

## Bisaurones - Enzymatic Production and Biological Evaluation

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Figure S1. HPLC chromatogram of the ethyl acetate extract of the enzymatically transformed butein by laccase after 2 h.

Figure S2. HPLC chromatogram of the ethyl acetate extract of the enzymatically transformed butein by laccase after 20 h

Figure S3. Zoomed in part of the HPLC chromatogram of aurone dimers used in isolation.

Figure S4. <sup>1</sup>H NMR spectrum of butein.

Figure S5. <sup>1</sup>H NMR spectrum of sulfuretin.

Figure S6. The overlapped <sup>1</sup>H NMR spectra of the dimer **3** and sulfuretin (A-ring protons H-4, H-5 and H-7 from S unit almost on the same  $\delta_H$  values).

Figure S7. The overlapped <sup>13</sup>C NMR spectra of the dimer **3** and sulfuretin (A-ring carbons C-4, C-5, C-6 and C-7 from S unit almost on the same  $\delta_C$  values).

Figure S8. <sup>1</sup>H NMR spectrum of the dimer **1**.

Figure S9. <sup>13</sup>C NMR spectrum of the dimer **1** (140-196 ppm).

Figure S10. <sup>13</sup>C NMR spectrum of the dimer **1** (112-129 ppm).

Figure S11. <sup>13</sup>C NMR spectrum of the dimer **1** (77-103 ppm).

Figure S12. HSQC spectrum of the dimer **1**.

Figure S13. HMBC spectrum of the dimer **1**.

Figure S14. COSY spectrum of the dimer **1**.

Figure S15. NOESY spectrum of the dimer **1**.

Figure S16. <sup>1</sup>H NMR spectrum of the dimer **3**.

Figure S17. <sup>13</sup>C NMR spectrum of the dimer **3** (142-195 ppm).

Figure S18. <sup>13</sup>C NMR spectrum of the dimer **3** (99-129 ppm).

Figure S19.  $^{13}\text{C}$  NMR spectrum of the dimer **3** (77-101 ppm).

Figure S20. HSQC spectrum of the dimer **3**.

Figure S21. HMBC spectrum of the dimer **3**.

Figure S22. COSY spectrum of the dimer **3**.

Figure S23. NOESY spectrum of the dimer **3**.

Figure S24. NOESY correlations of proton H-10a of the dimer **3**.

Figure S25.  $^1\text{H}$  NMR spectrum of the dimer **4**.

Figure S26.  $^{13}\text{C}$  NMR spectrum of the dimer **4** (139-198 ppm).

Figure S27.  $^{13}\text{C}$  NMR spectrum of the dimer **4** (75-133 ppm).

Figure S28. HSQC spectrum of the dimer **4**.

Figure S29. HMBC spectrum of the dimer **4**.

Figure S30. Key correlation from the HMBC spectrum of the dimer **4**.

Figure S31. COSY spectrum of the dimer **4**.

Figure S32. NOESY spectrum of the dimer **4**.

Figure S33. Important NOE correlations of proton H-10a of the dimer **4**.

Figure S34.  $^1\text{H}$  NMR spectrum of the dimer **2**.

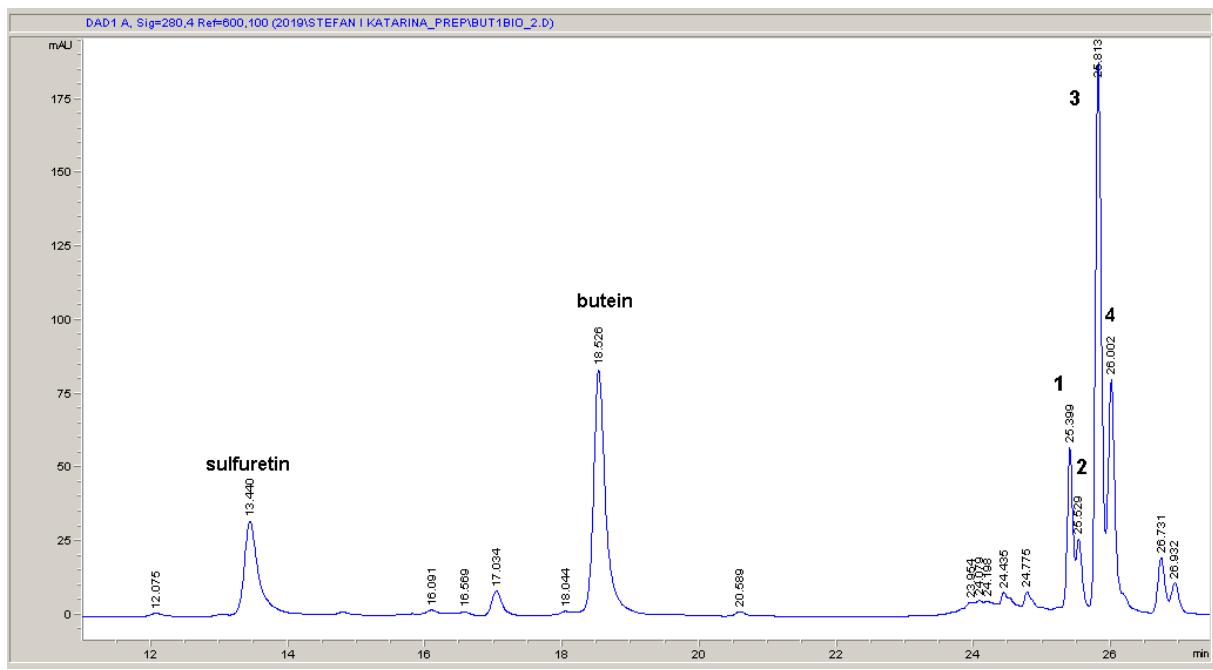


Figure S1. HPLC chromatogram of the ethyl acetate extract of the enzymatically transformed butein by laccase after 2 h.

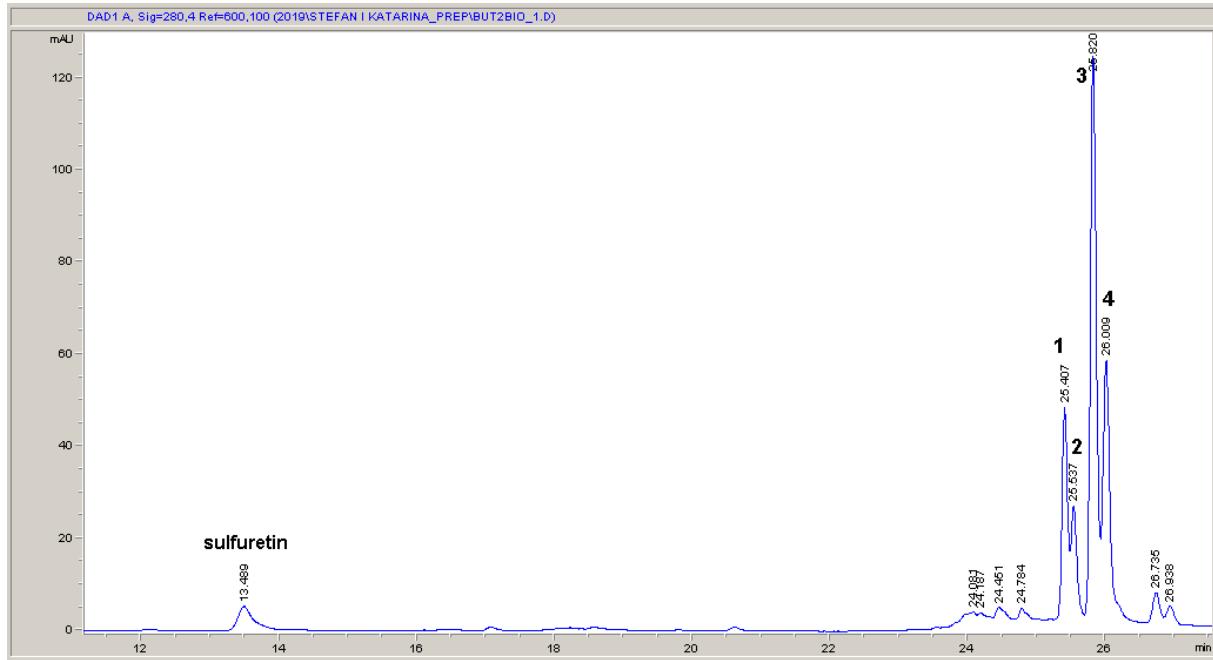


Figure S2. HPLC chromatogram of the ethyl acetate extract of the enzymatically transformed butein by laccase after 20 h.

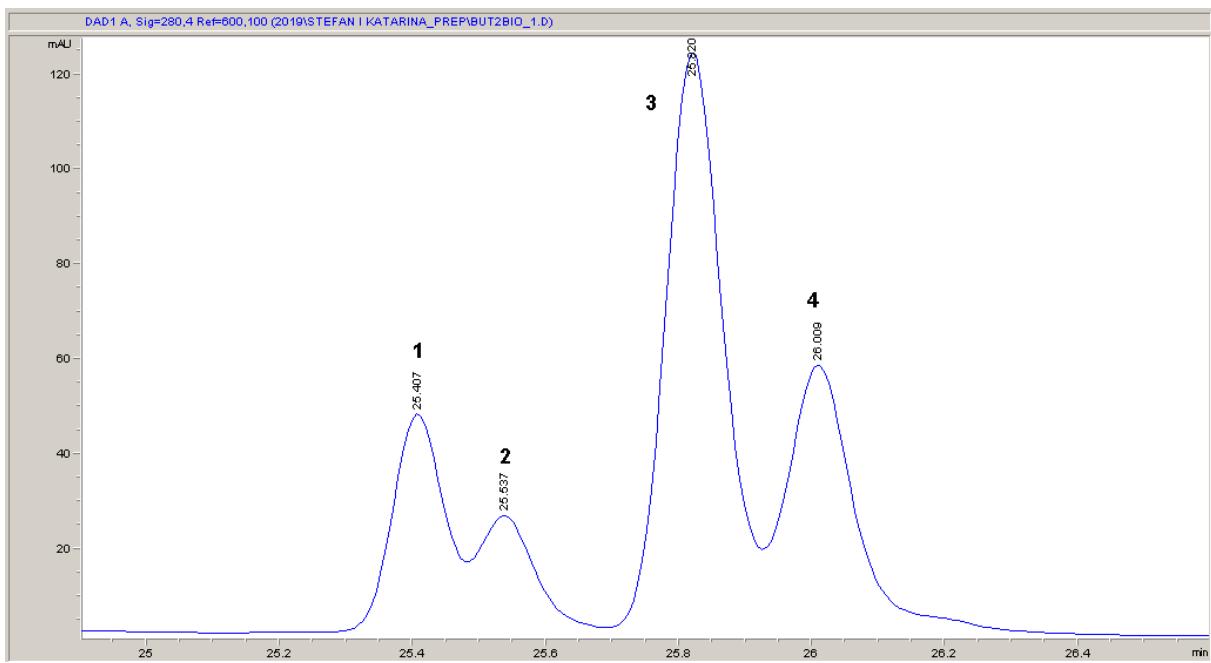


Figure S3. Zoomed in part of the HPLC chromatogram of aurone dimers used in isolation.

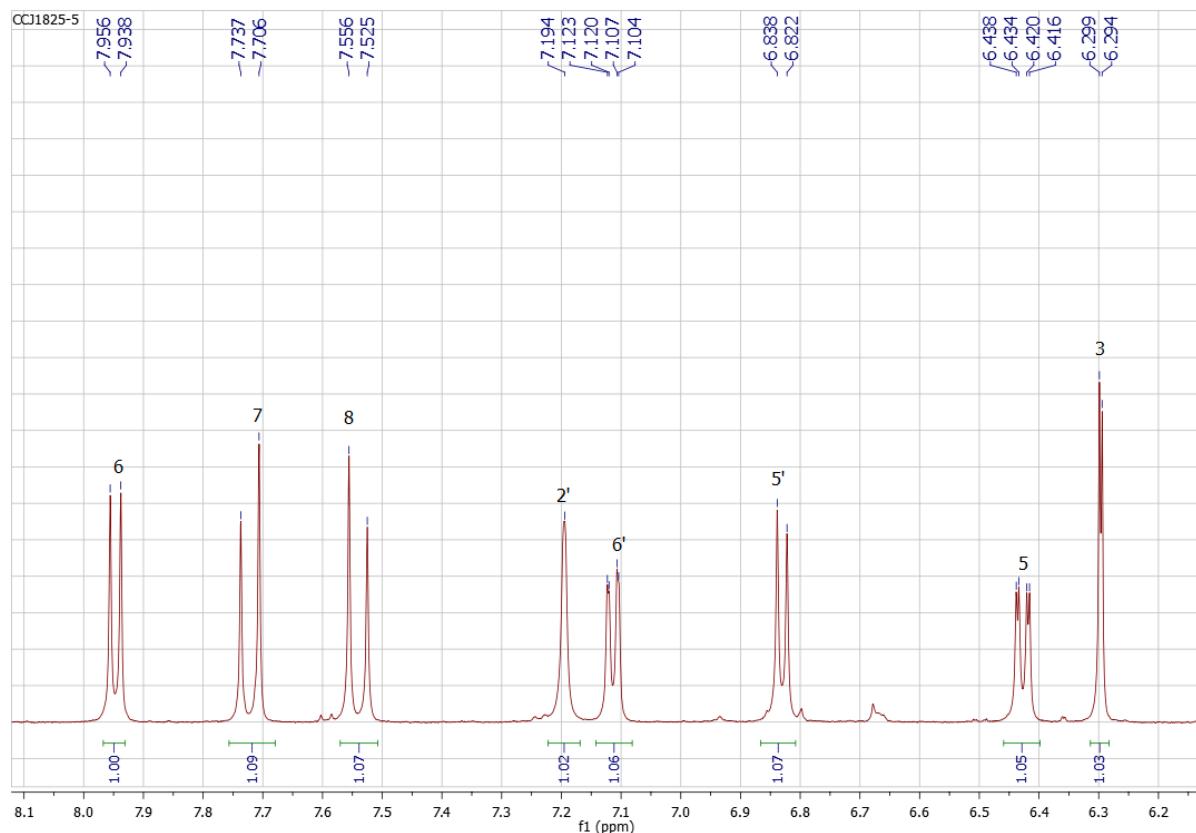


Figure S4.  $^1\text{H}$  NMR spectrum of butein.

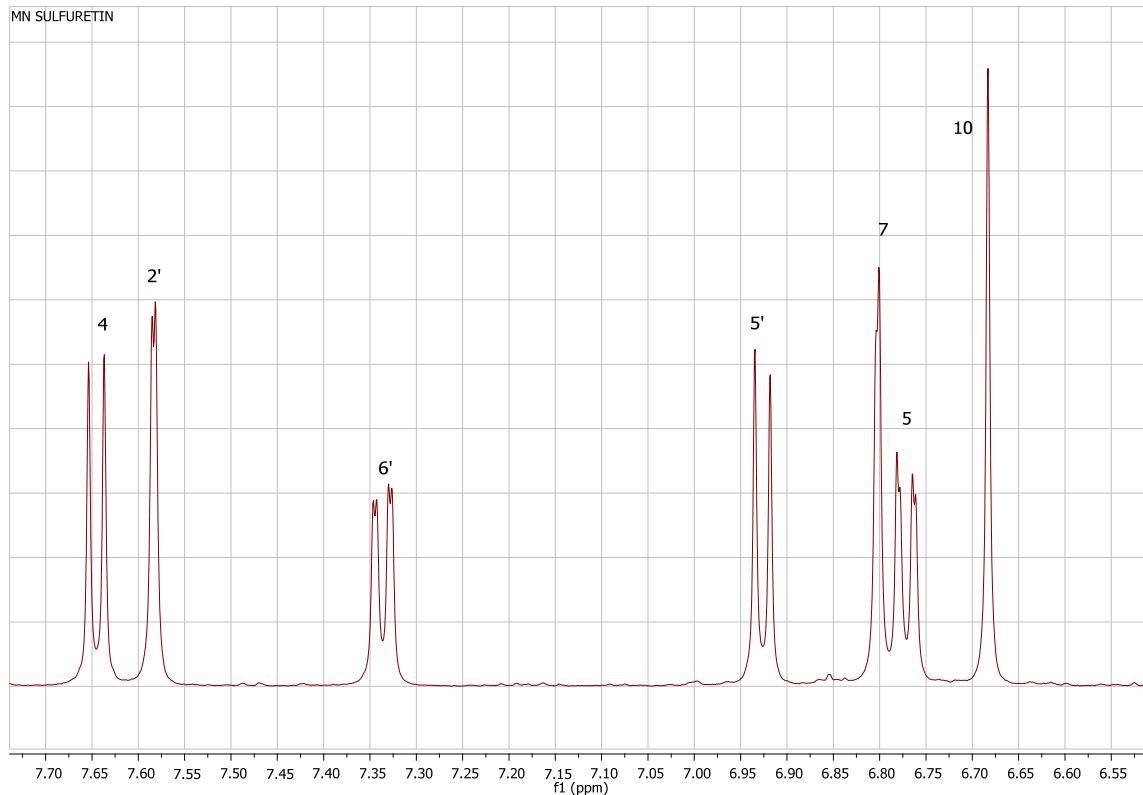


Figure S5.  $^1\text{H}$  NMR spectrum of sulfuretin.

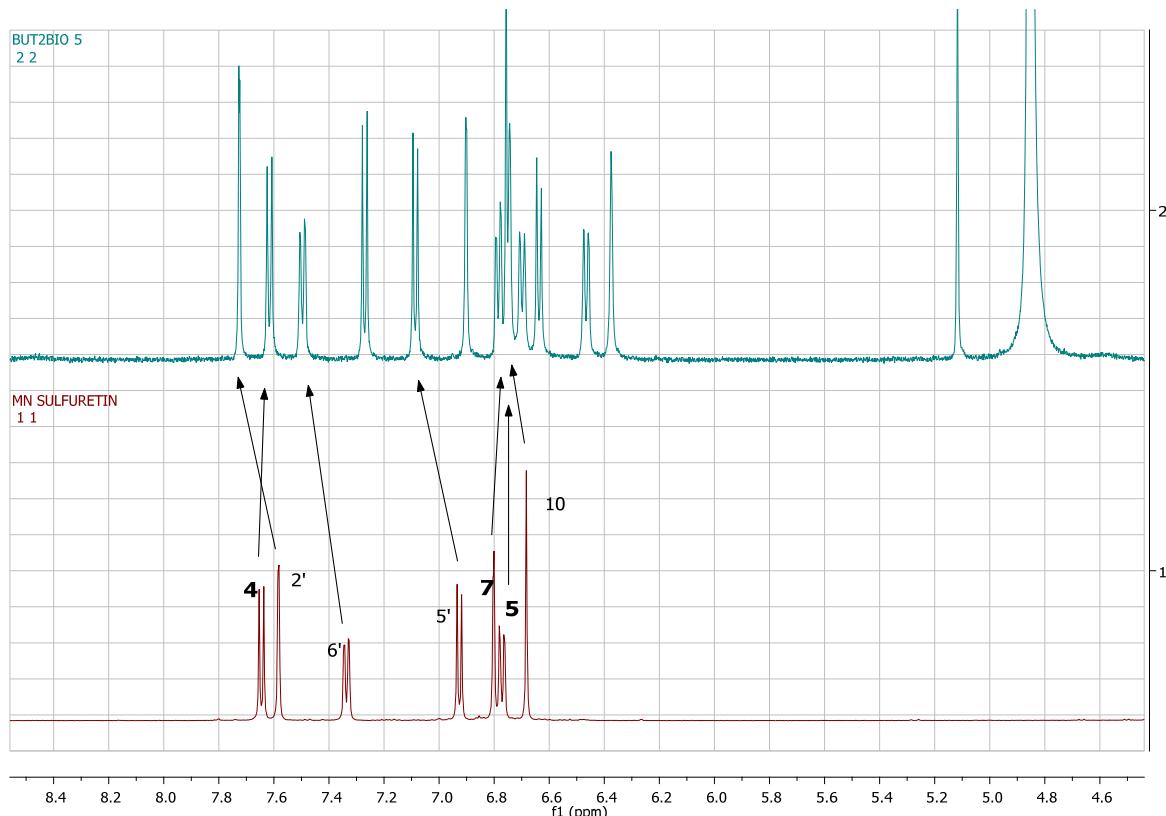


Figure S6. The overlapped  $^1\text{H}$  NMR spectra of the dimer **3** and sulfuretin (A-ring protons H-4, H-5 and H-7 from S unit almost on the same  $\delta_{\text{H}}$  values).

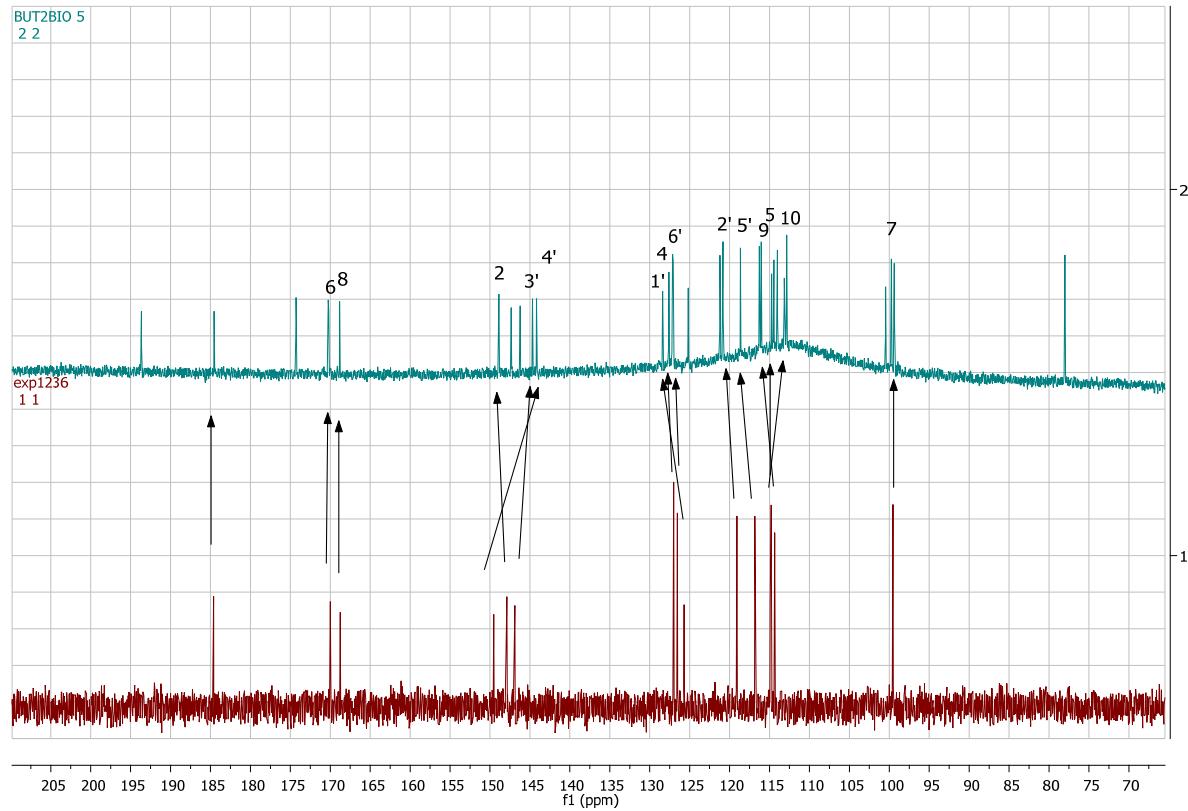


Figure S7. The overlapped  $^{13}\text{C}$  NMR spectra of the dimer **3** and sulfuretin (A-ring carbons C-4, C-5, C-6 and C-7 from S unit almost on the same  $\delta_{\text{C}}$  values).

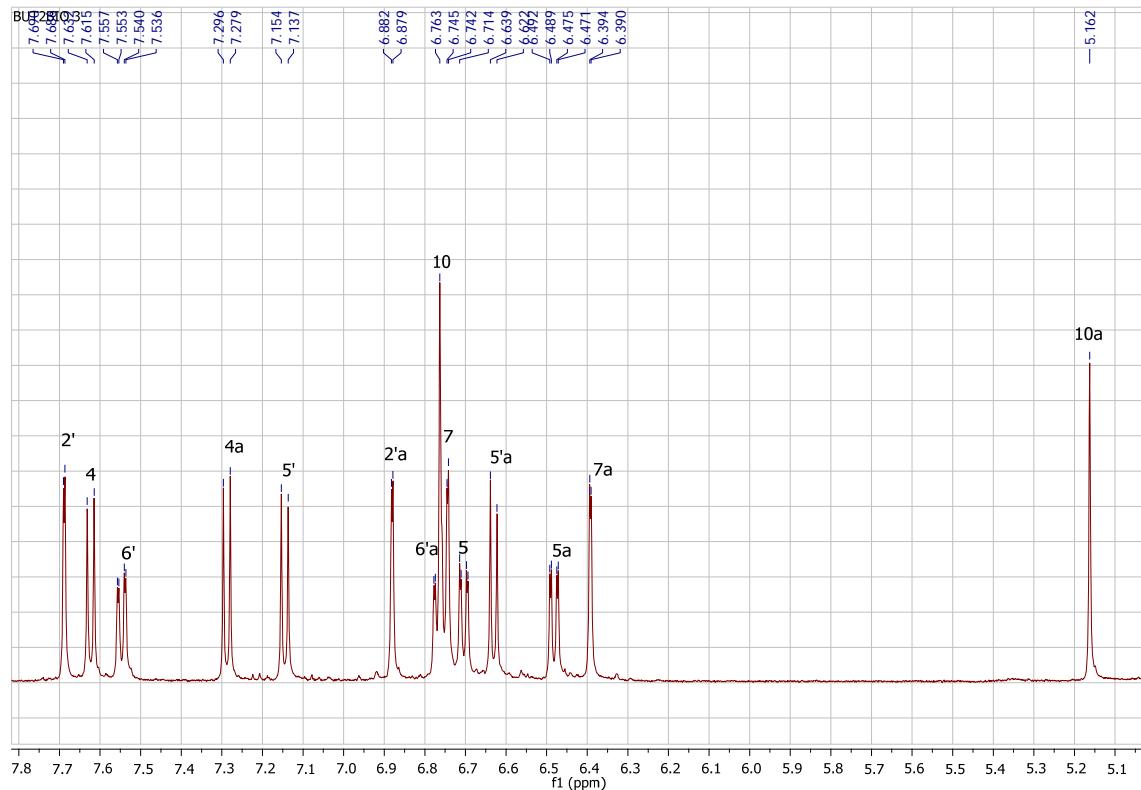


Figure S8.  $^1\text{H}$  NMR spectrum of the dimer **1**.

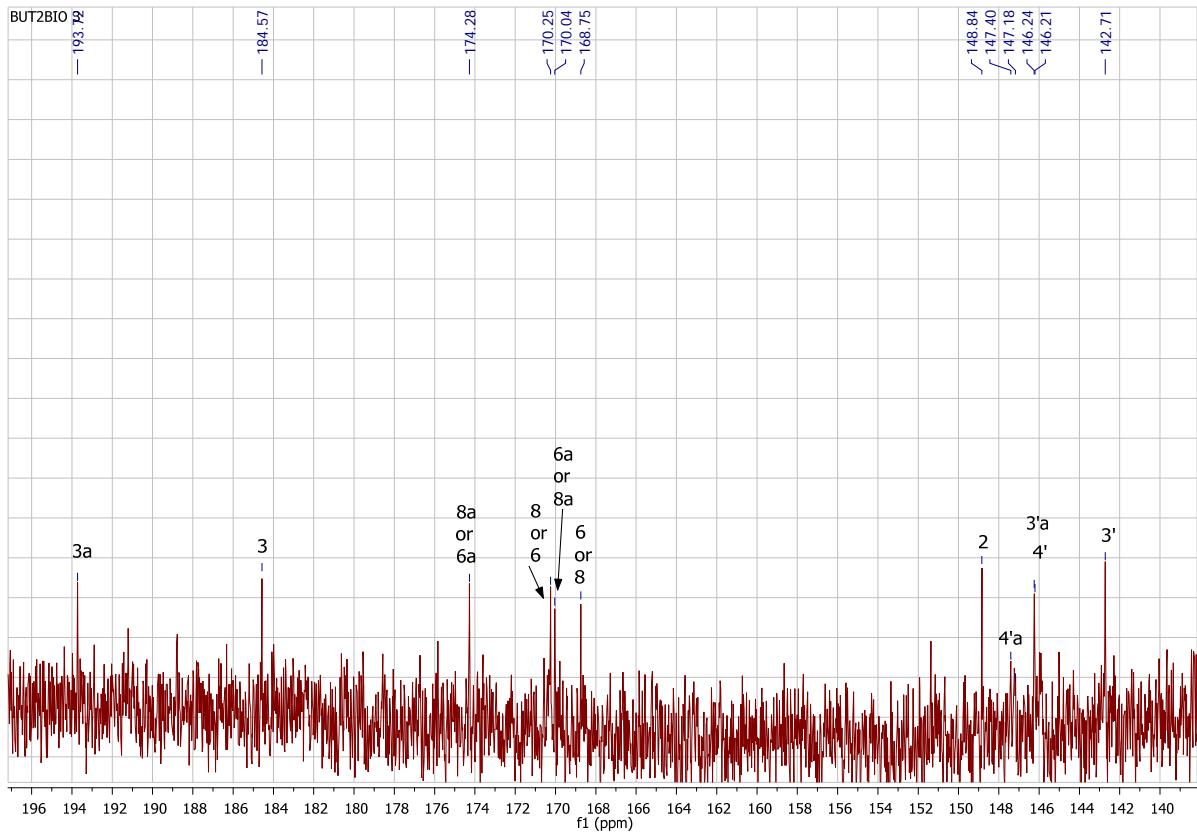


Figure S9. <sup>13</sup>C NMR spectrum of the dimer **1** (140-196 ppm).

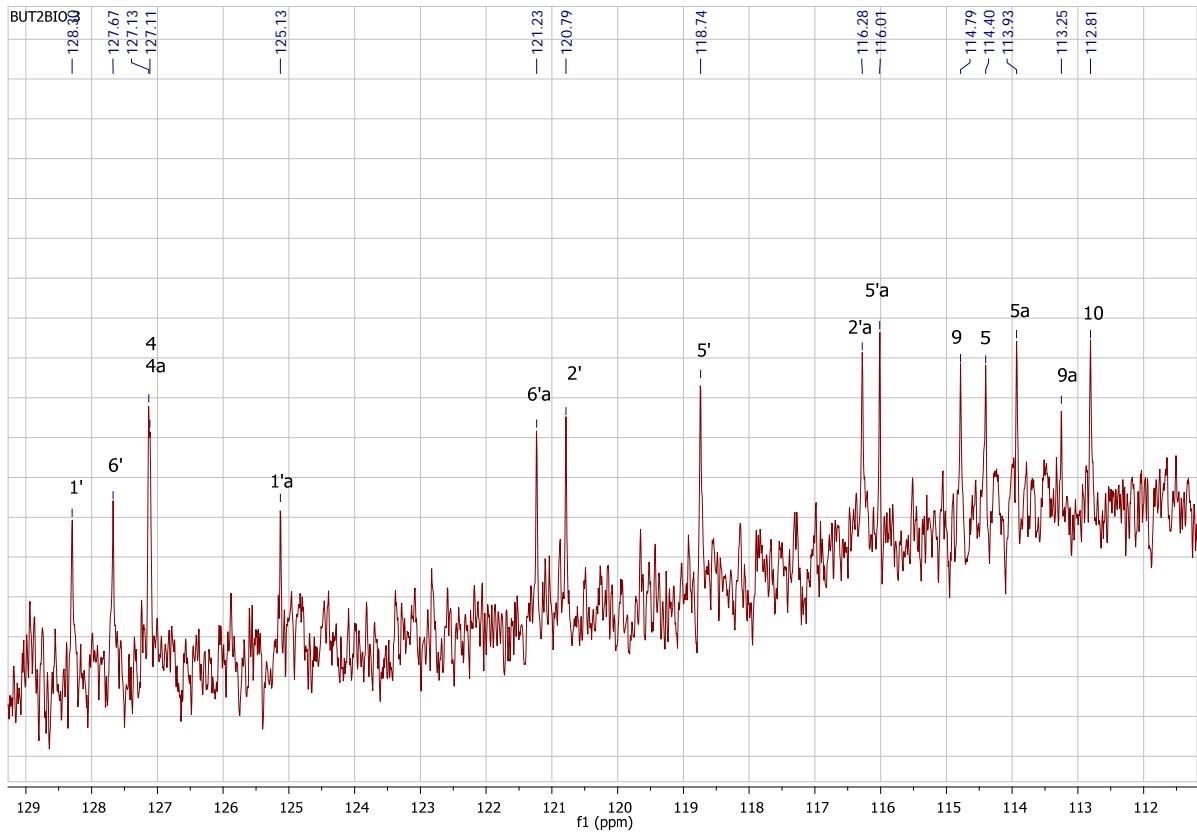


Figure S10. <sup>13</sup>C NMR spectrum of the dimer **1** (112-129 ppm).

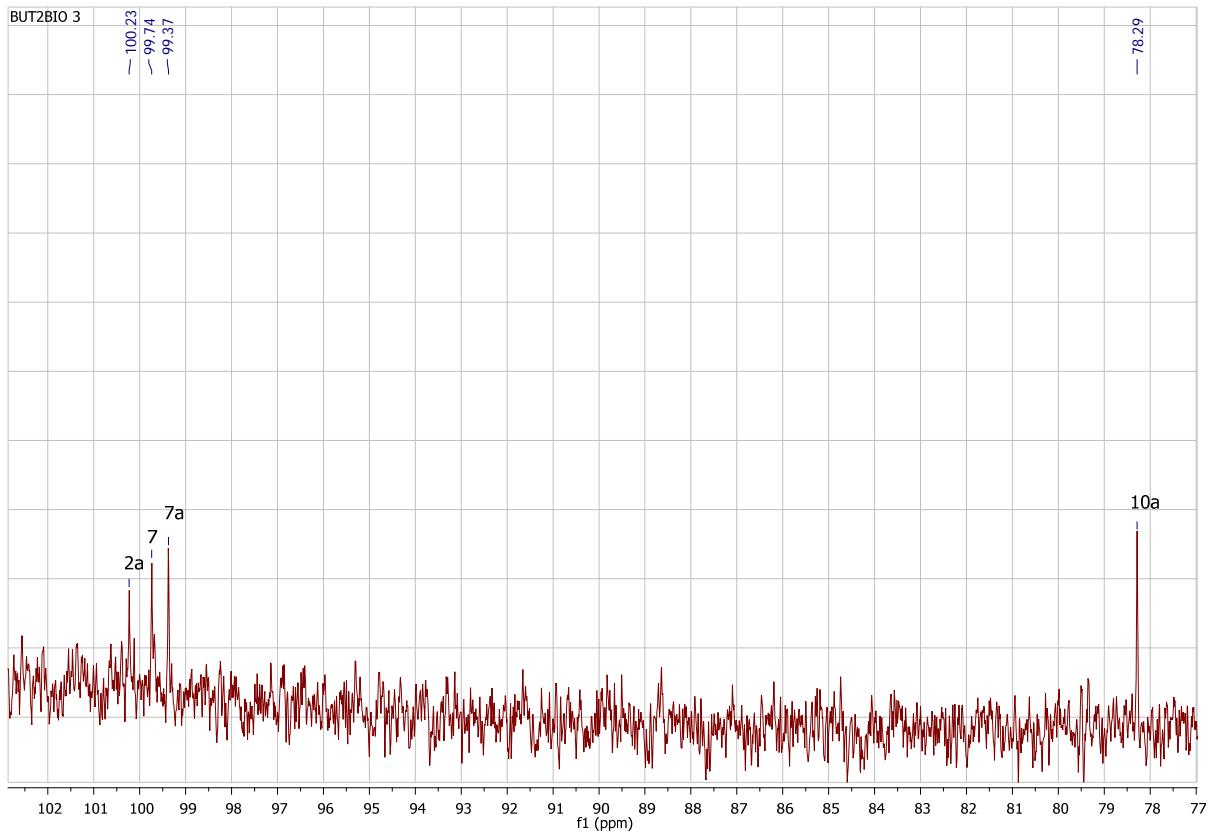


Figure S11.  $^{13}\text{C}$  NMR spectrum of the dimer **1** (77-103 ppm).

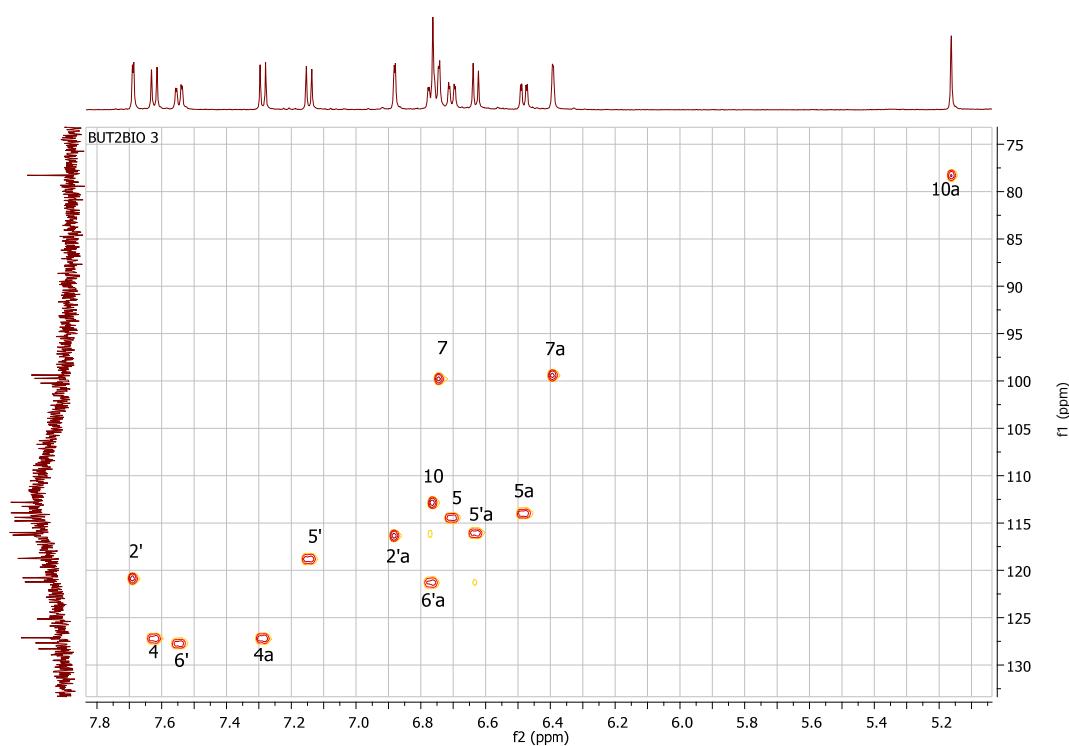


Figure S12. HSQC spectrum of the dimer **1**.

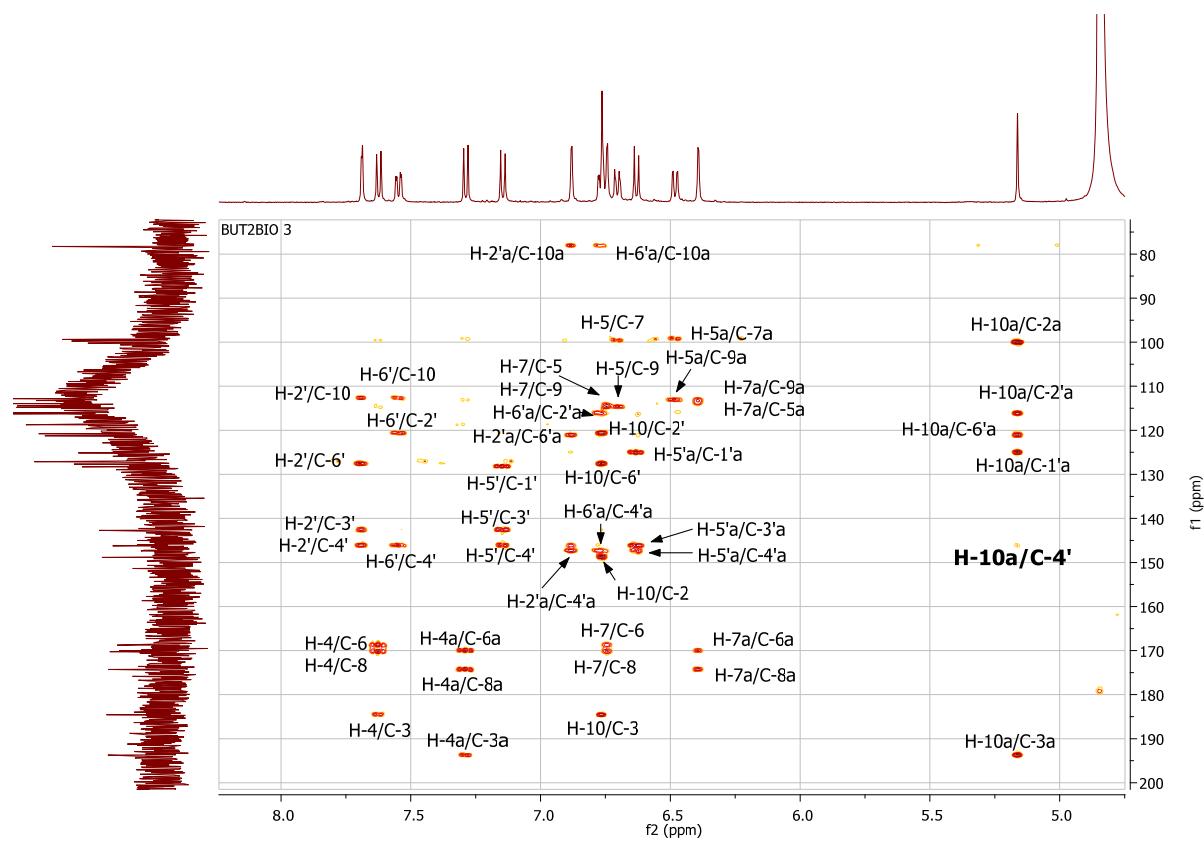


Figure S13. HMBC spectrum of the dimer **1**.

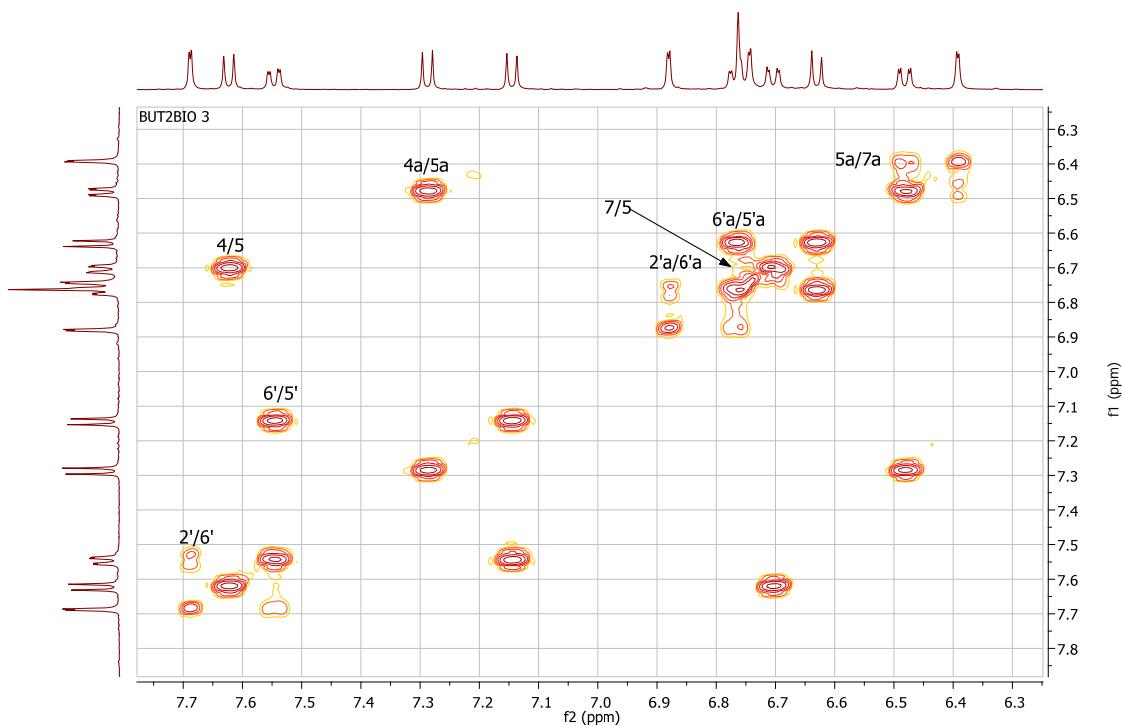


Figure S14. COSY spectrum of the dimer **1**.

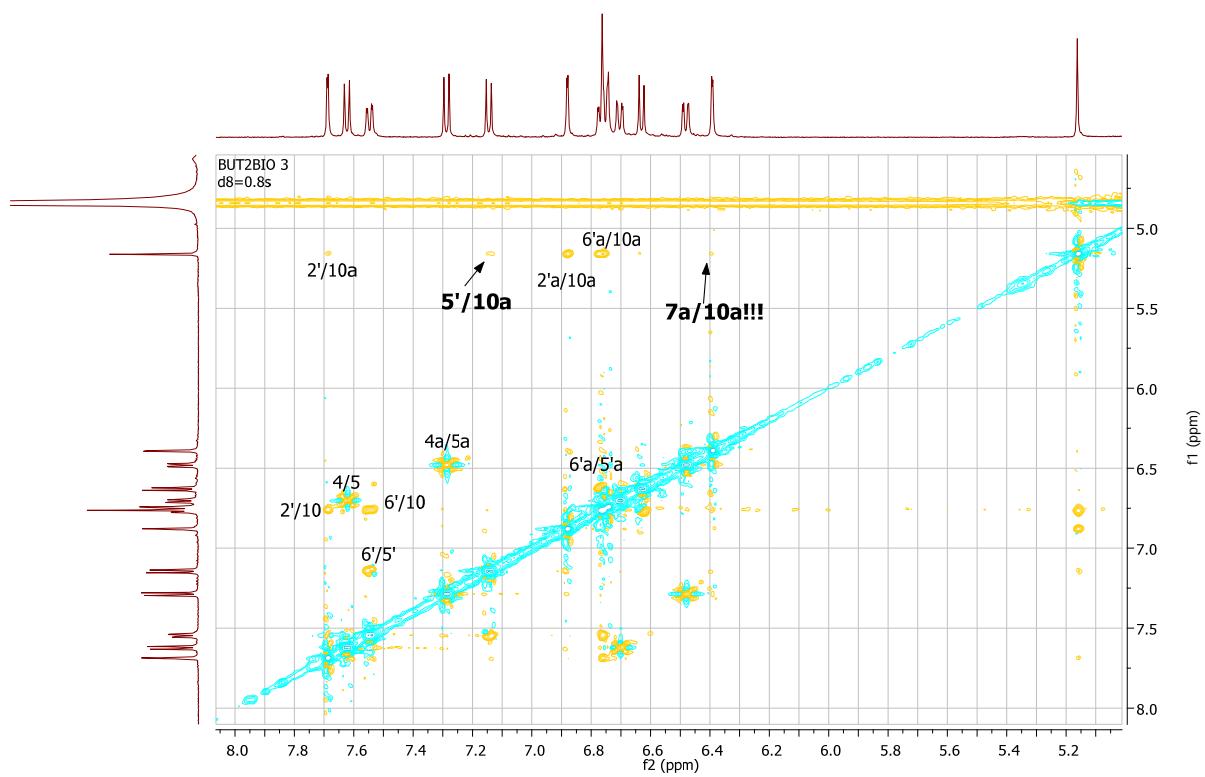


Figure S15. NOESY spectrum of the dimer **1**.

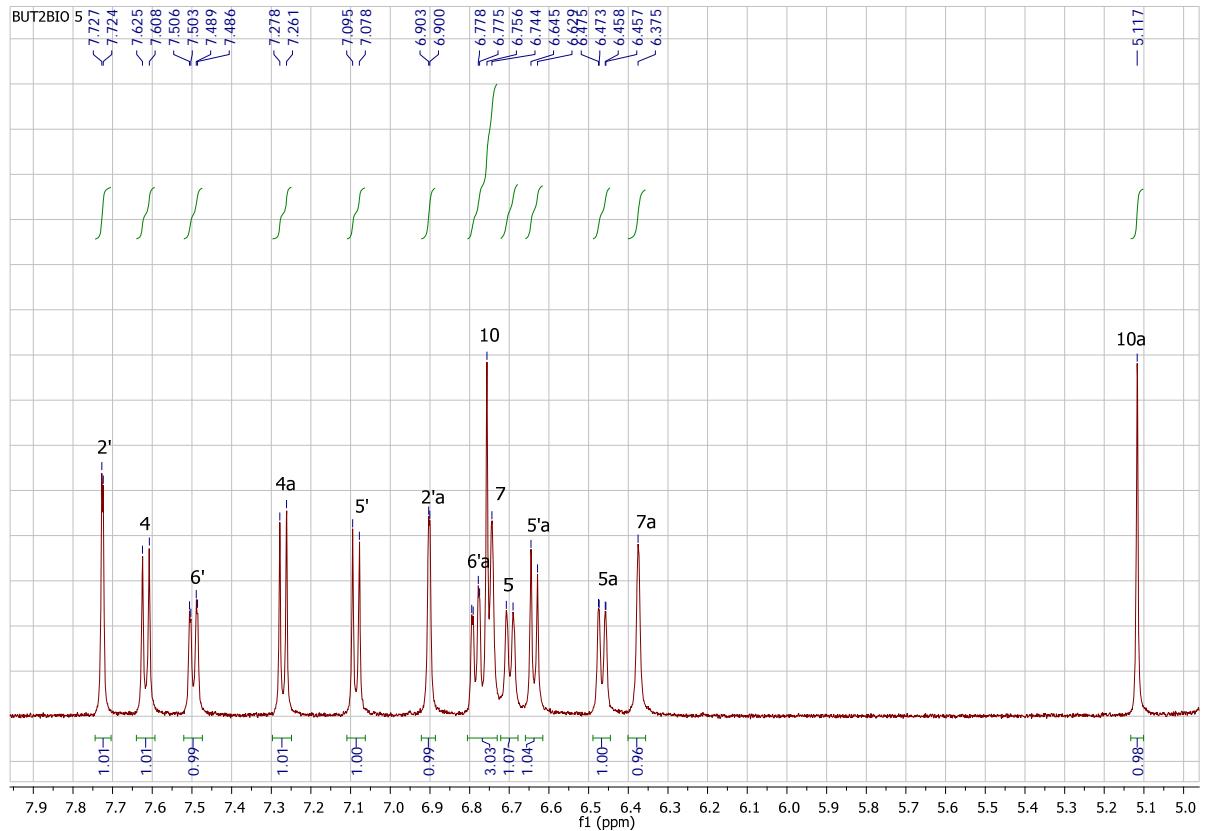


Figure S16.  $^1\text{H}$  NMR spectrum of the dimer **3**.

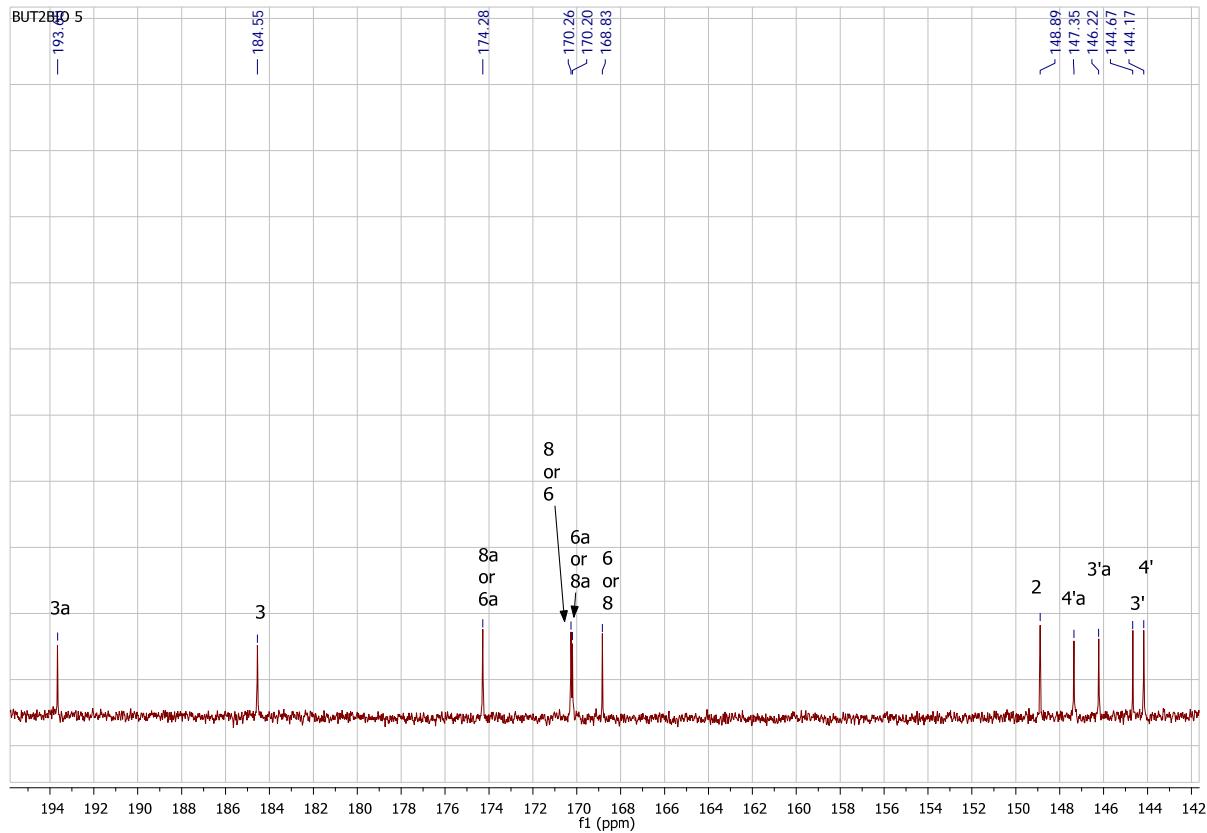


Figure S17.  $^{13}\text{C}$  NMR spectrum of the dimer **3** (142-195 ppm).

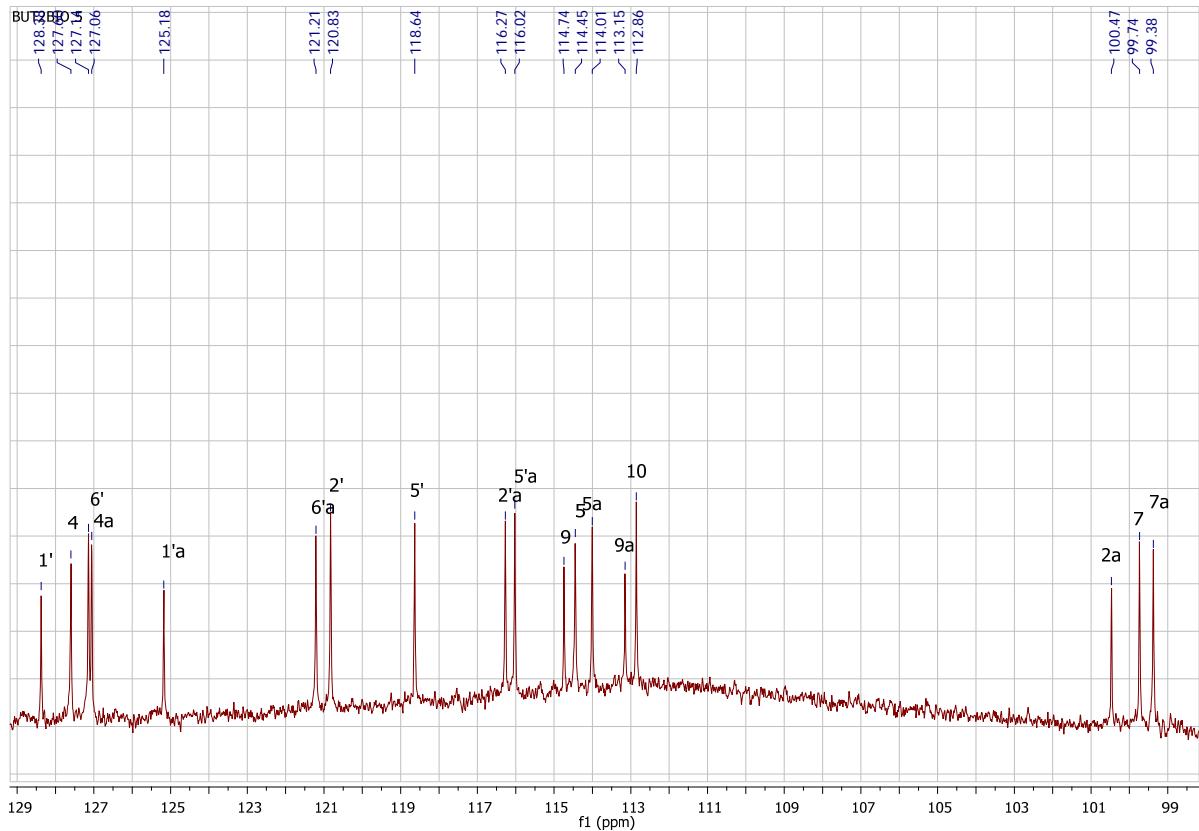


Figure S18.  $^{13}\text{C}$  NMR spectrum of the dimer **3** (99-129 ppm).

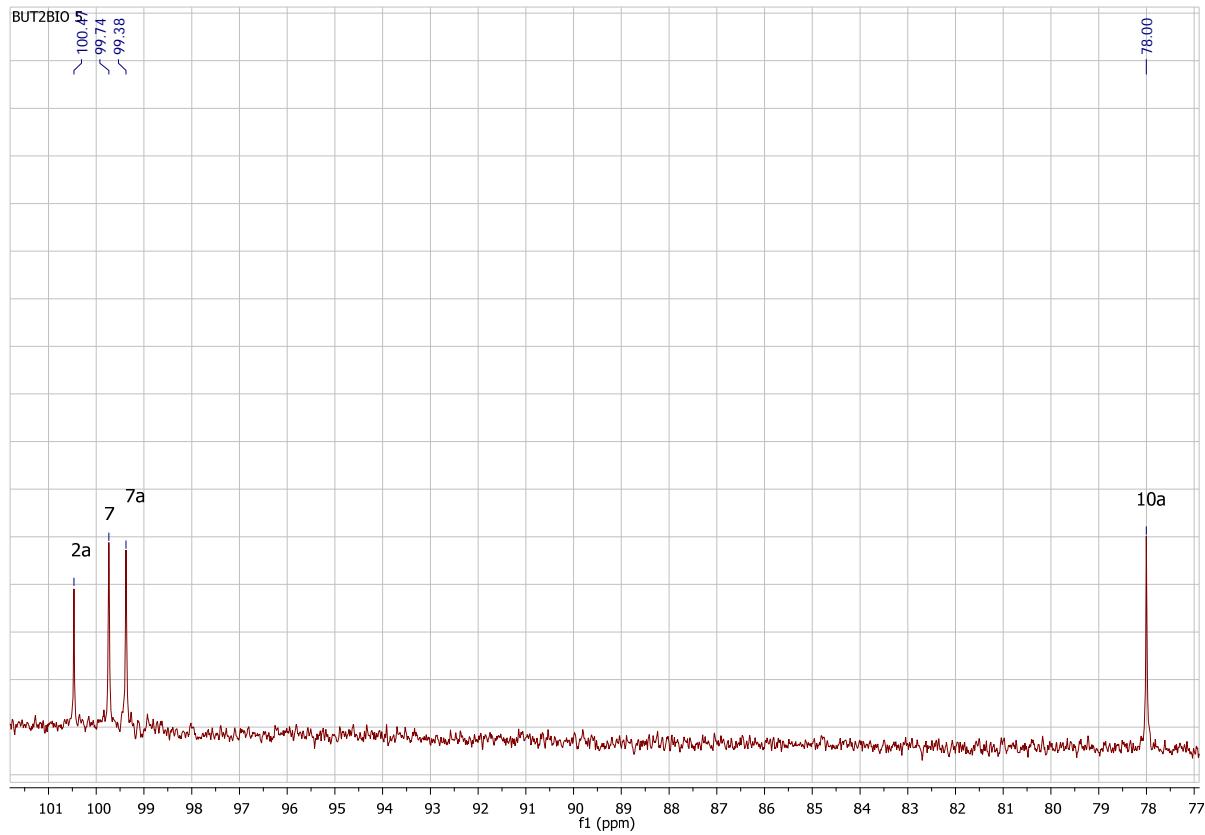


Figure S19.  $^{13}\text{C}$  NMR spectrum of the dimer **3** (77-101 ppm).

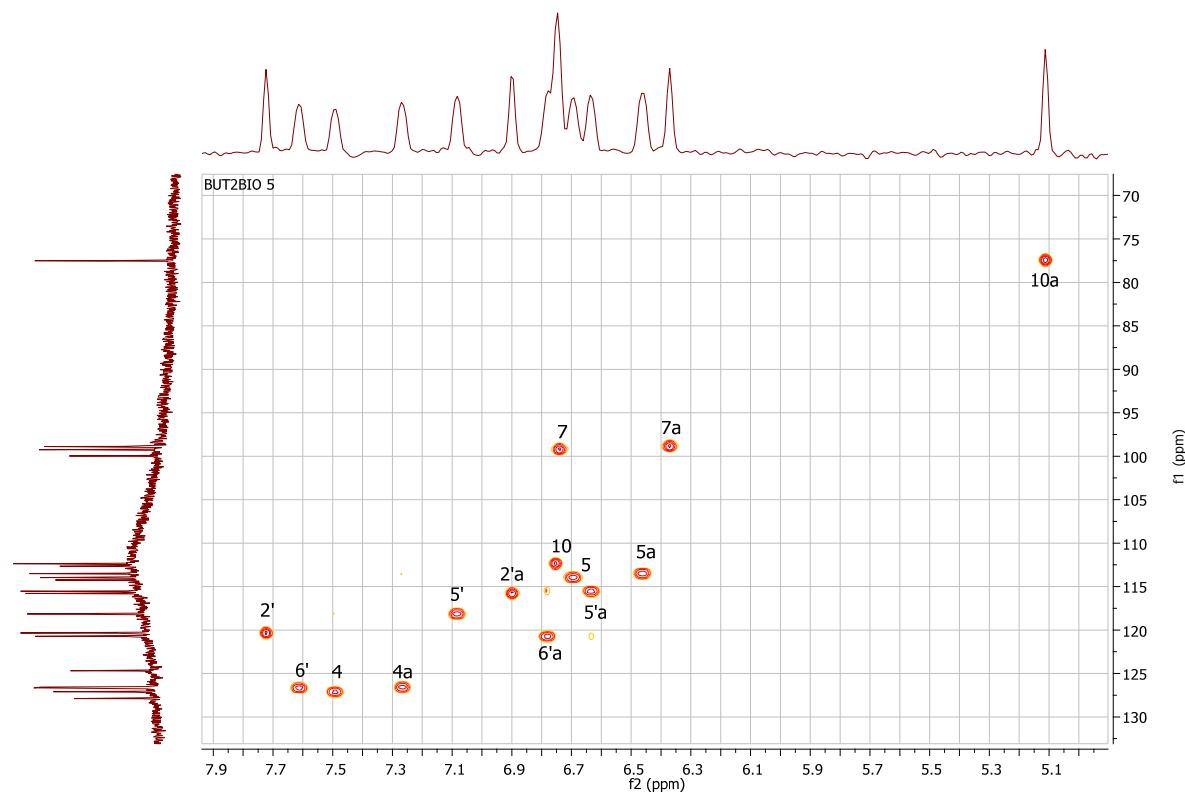


Figure S20. HSQC spectrum of the dimer **3**.

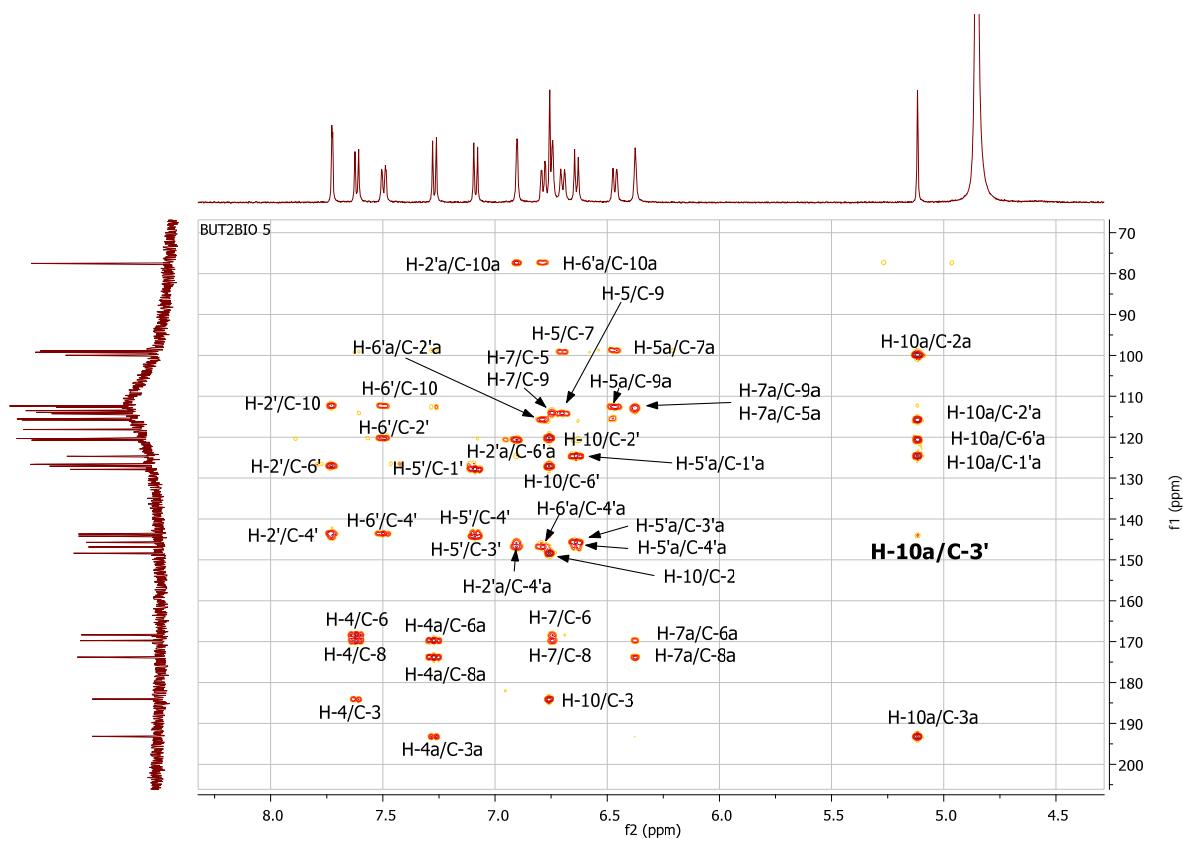


Figure S21. HMBC spectrum of the dimer **3**.

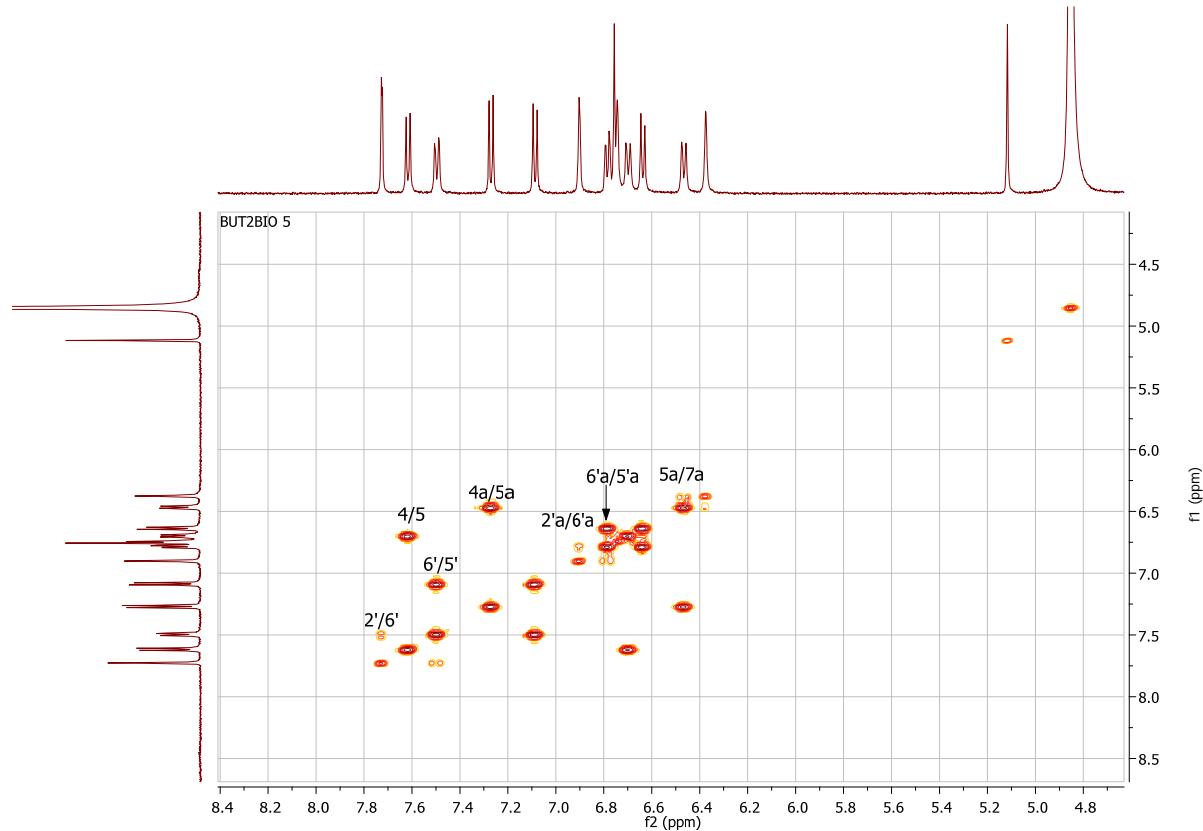


Figure S22. COSY spectrum of the dimer **3**.

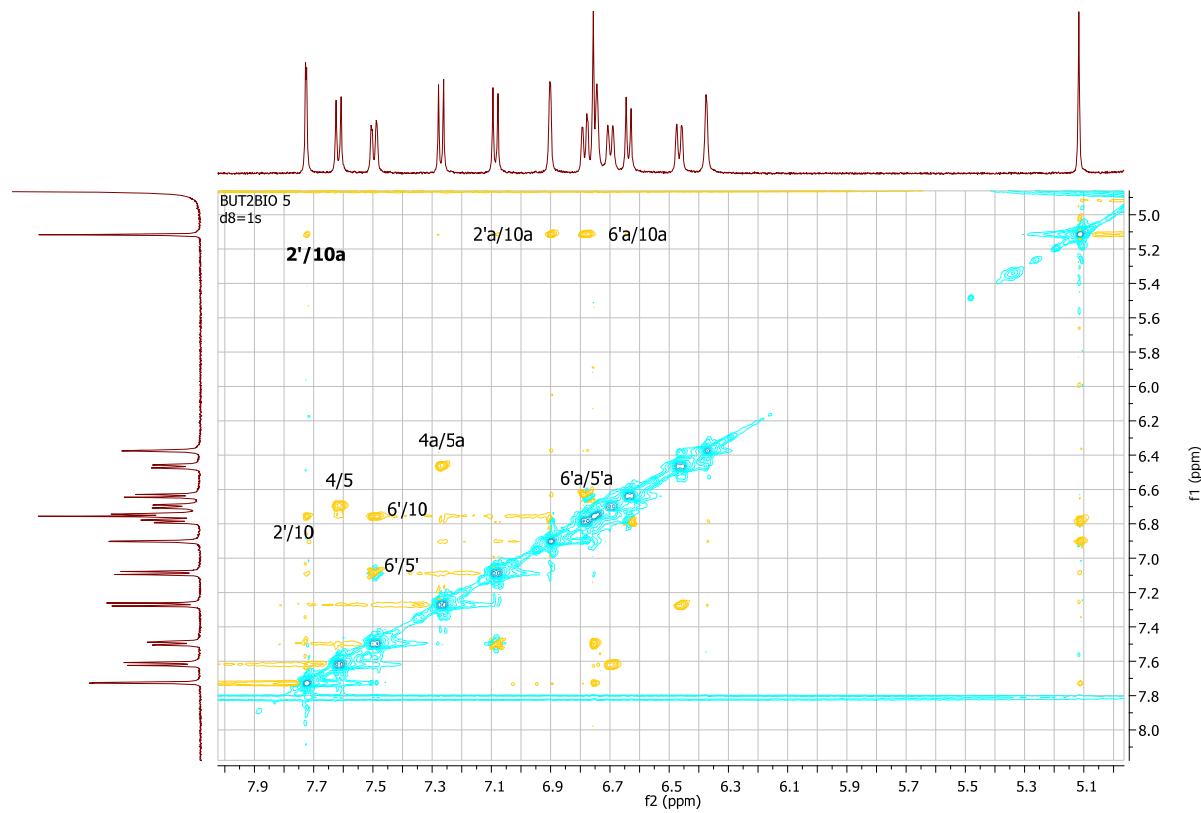


Figure S23. NOESY spectrum of the dimer **3**.

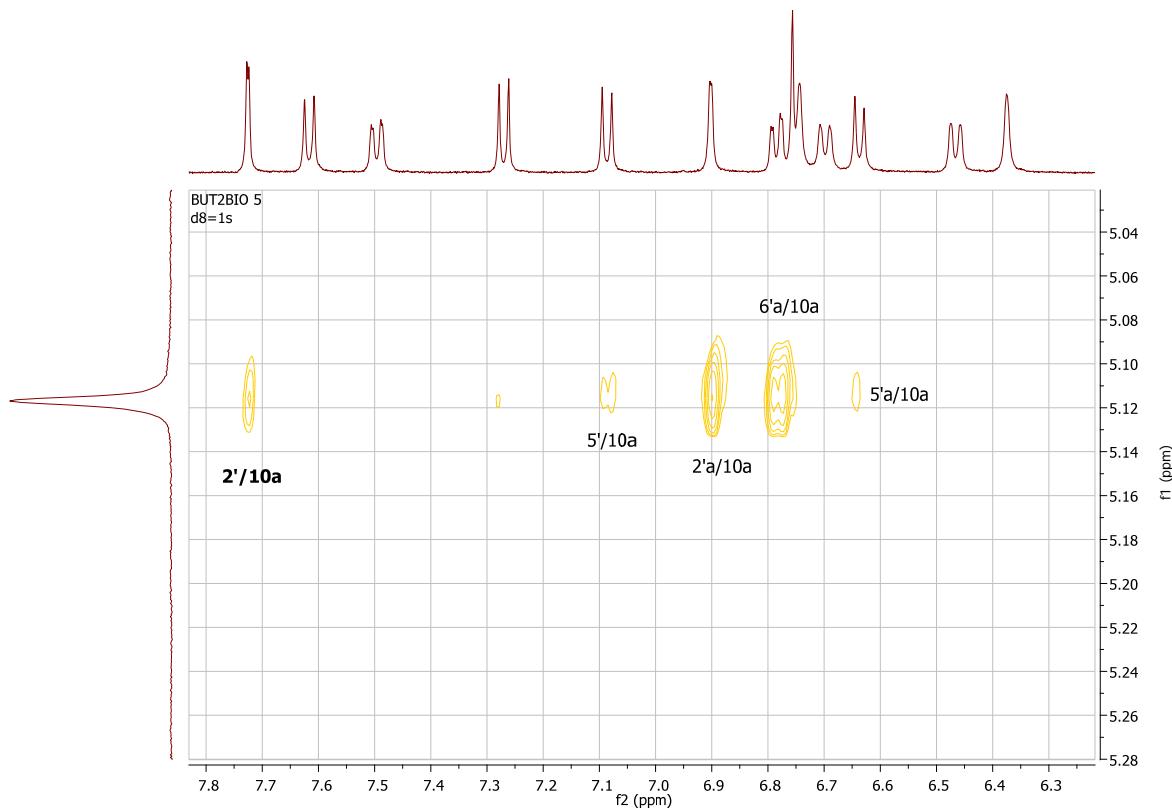


Figure S24. NOESY correlations of proton H-10a of the dimer **3**.

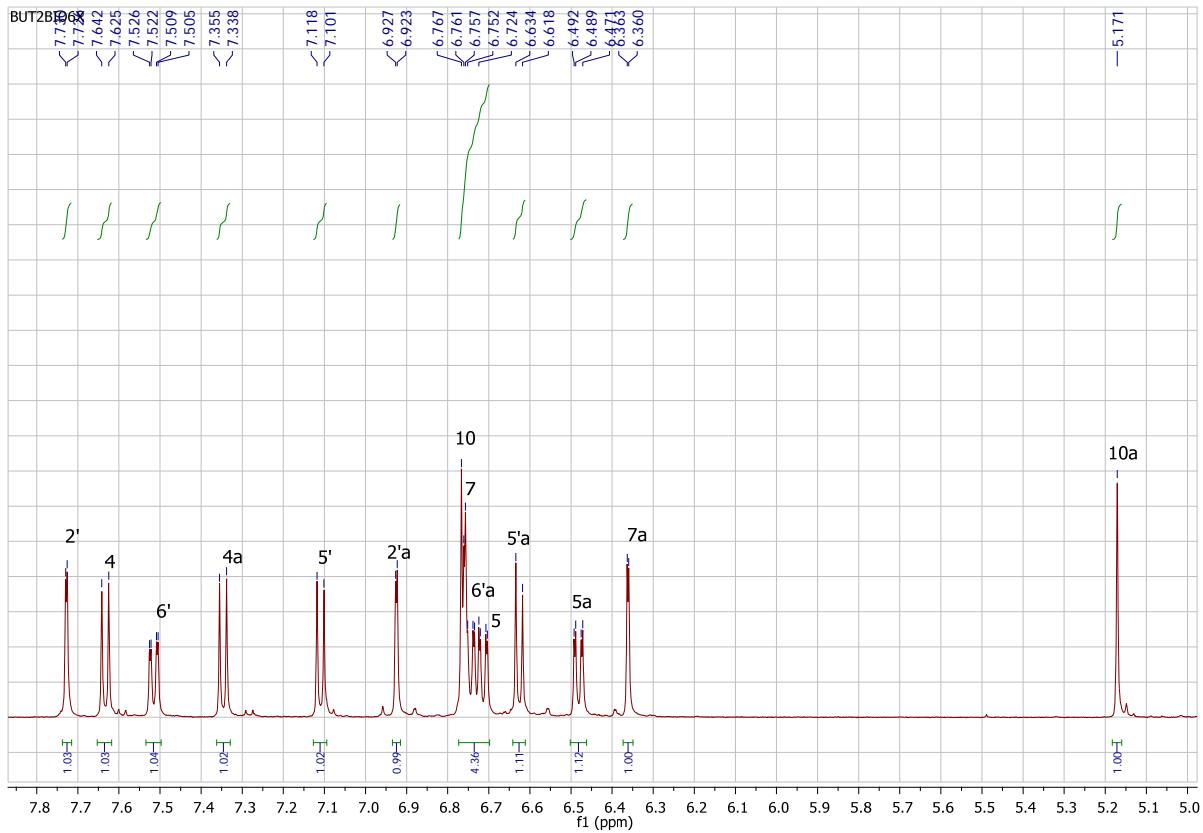


Figure S25.  $^1\text{H}$  NMR spectrum of the dimer **4**.

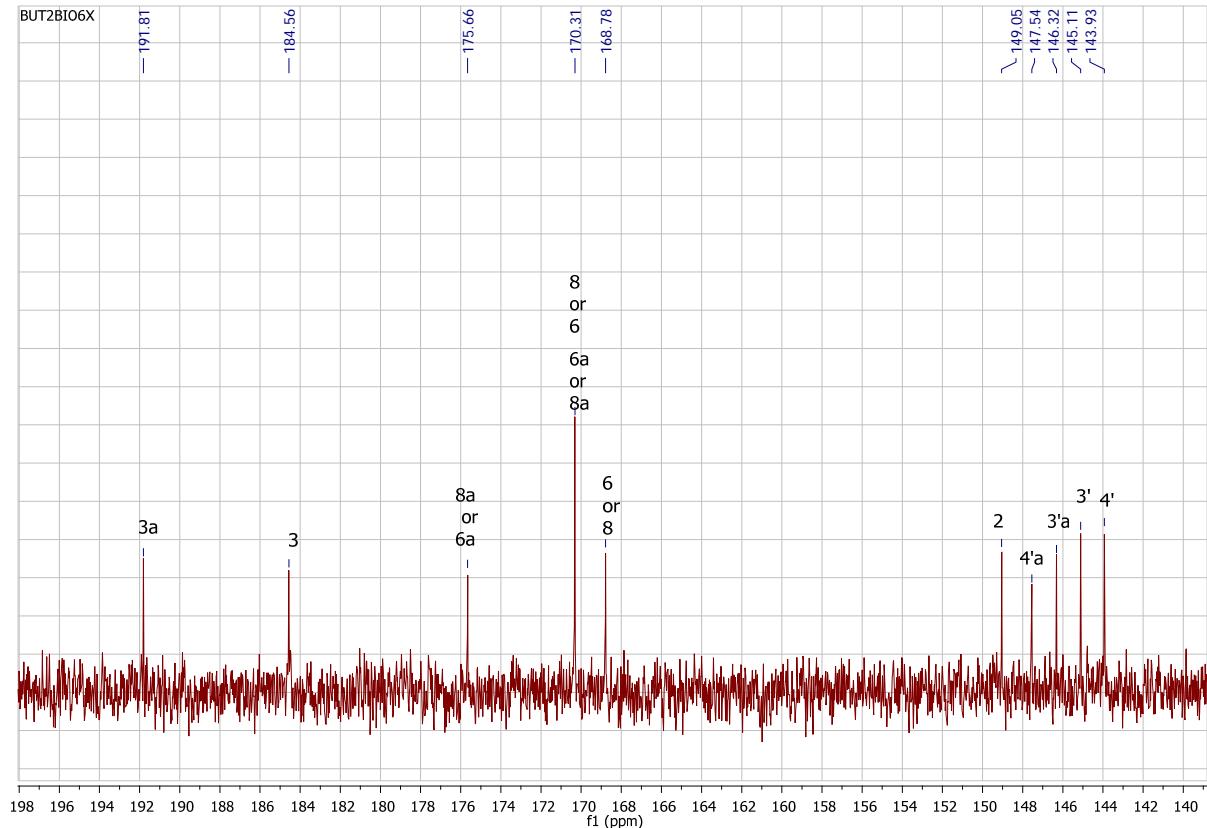


Figure S26.  $^{13}\text{C}$  NMR spectrum of the dimer **4** (139-198 ppm).

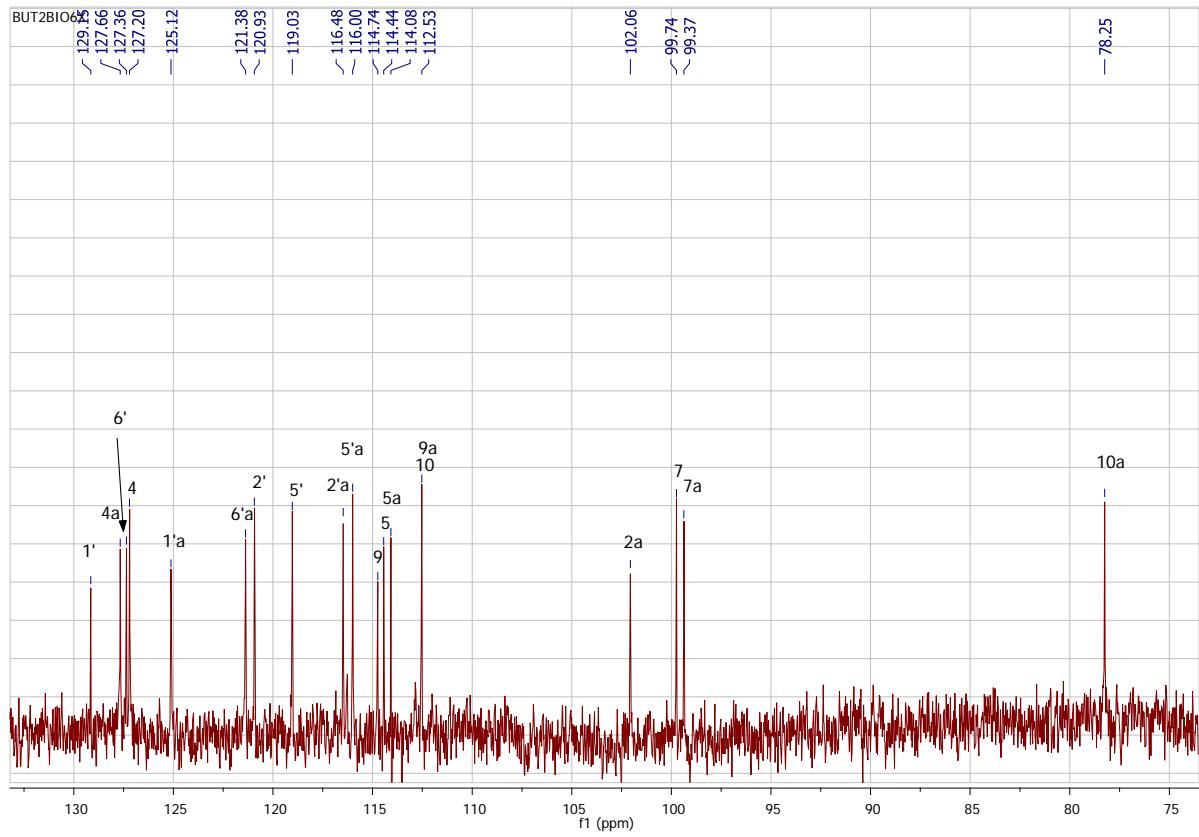


Figure S27. <sup>13</sup>C NMR spectrum of the dimer **4** (75-133 ppm).

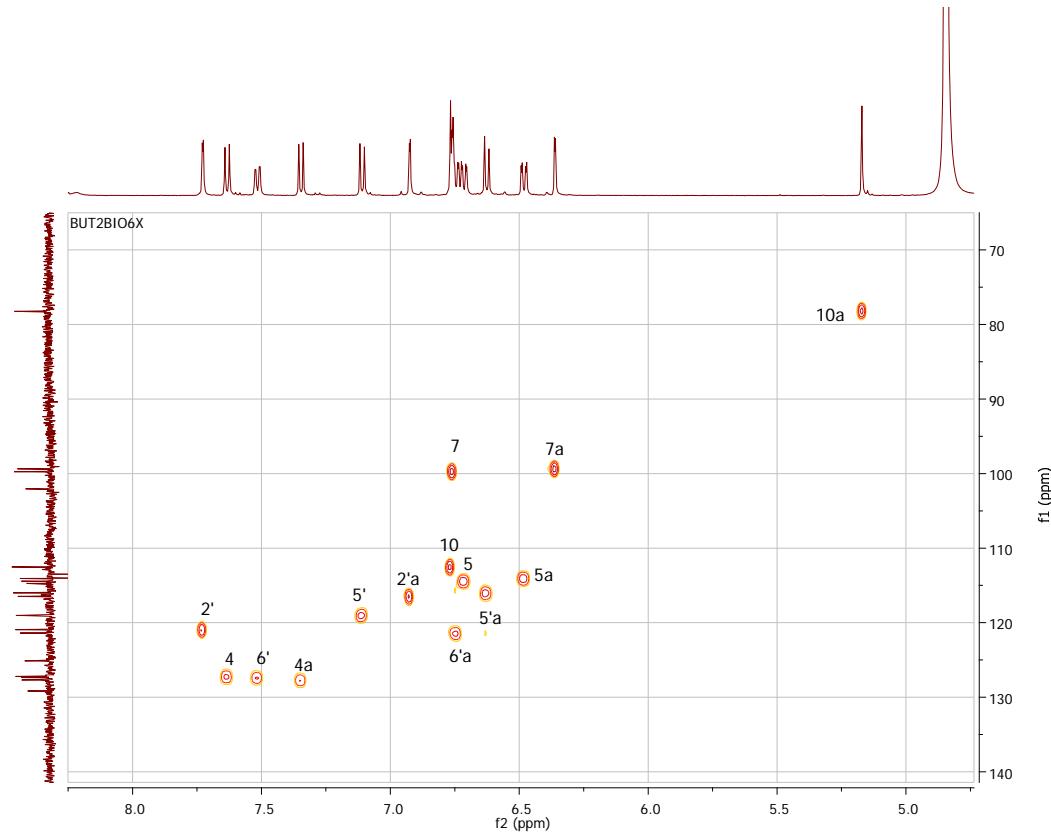


Figure S28. HSQC spectrum of the dimer **4**.

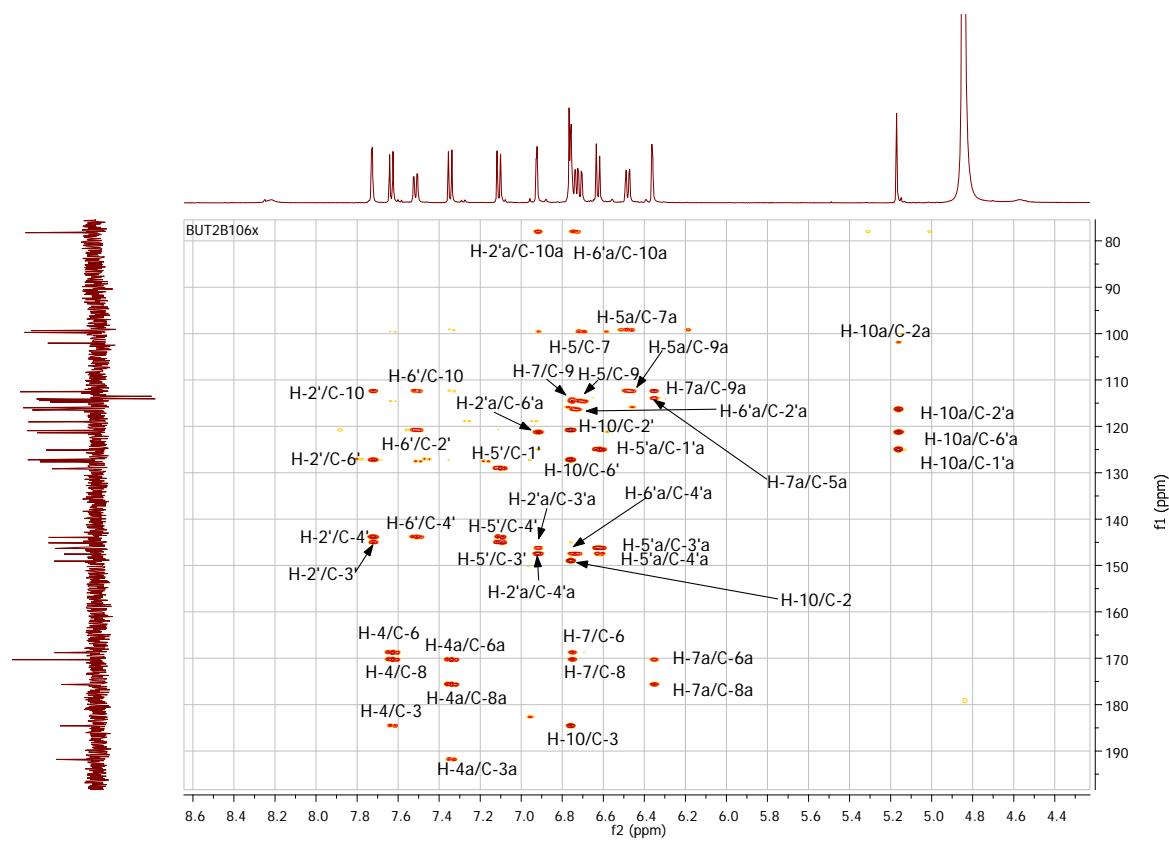


Figure S29. HMBC spectrum of the dimer 4.

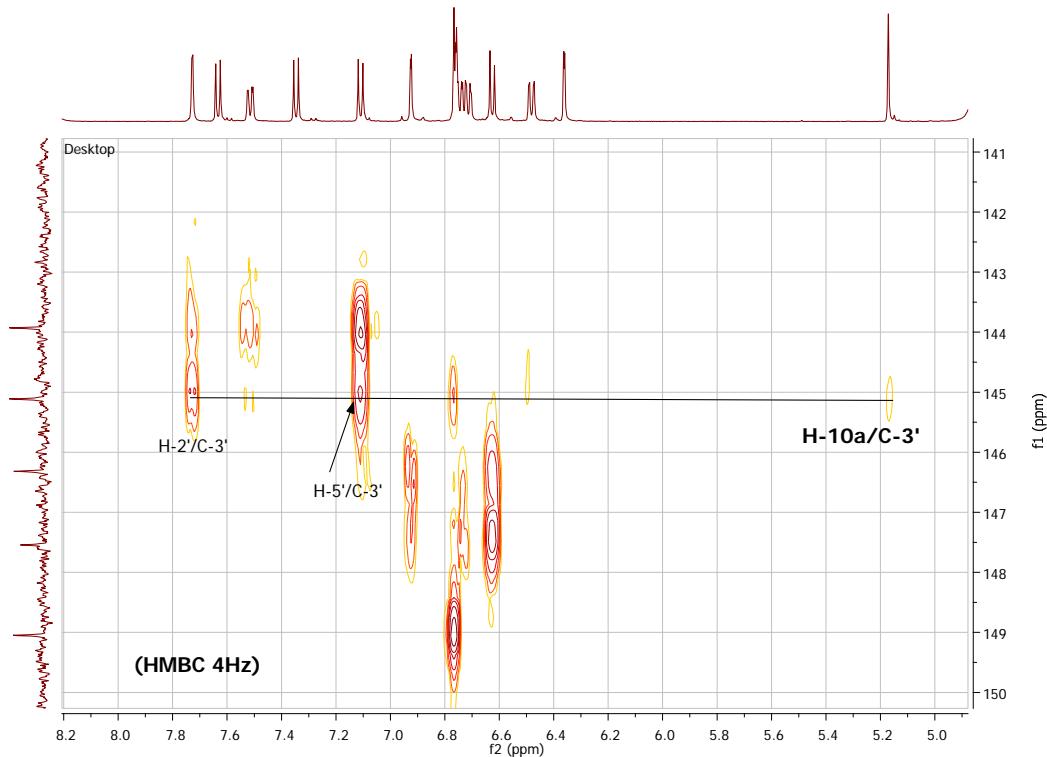


Figure S30. Key correlation from the HMBC spectrum of the dimer 4.

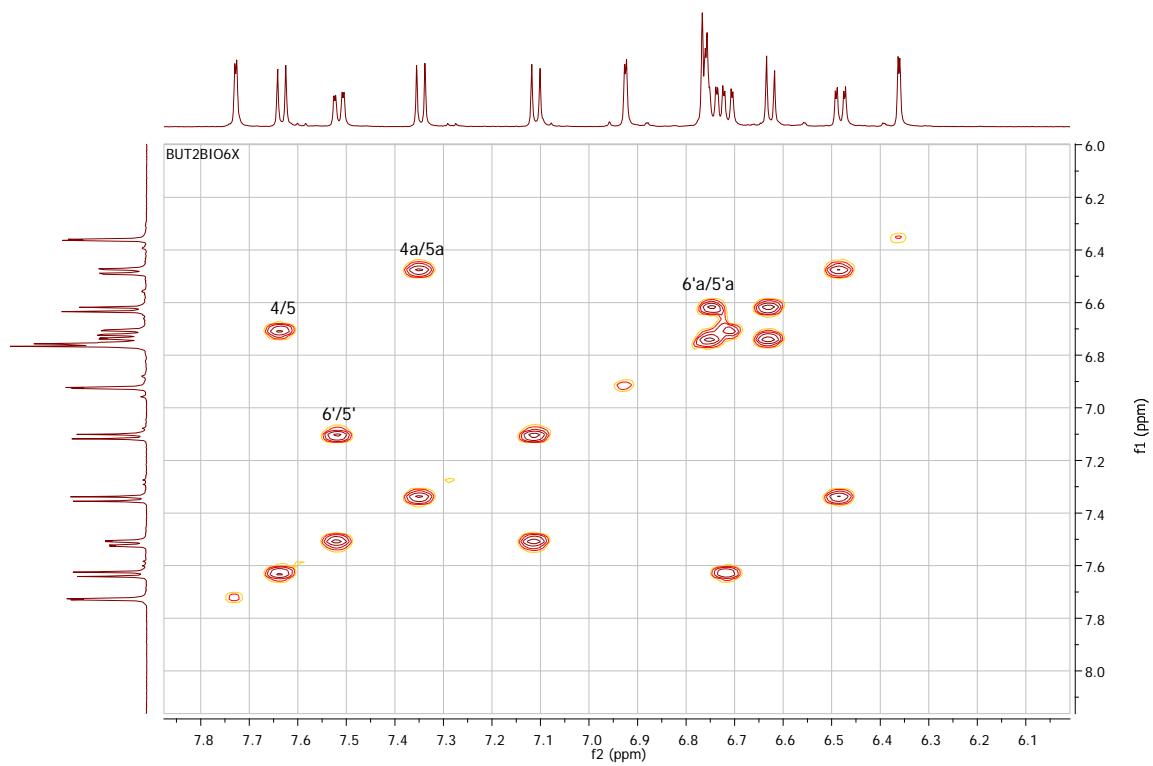


Figure S31. COSY spectrum of the dimer 4.

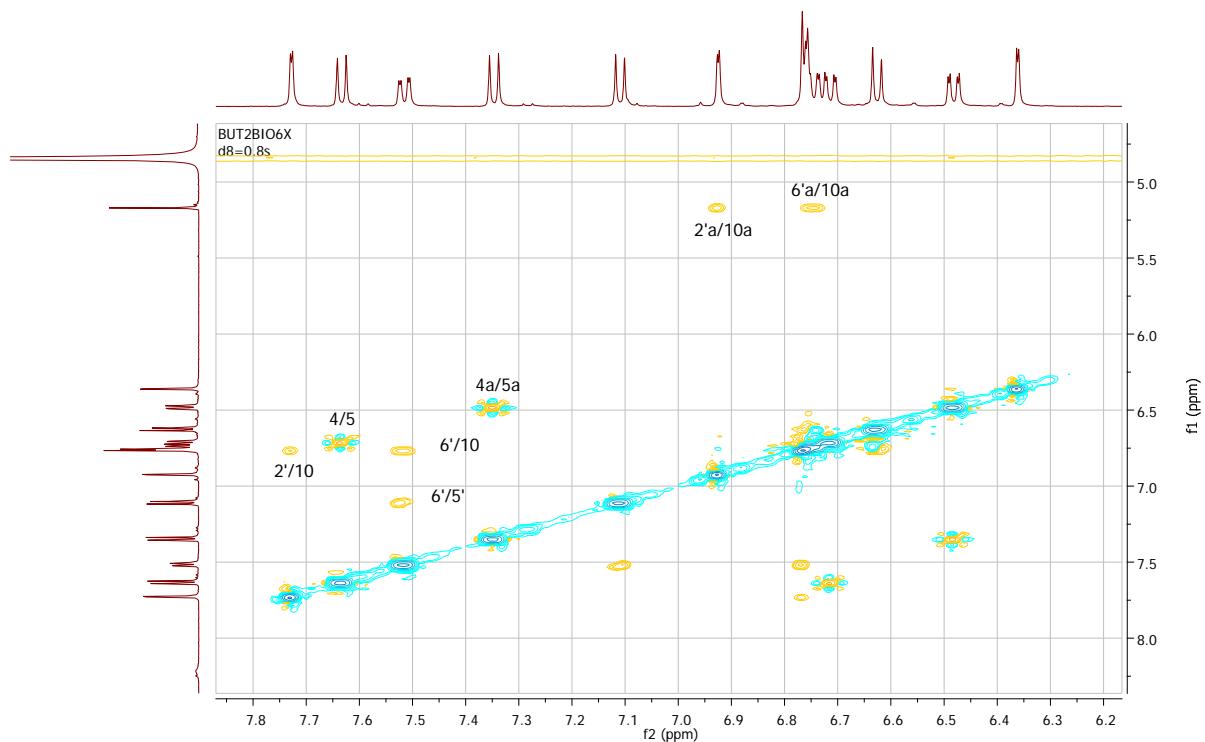


Figure S32. NOESY spectrum of the dimer 4.

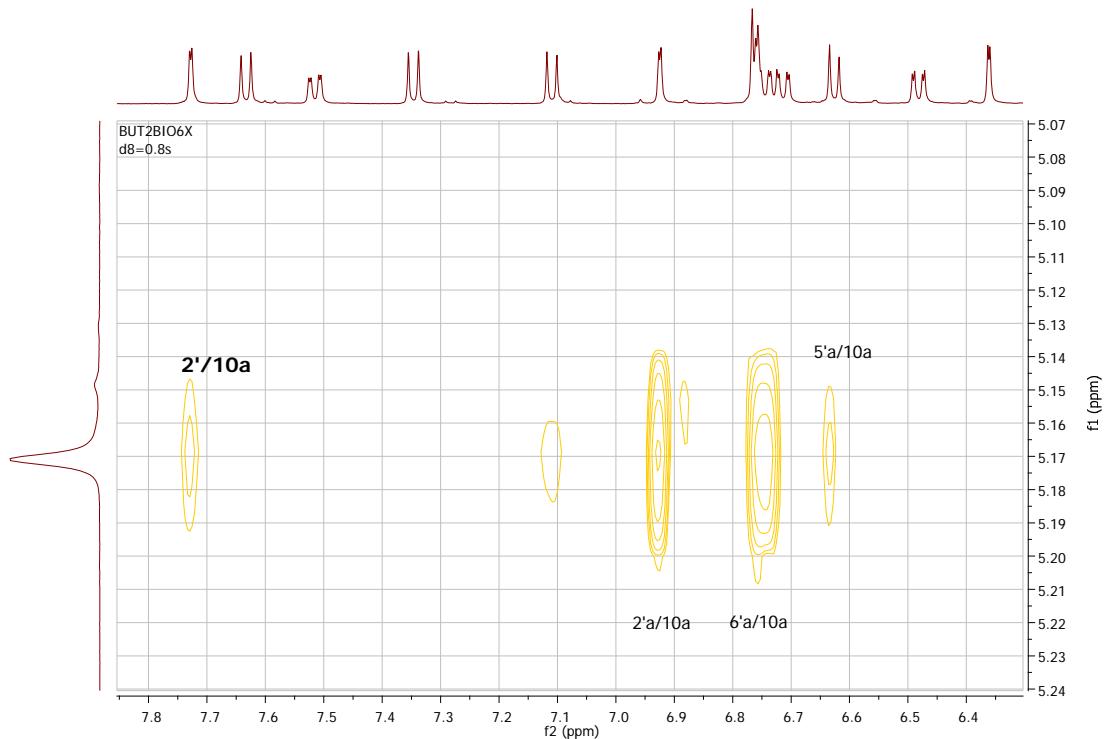


Figure S33. Important NOE correlations of proton H-10a of the dimer **4**.

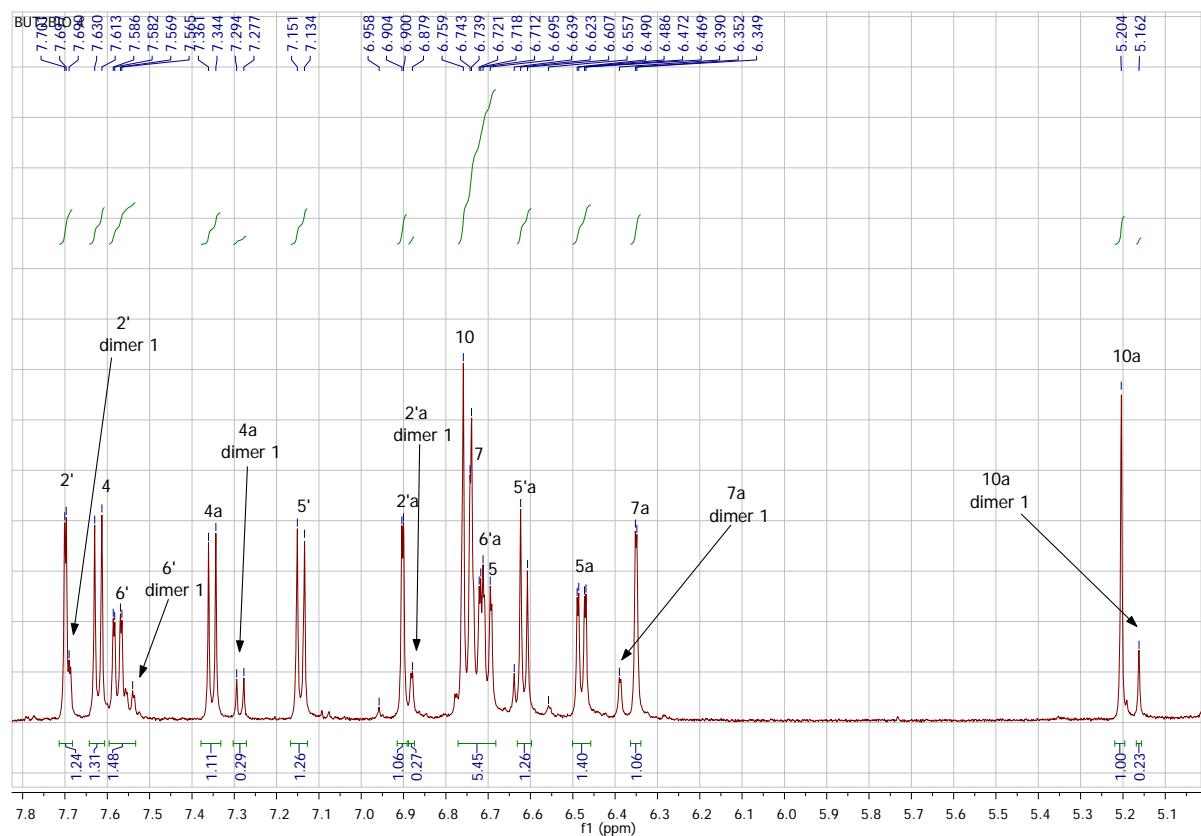


Figure S34.  $^1\text{H}$  NMR spectrum of the dimer **2**.