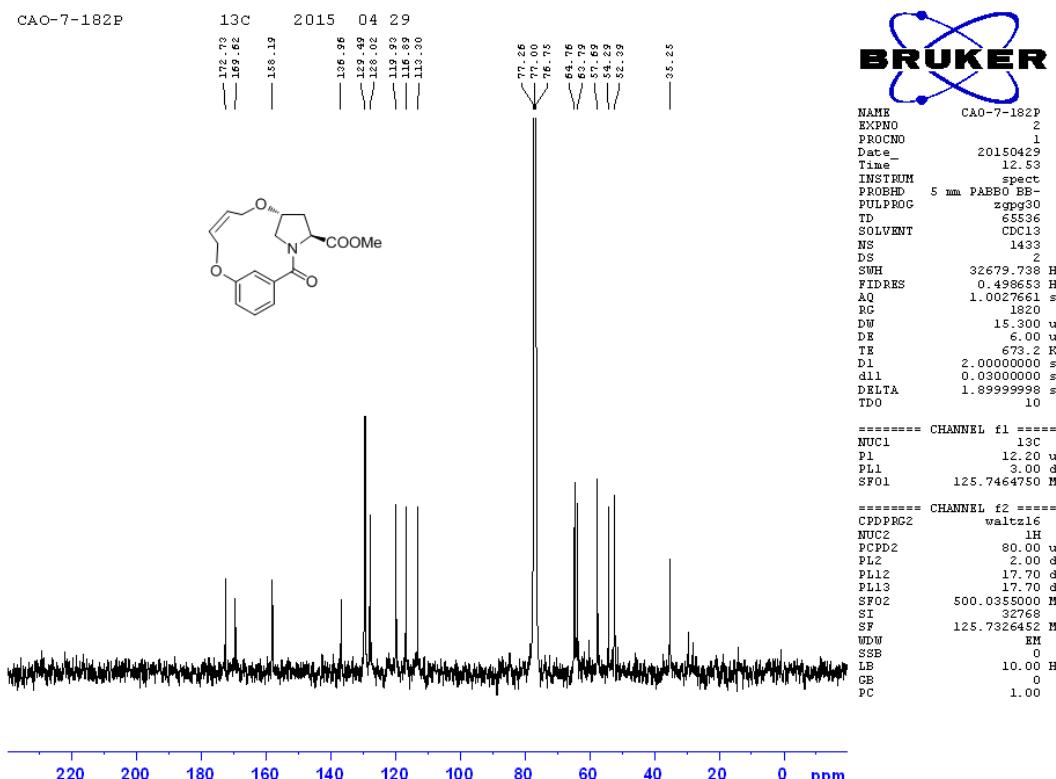


Figure S7. <sup>13</sup>C-NMR Spectrum of 9.

### Spectra of macrocycle 10a–c

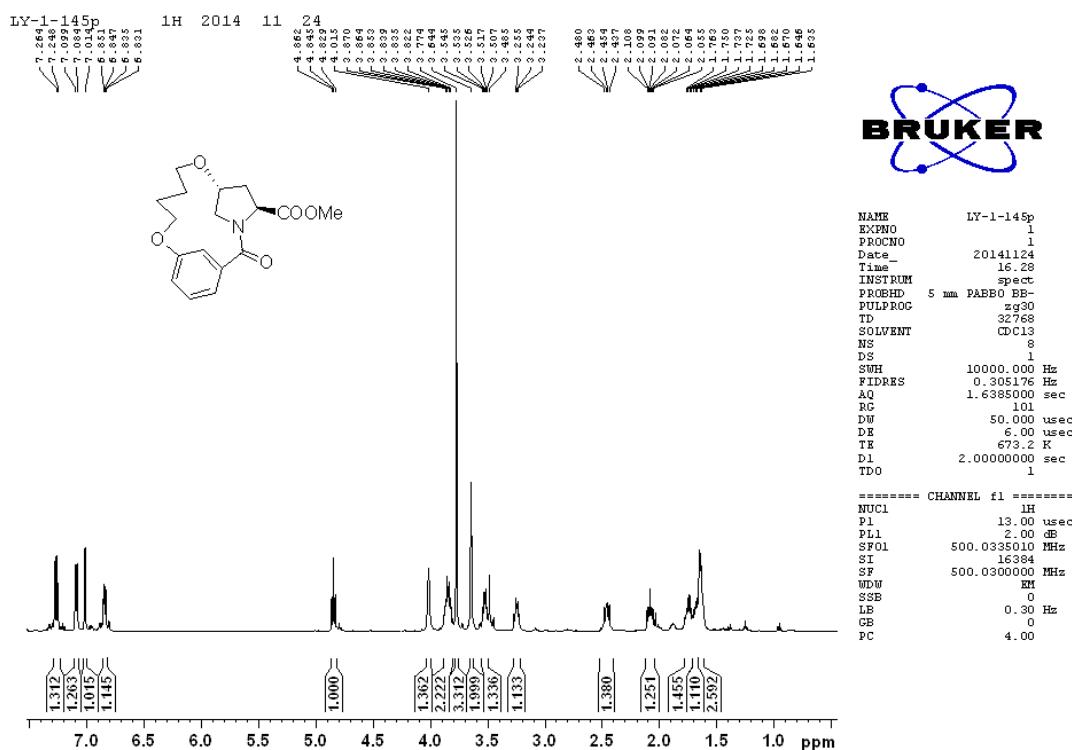


Figure S8. <sup>1</sup>H-NMR Spectrum of 10a.

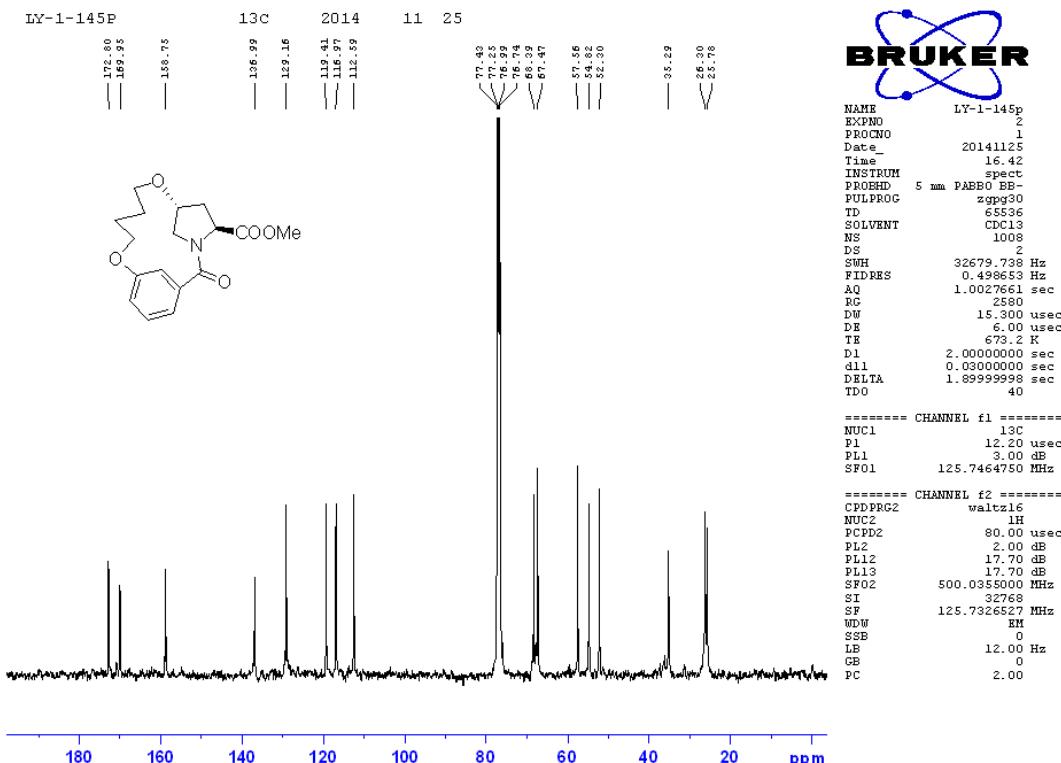
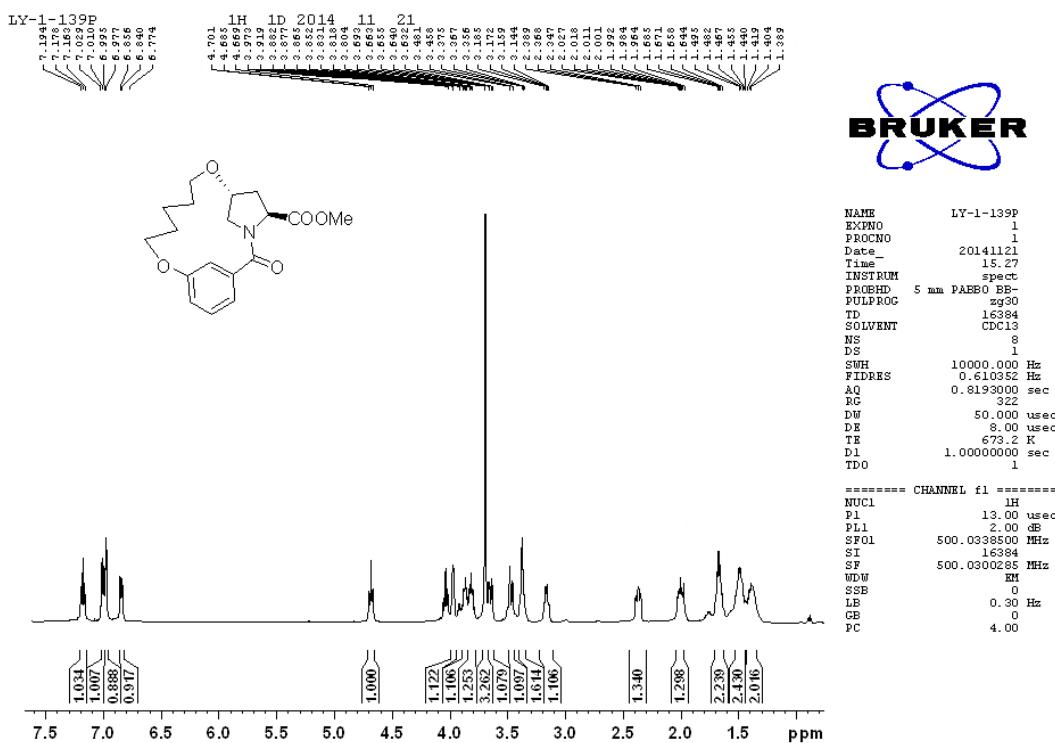
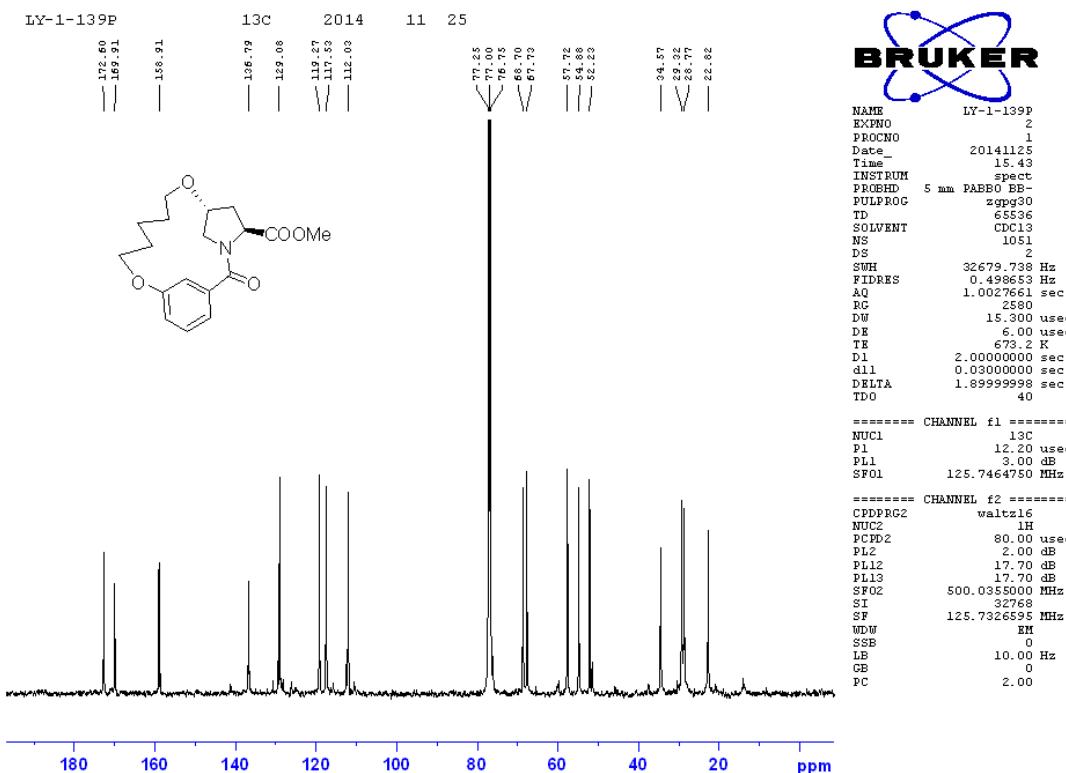


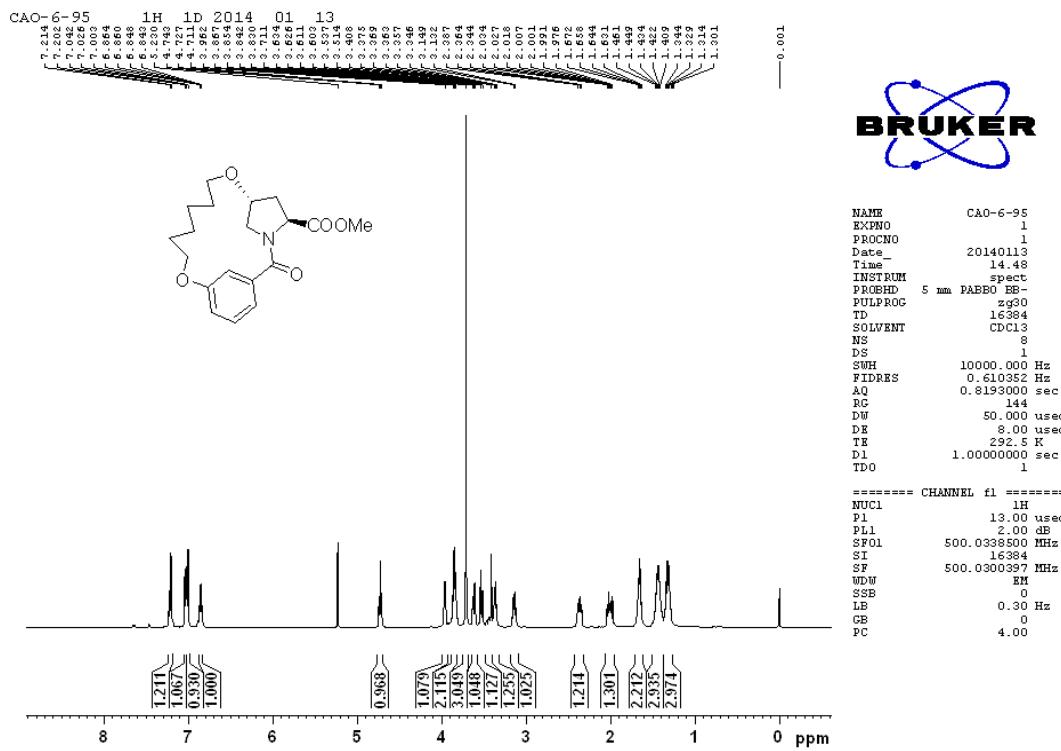
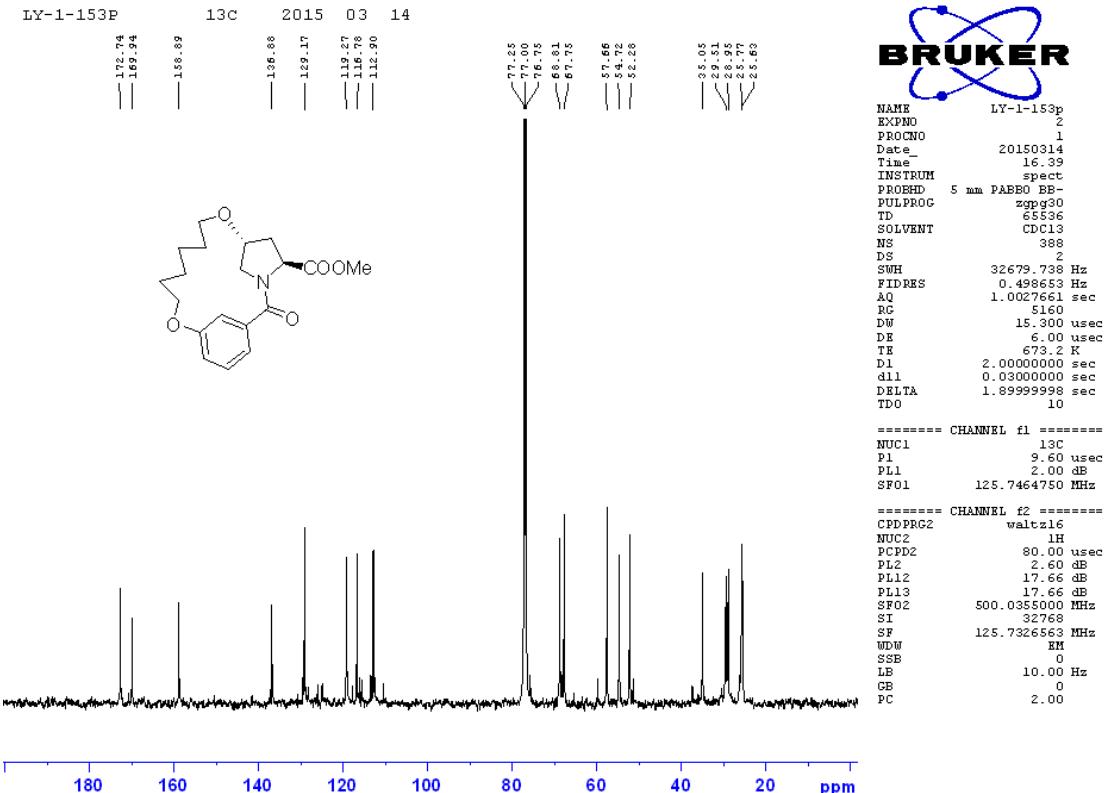
Figure S9. <sup>13</sup>C-NMR Spectrum of 10a.



**Figure S10.**  $^1\text{H}$ -NMR Spectrum of **10b**.



**Figure S11.**  $^{13}\text{C}$ -NMR Spectrum of **10b**.

Figure S12.  $^1\text{H}$ -NMR Spectrum of **10c**.Figure S13.  $^{13}\text{C}$ -NMR Spectrum of **10c**.

### Spectra of macrocycle 22–45

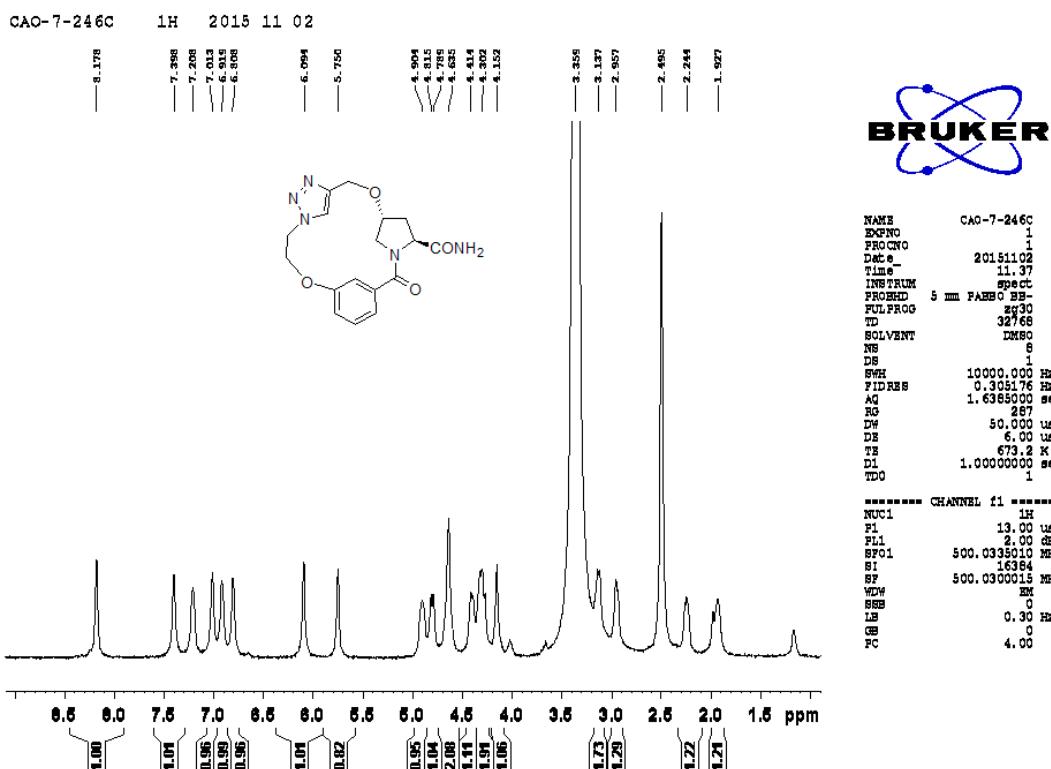
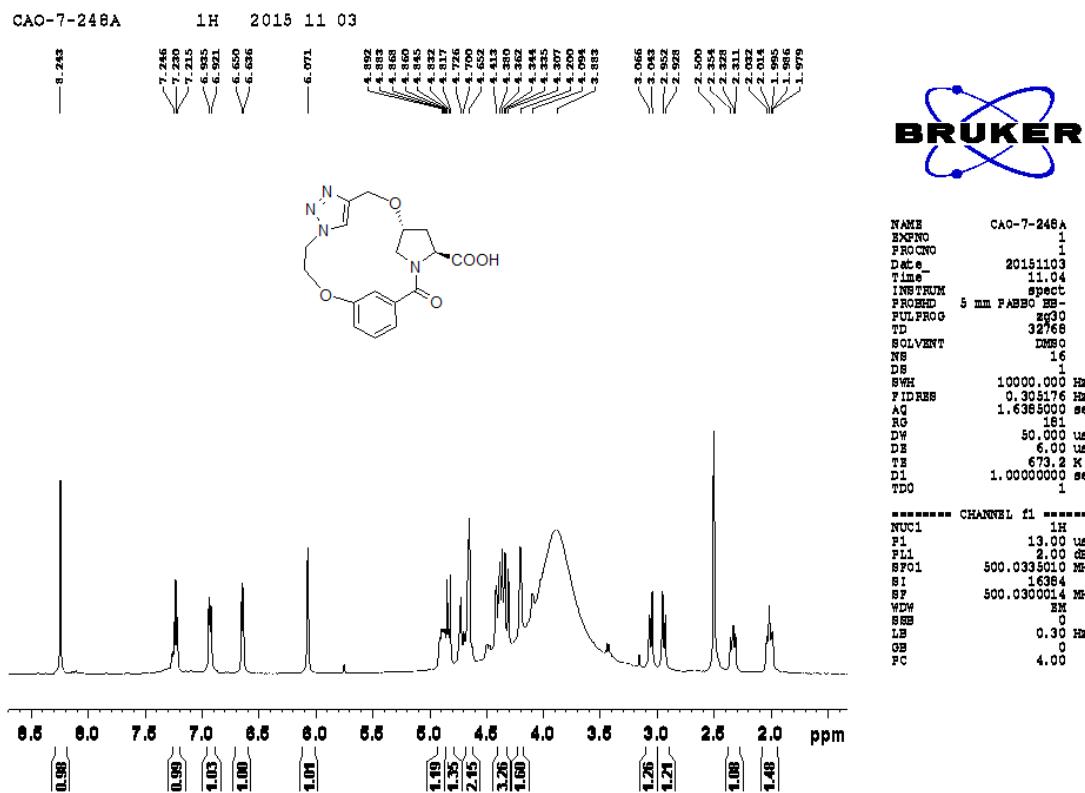
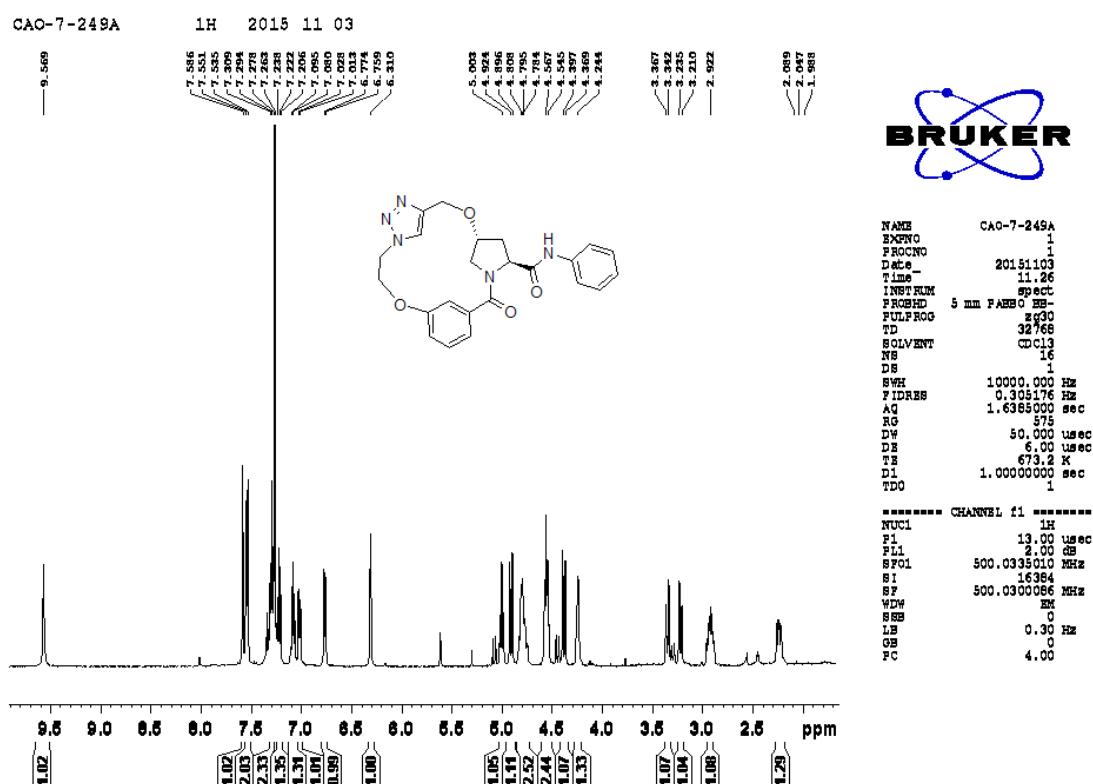
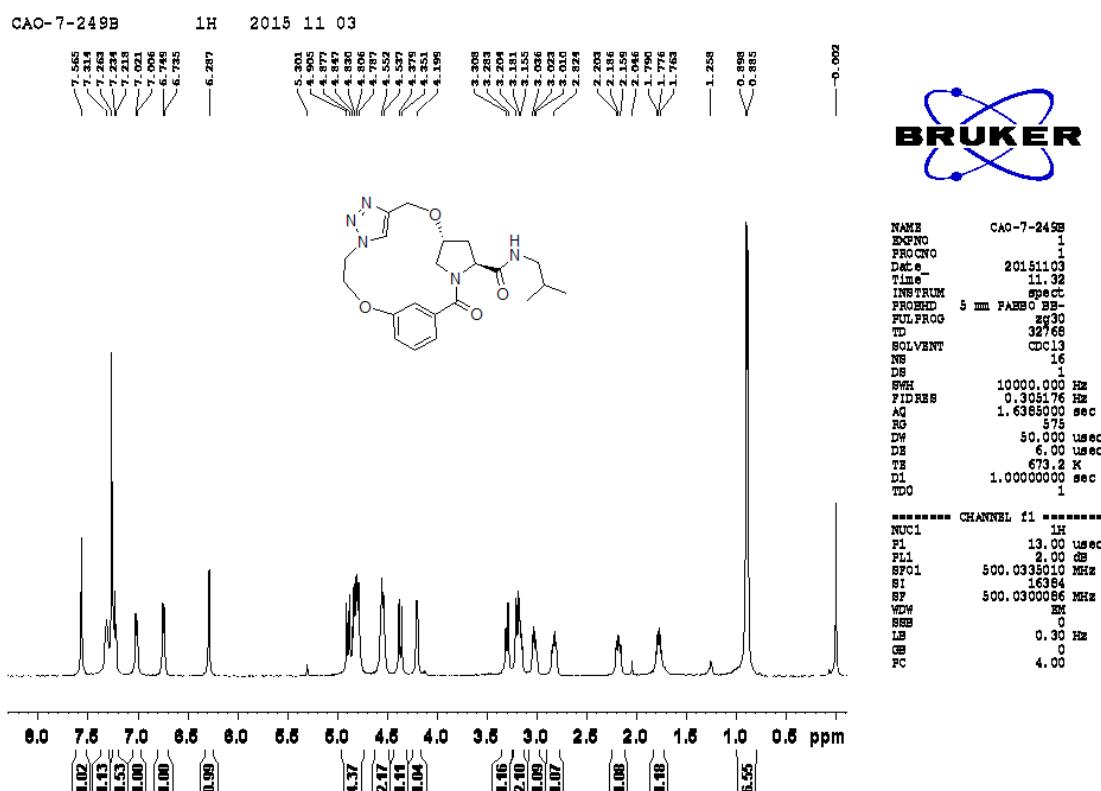
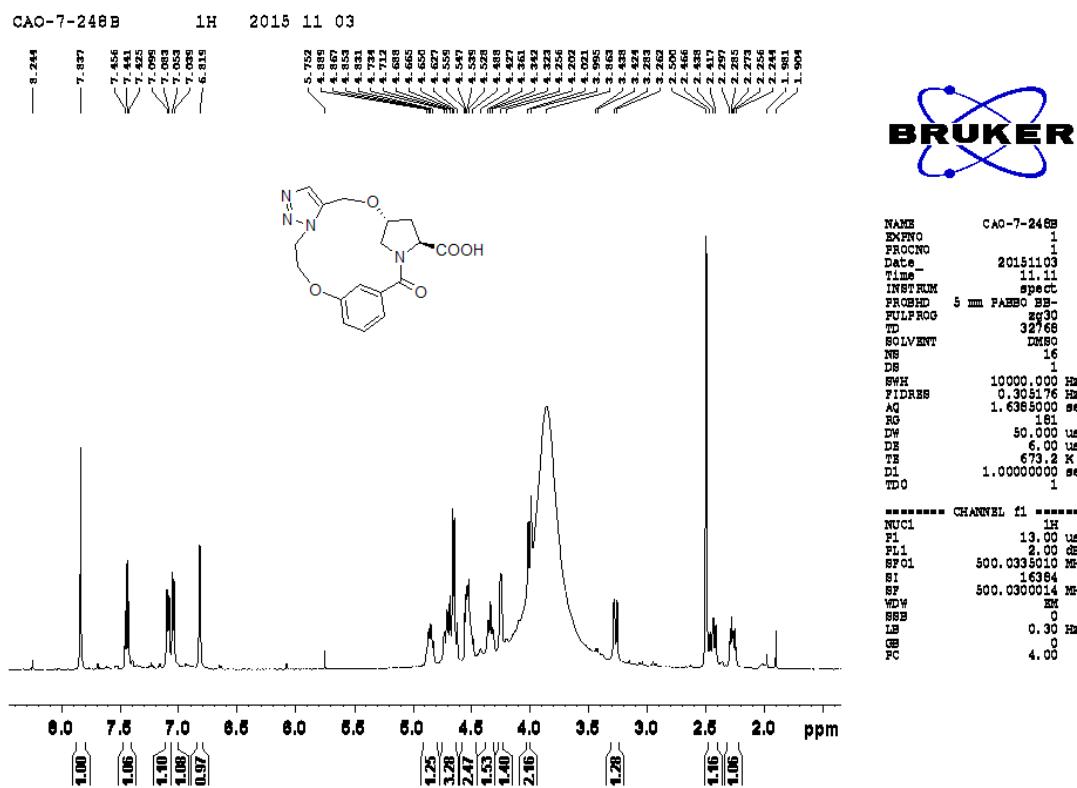
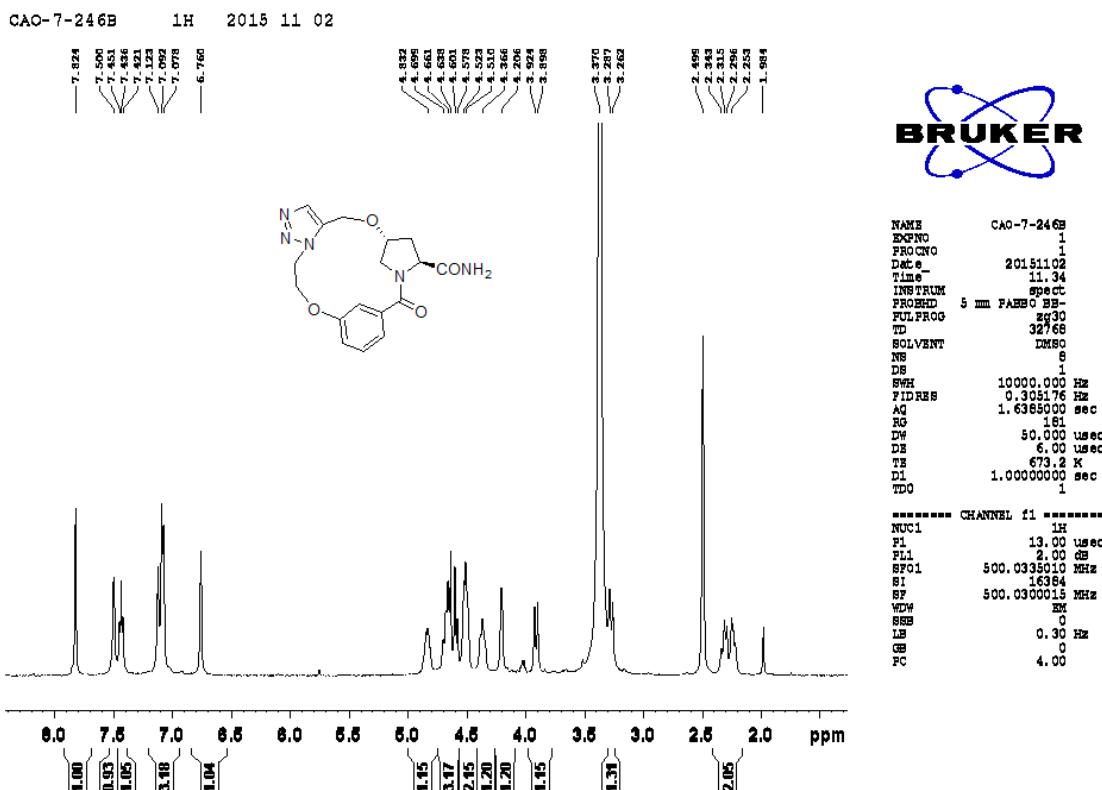


Figure S15.  $^1\text{H}$ -NMR Spectrum of 23.

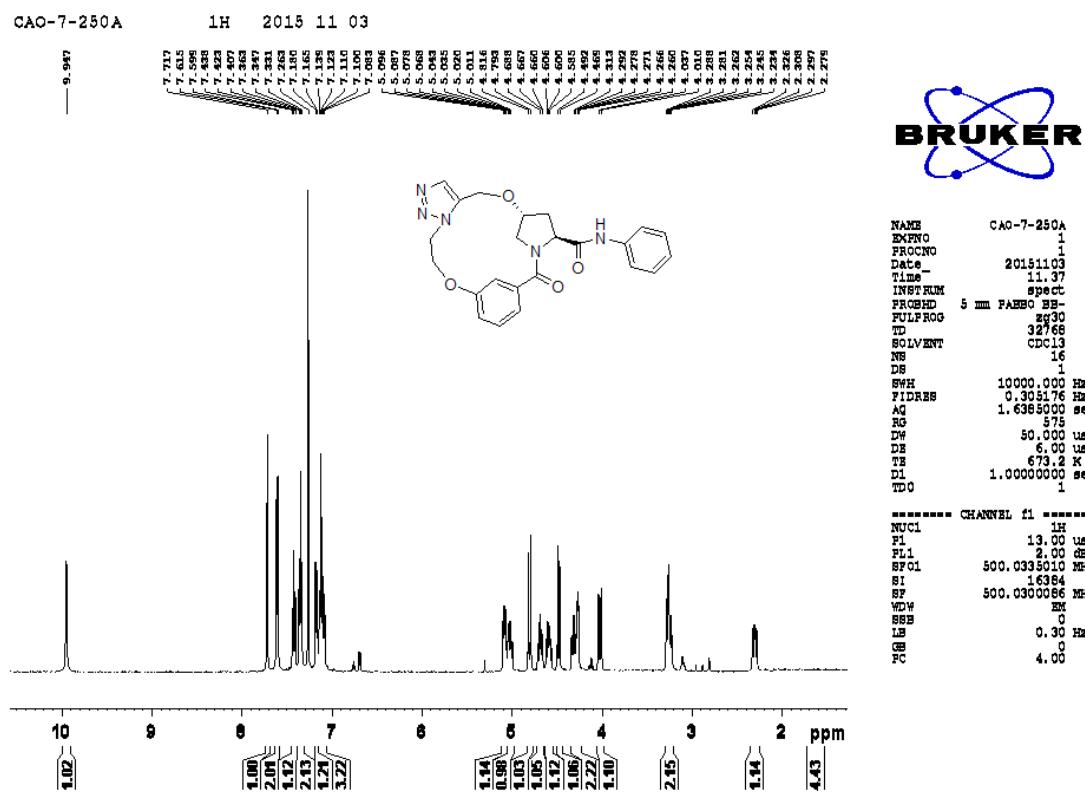
Figure S16. <sup>1</sup>H-NMR Spectrum of 24.Figure S17. <sup>1</sup>H-NMR Spectrum of 25.



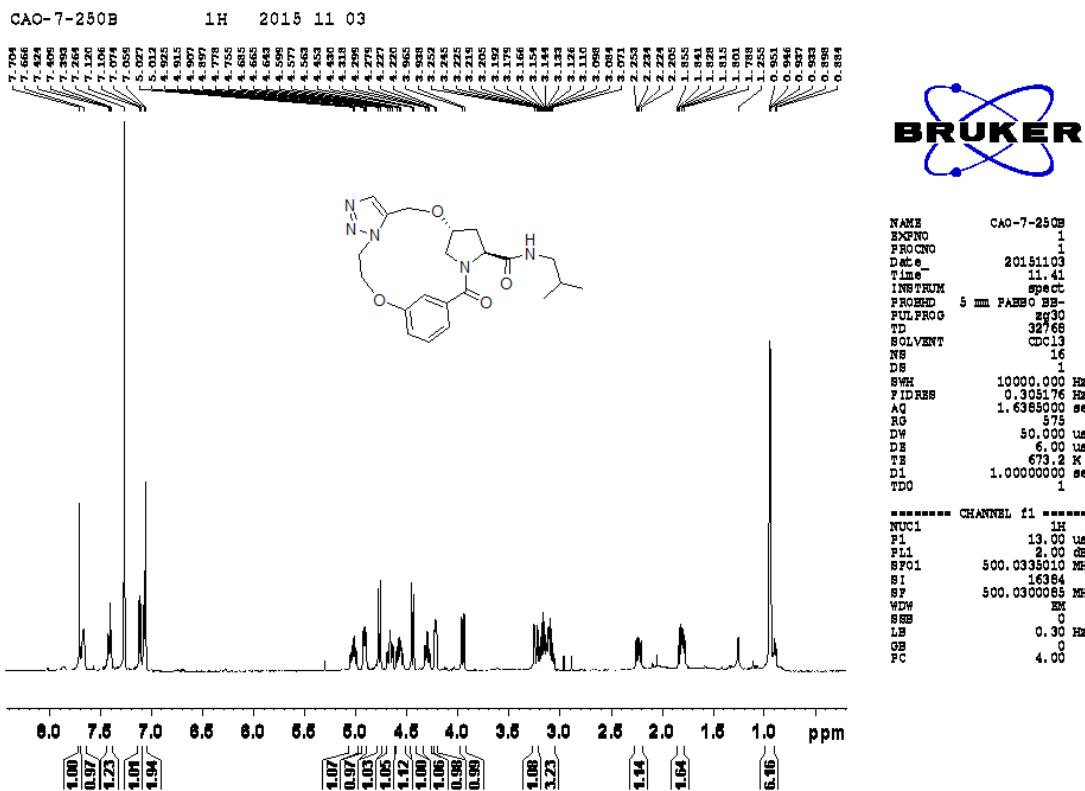
**Figure S18.**  $^1\text{H}$ -NMR Spectrum of **26**.



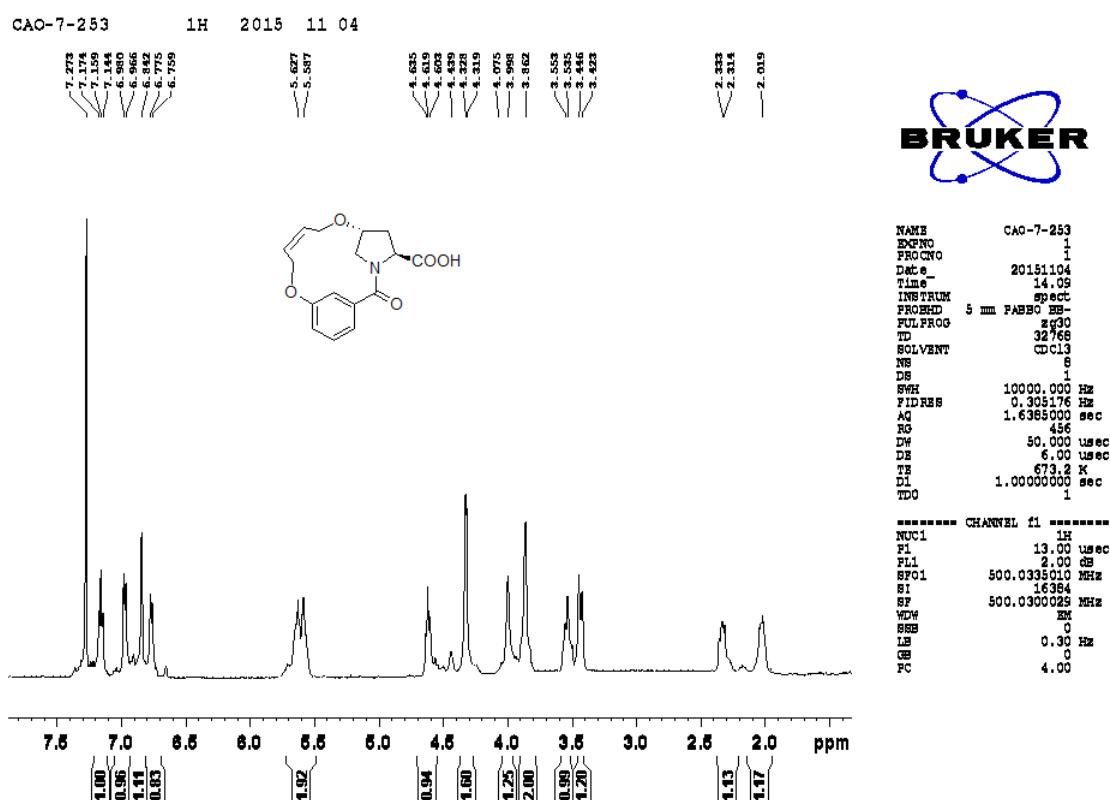
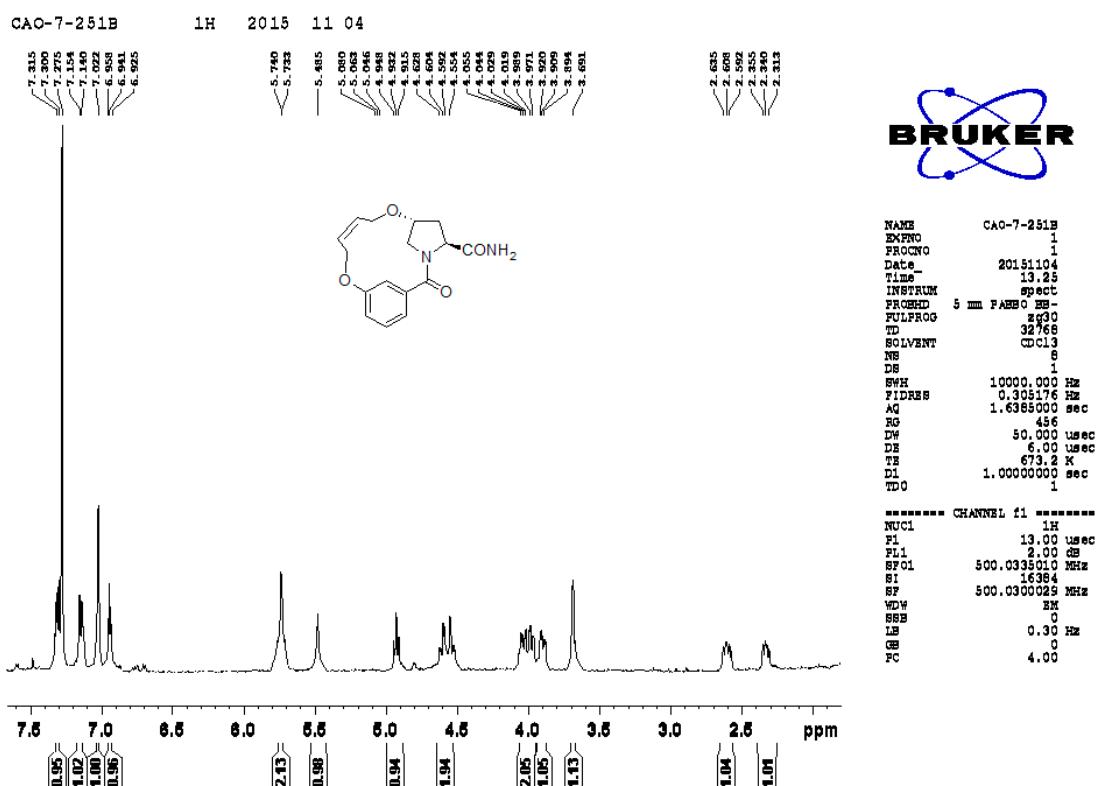
**Figure S19.**  $^1\text{H}$ -NMR Spectrum of **27**.

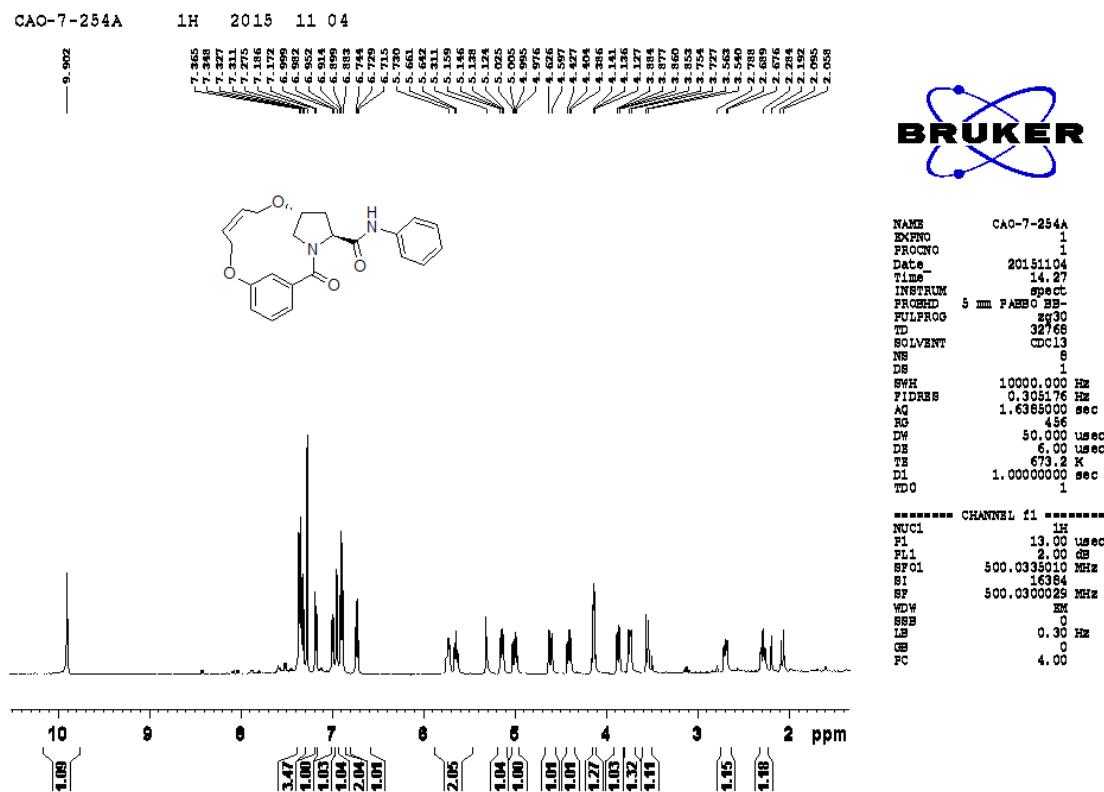


**Figure S20.**  $^1\text{H}$ -NMR Spectrum of **28**.

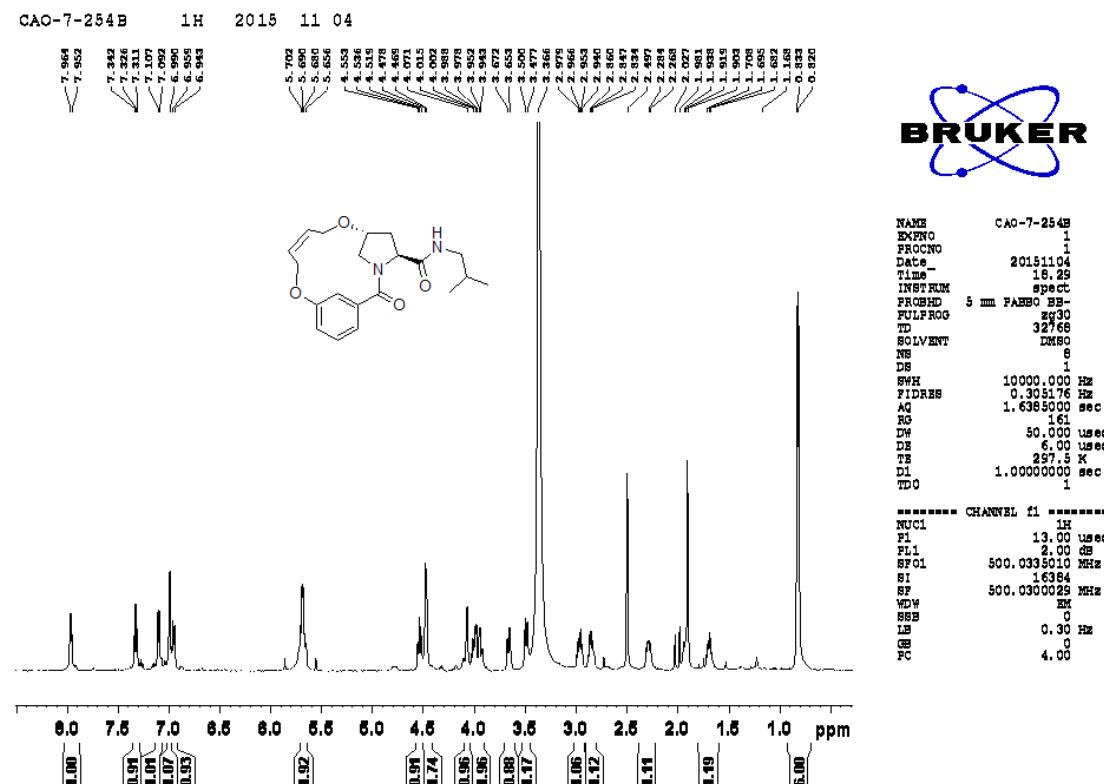


**Figure S21.**  $^1\text{H}$ -NMR Spectrum of **29**.

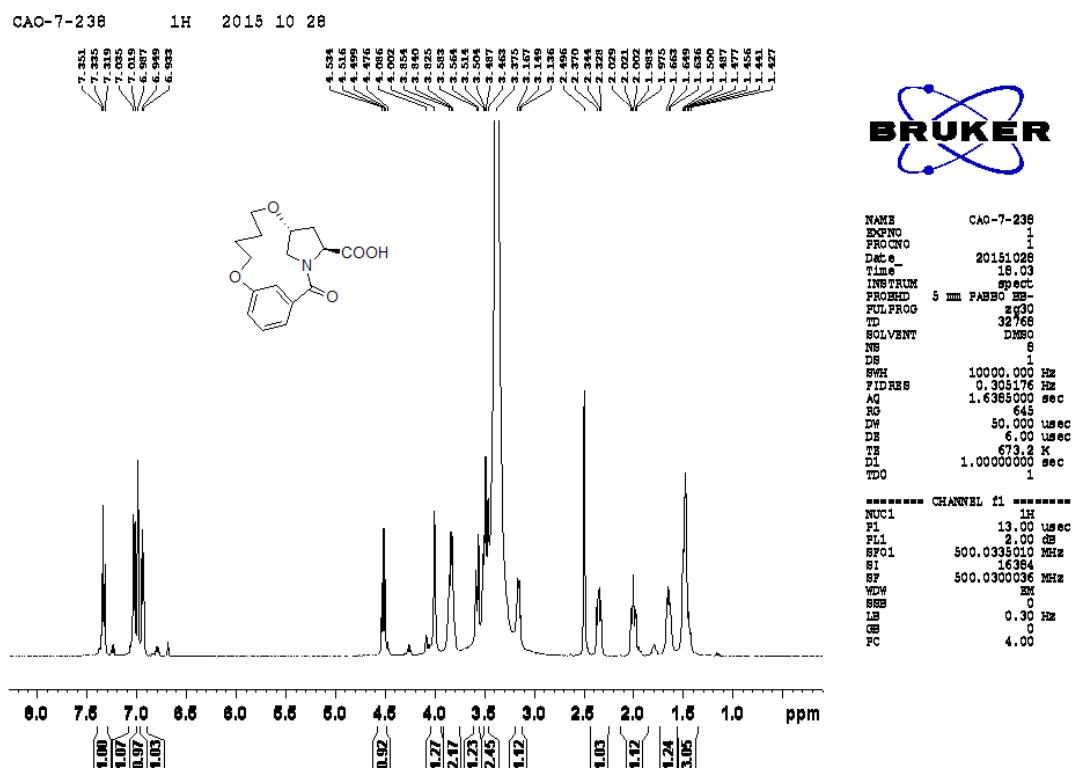
Figure S22.  $^1\text{H}$ -NMR Spectrum of 30.Figure S23.  $^1\text{H}$ -NMR Spectrum of 31.



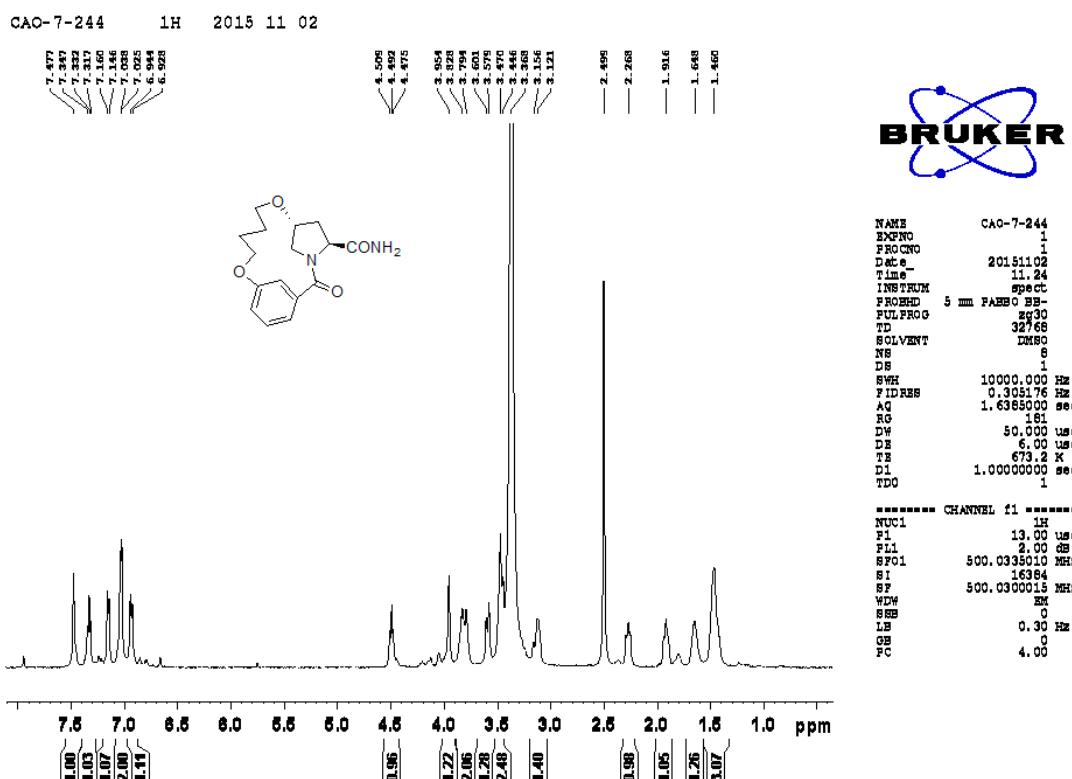
**Figure S24.**  $^1\text{H}$ -NMR Spectrum of 32.



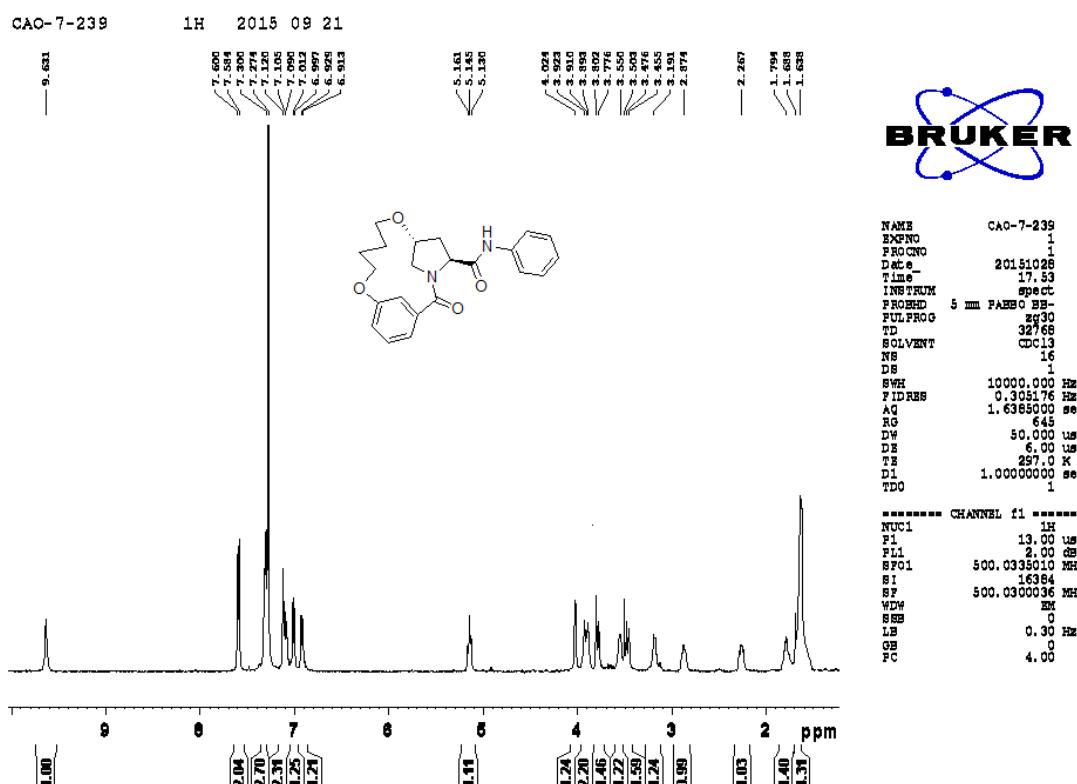
**Figure S25.**  $^1\text{H}$ -NMR Spectrum of 33.



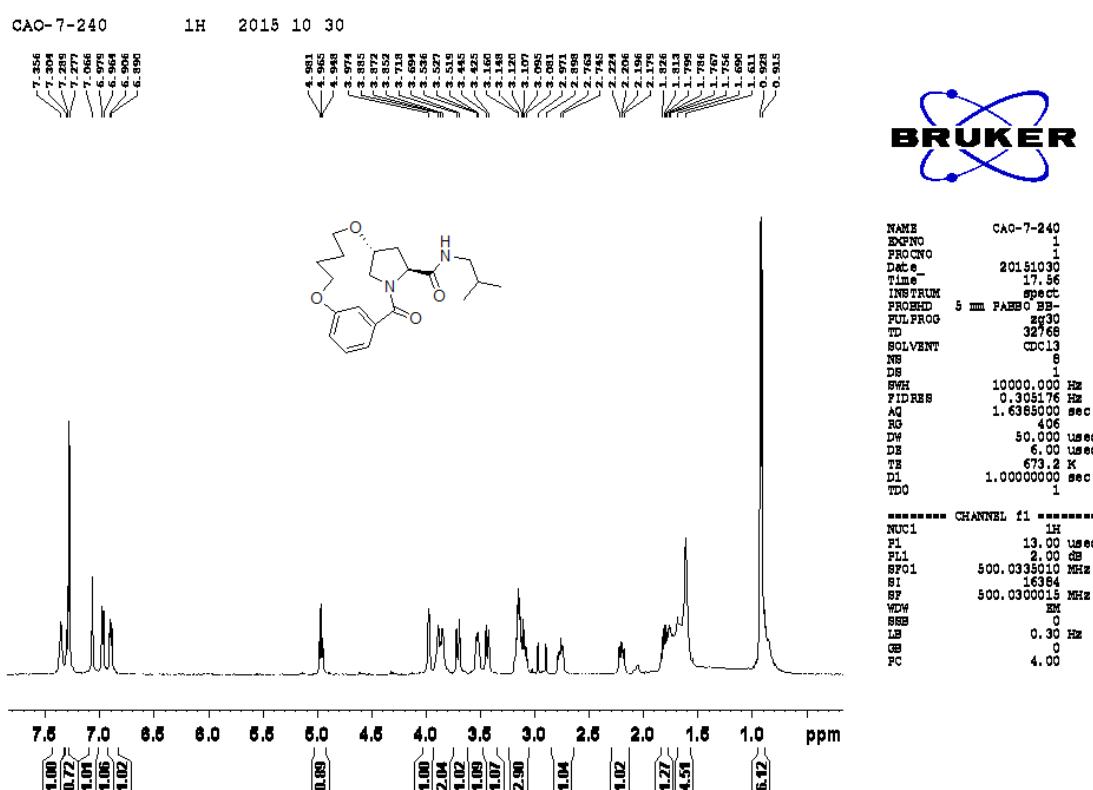
**Figure S26.**  $^1\text{H}$ -NMR Spectrum of **34**.



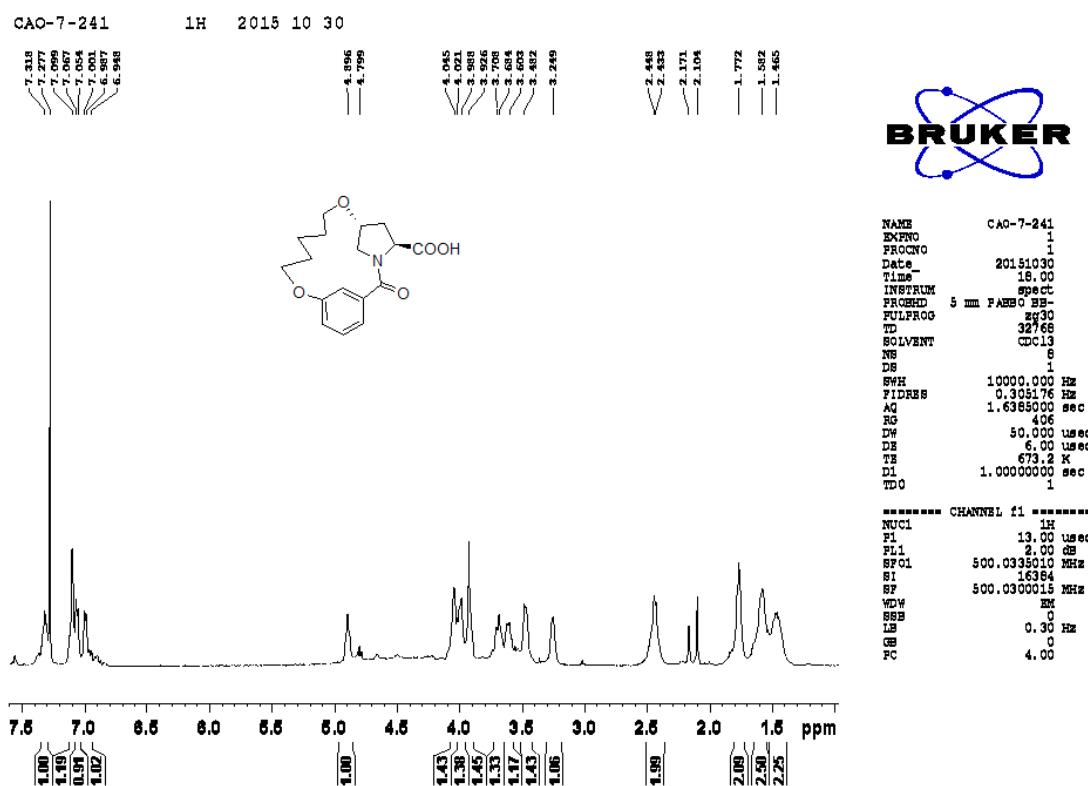
**Figure S27.**  $^1\text{H}$ -NMR Spectrum of 35.



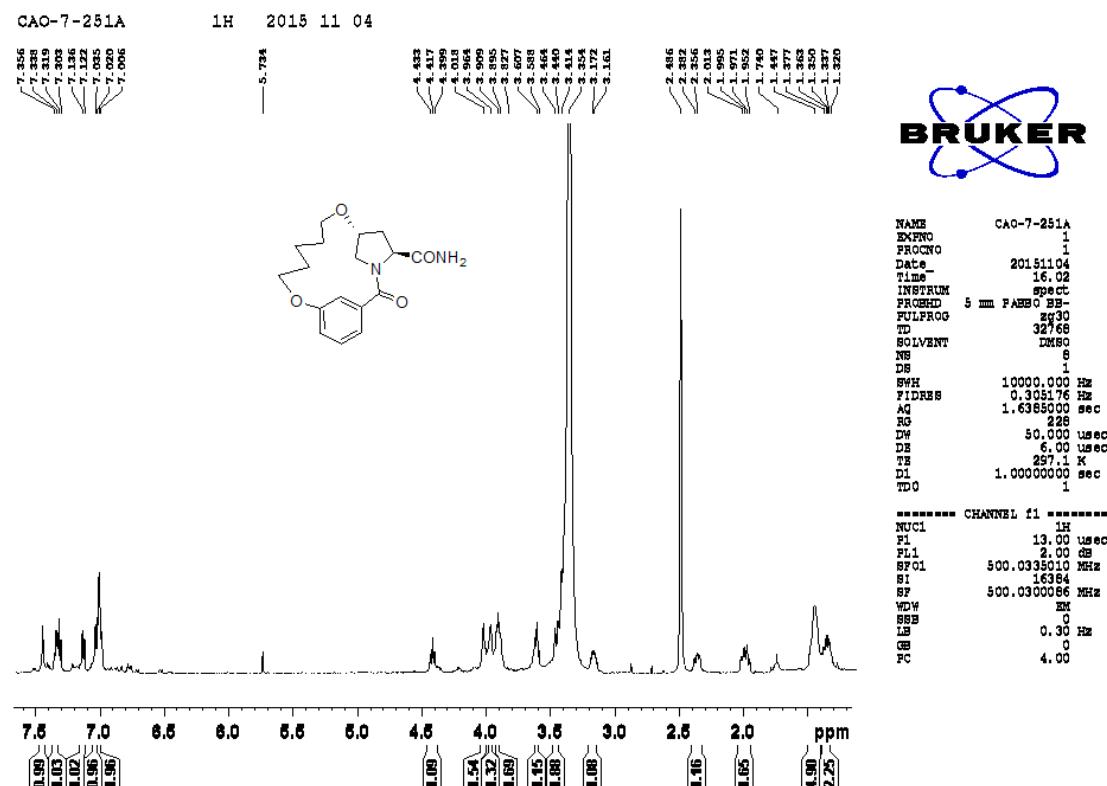
**Figure S28.**  $^1\text{H}$ -NMR Spectrum of **36**.



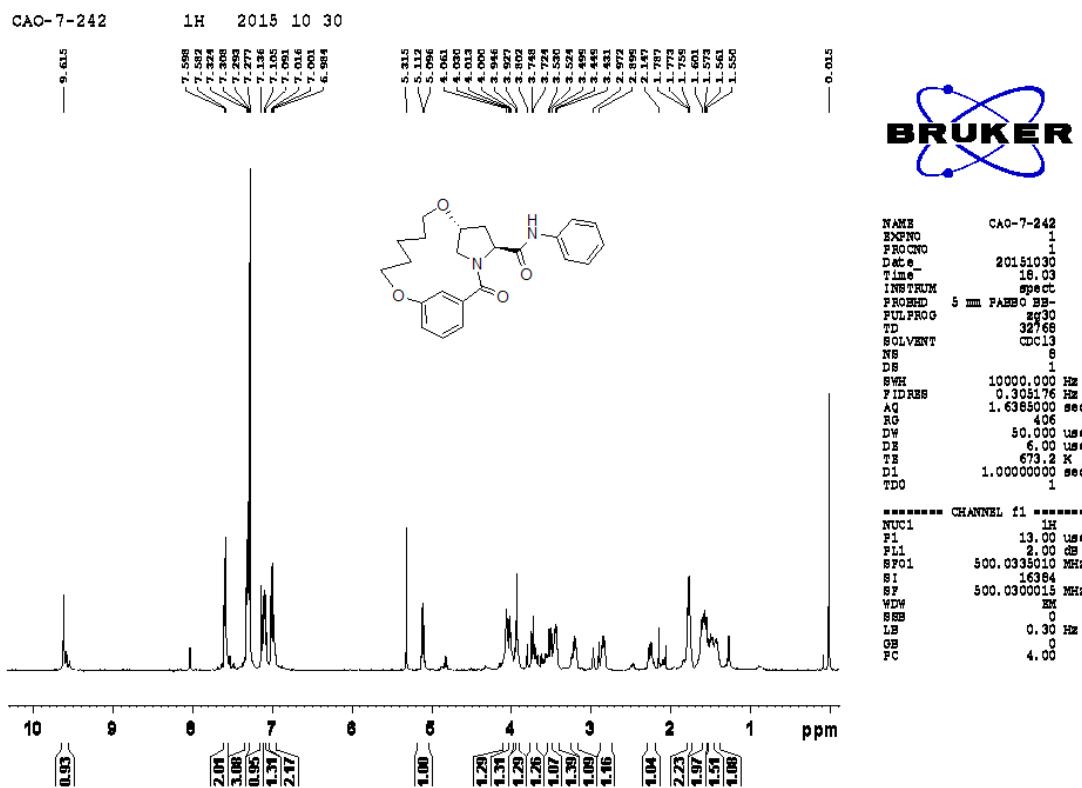
**Figure S29.**  $^1\text{H}$ -NMR Spectrum of **37**.



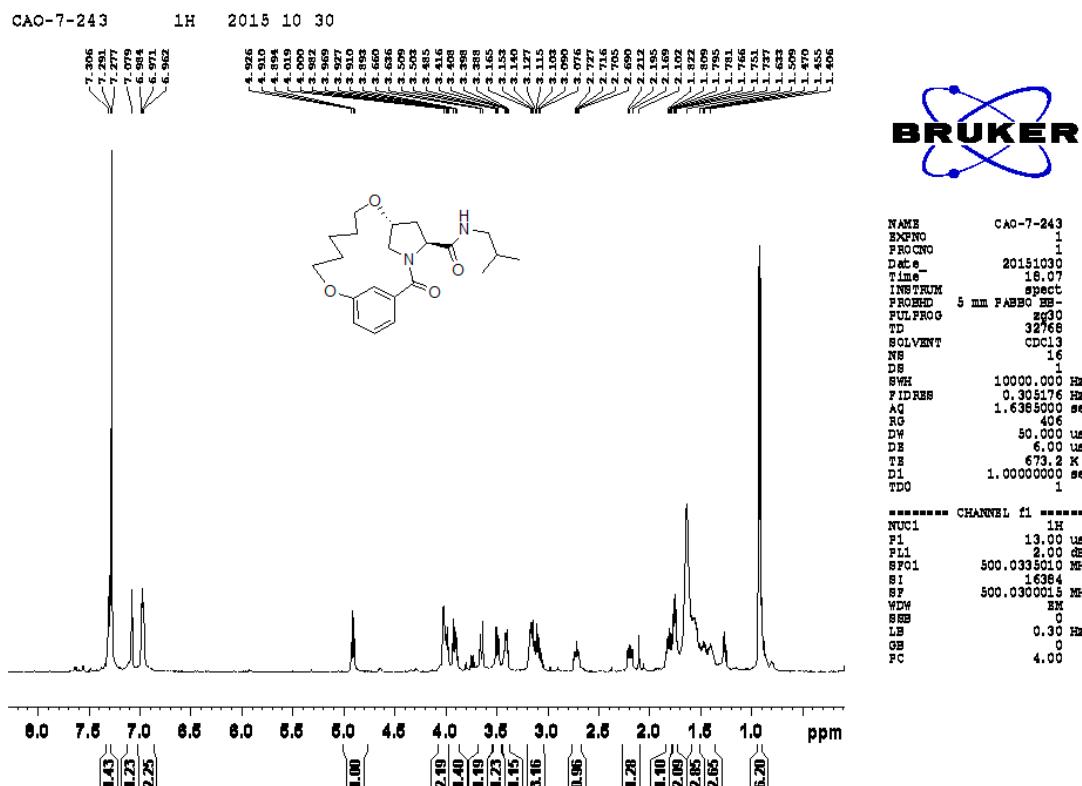
**Figure S30.**  $^1\text{H}$ -NMR Spectrum of 38.



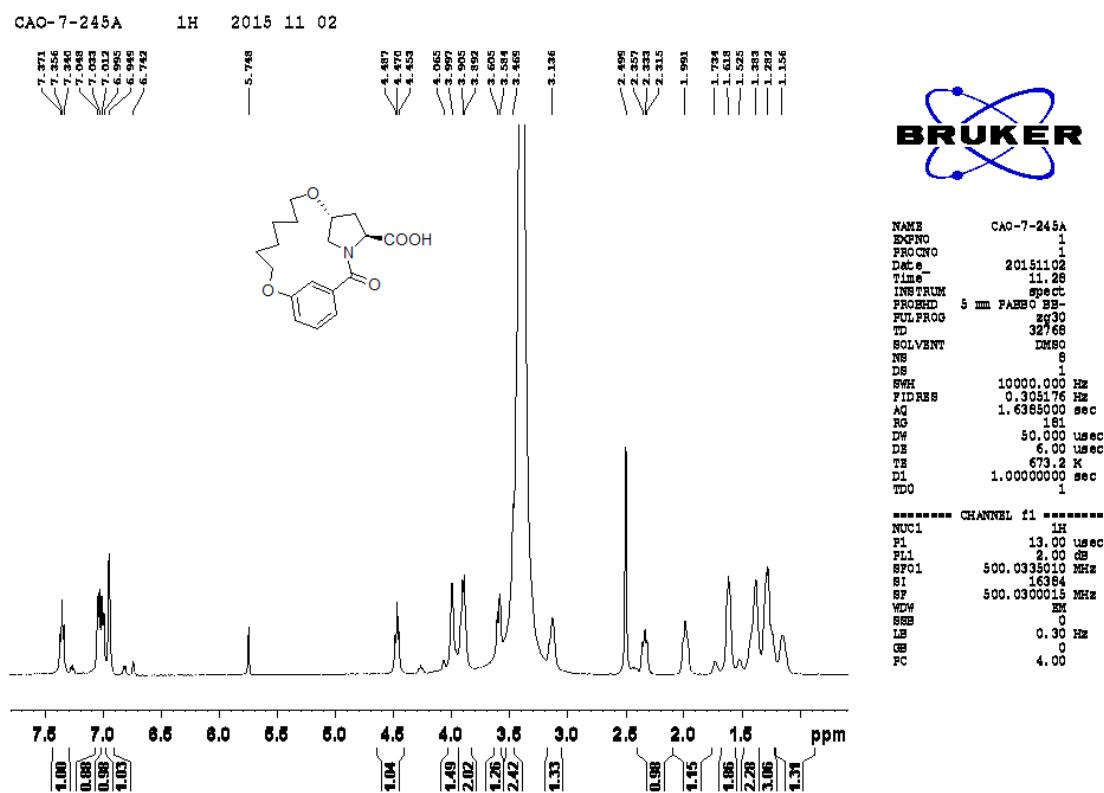
**Figure S31.**  $^1\text{H}$ -NMR Spectrum of **39**.



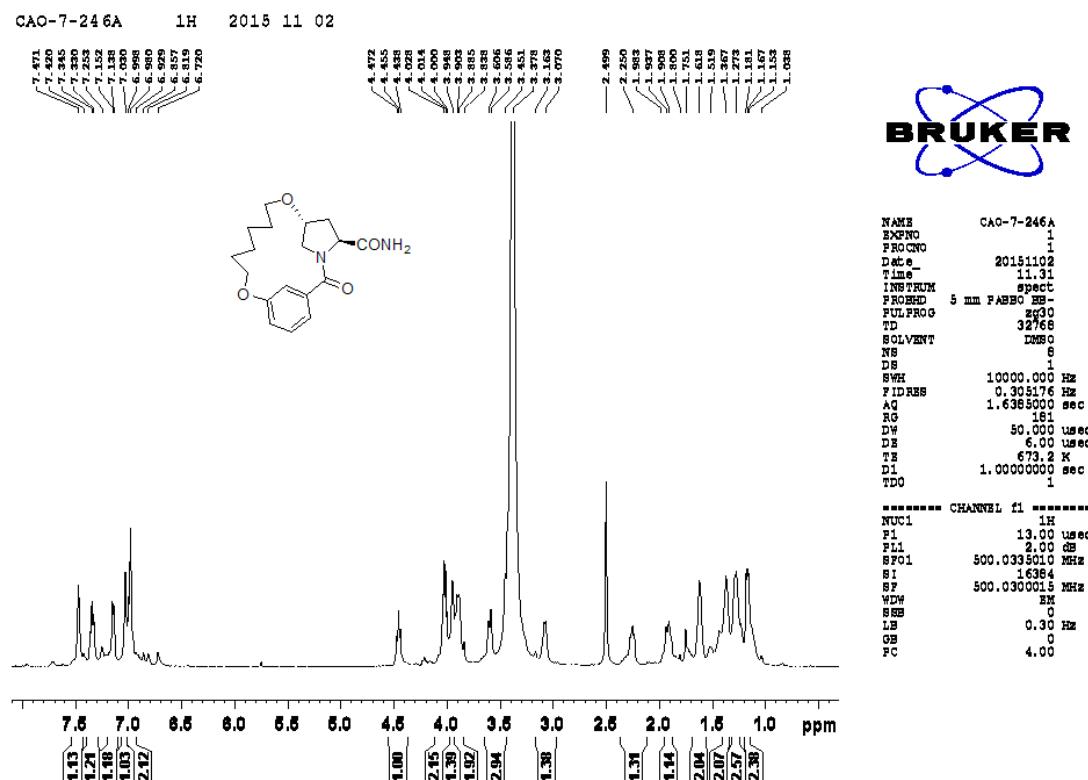
**Figure S32.**  $^1\text{H}$ -NMR Spectrum of **40**.



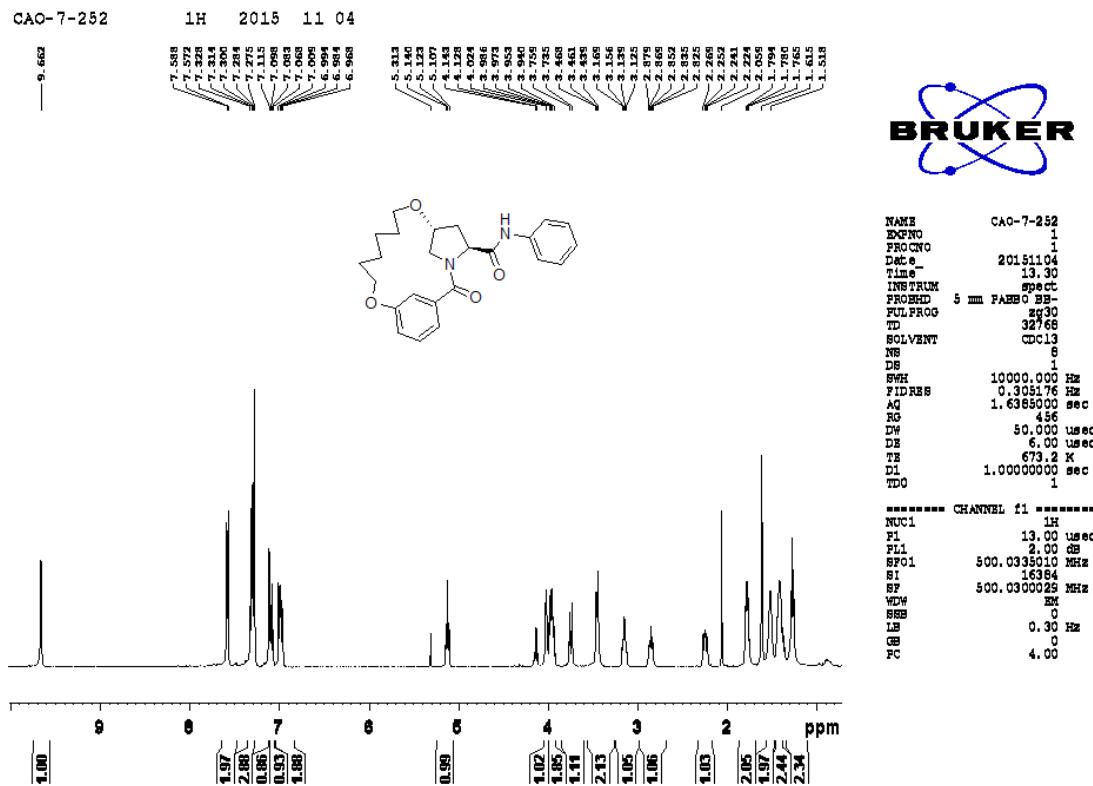
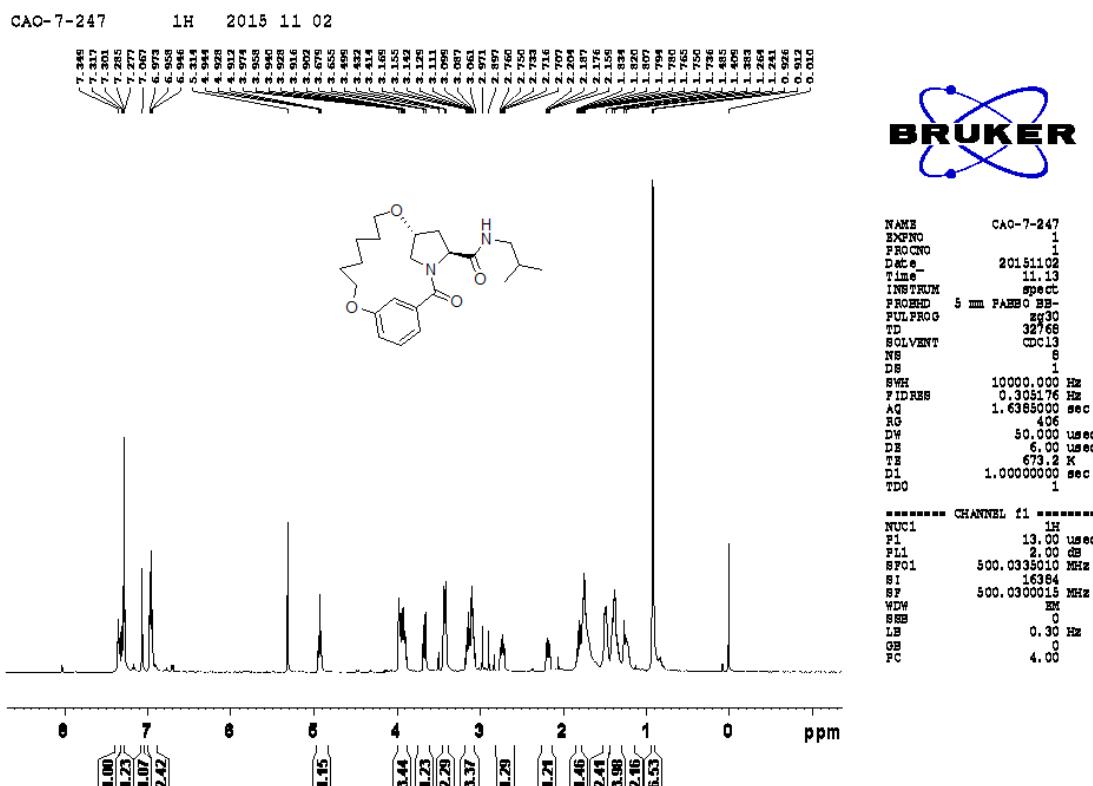
**Figure S33.**  $^1\text{H}$ -NMR Spectrum of **41**.



**Figure S34.**  $^1\text{H}$ -NMR Spectrum of **42**.



**Figure S35.**  $^1\text{H}$ -NMR Spectrum of **43**.

Figure S36.  $^1\text{H}$ -NMR Spectrum of 44.Figure S37.  $^1\text{H}$ -NMR Spectrum of 45.