

**Supporting Information to:**

# Synthesis of Aminoglycoside-2'-O-Methyl Oligoribonucleotide Fusions

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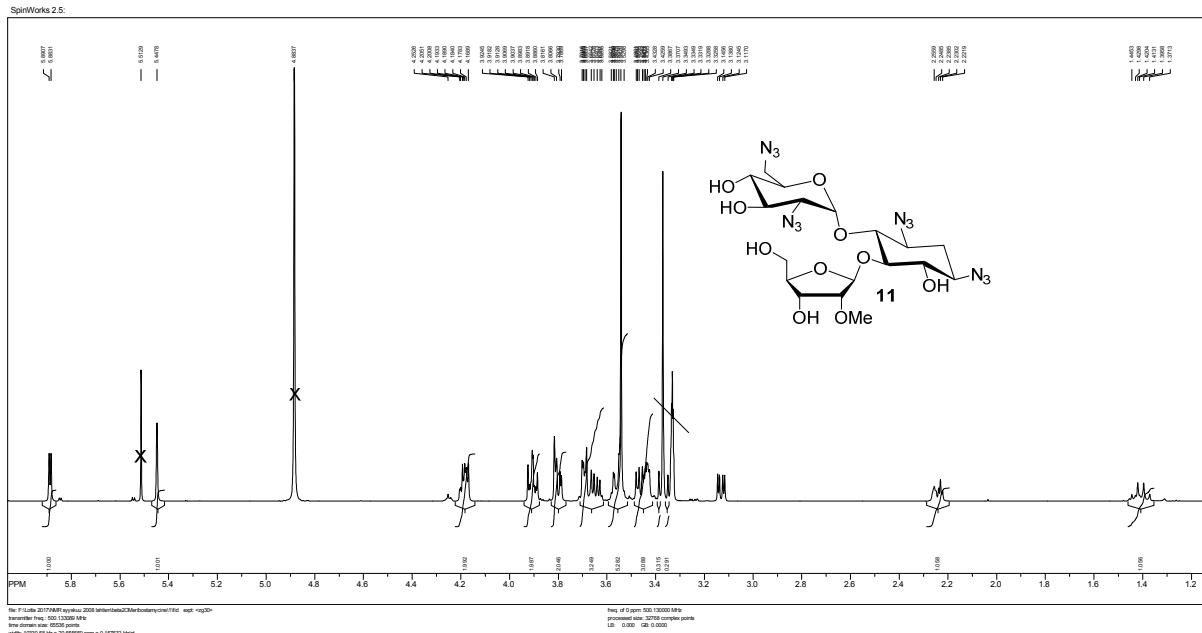
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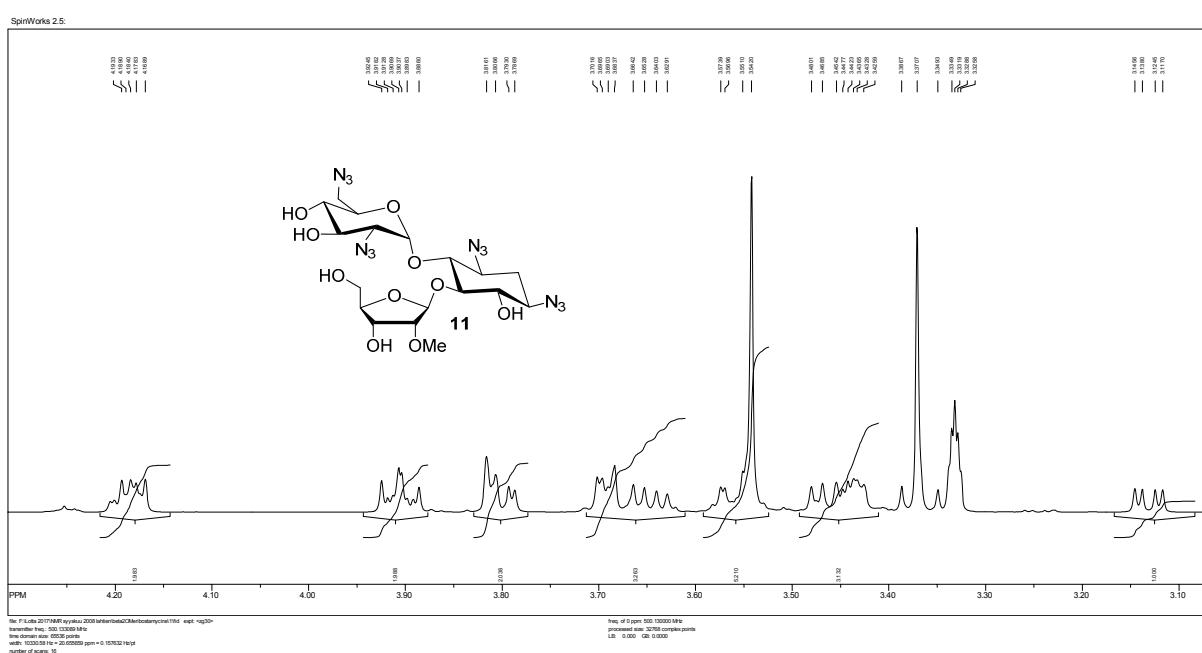
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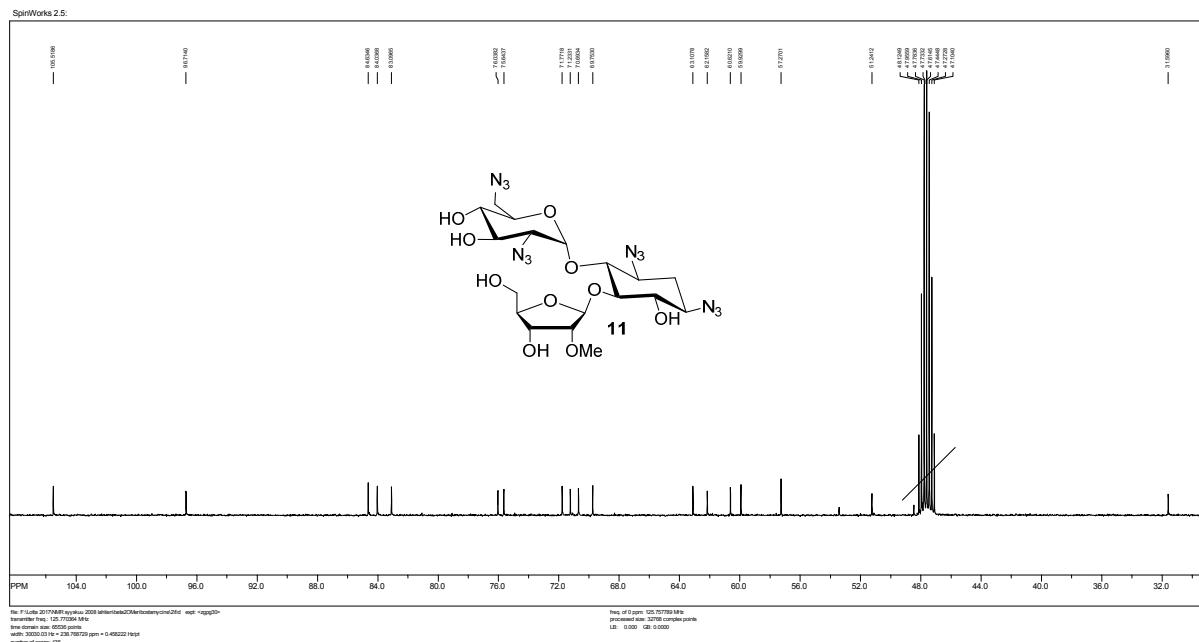
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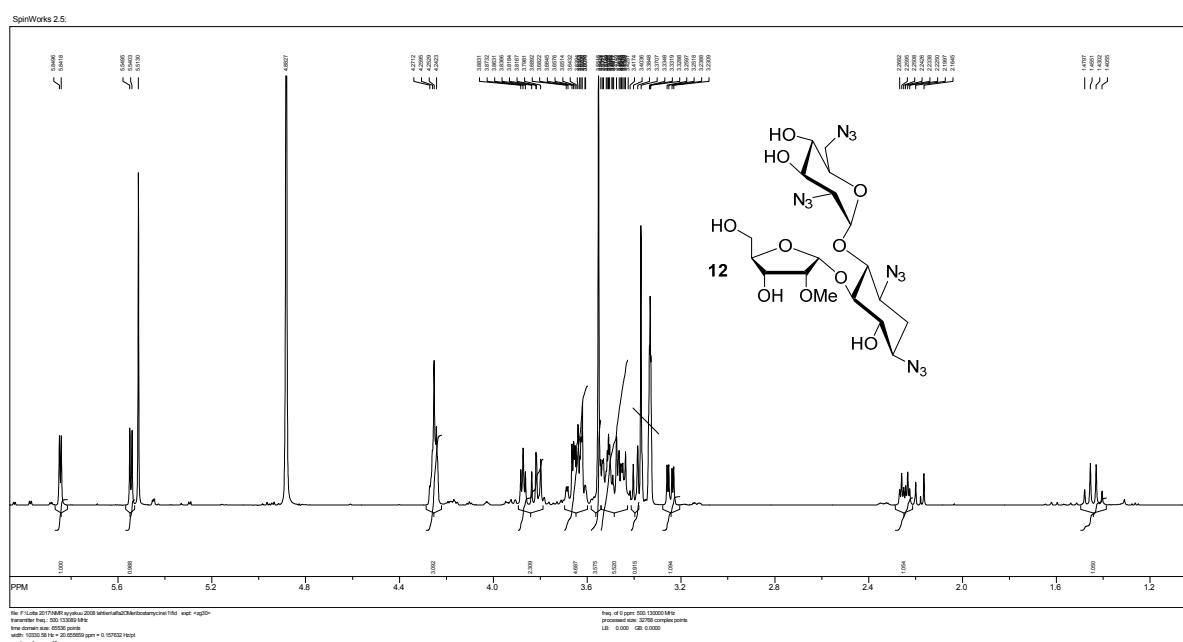
**Figure S1.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **11**.



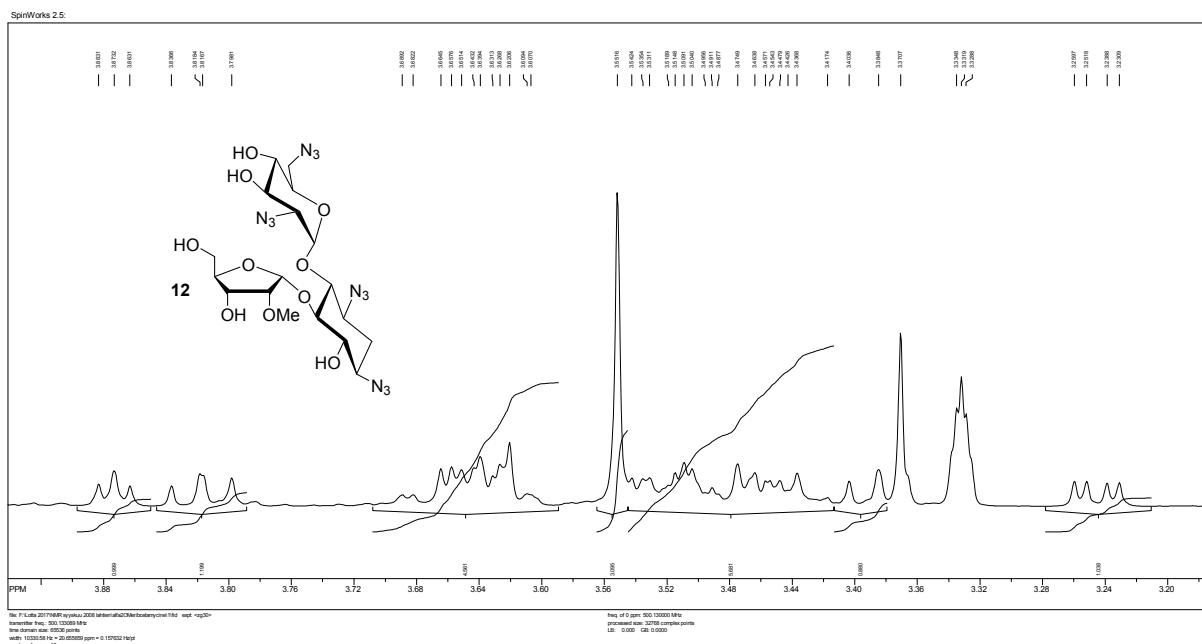
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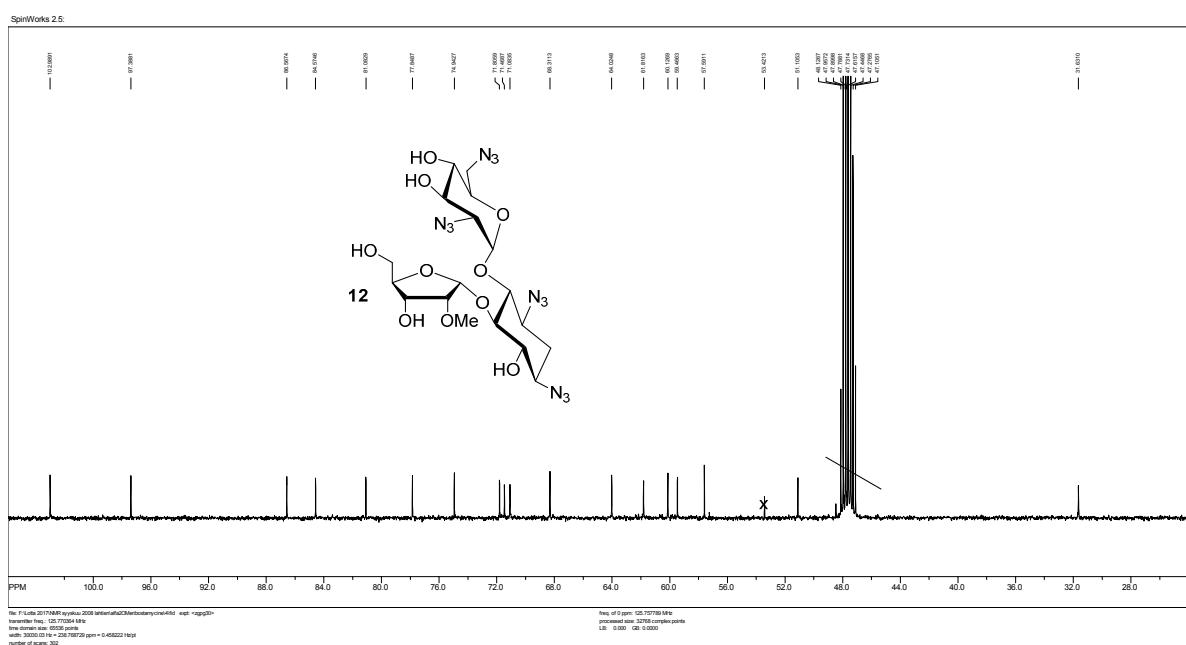
**Figure S3.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **11**.



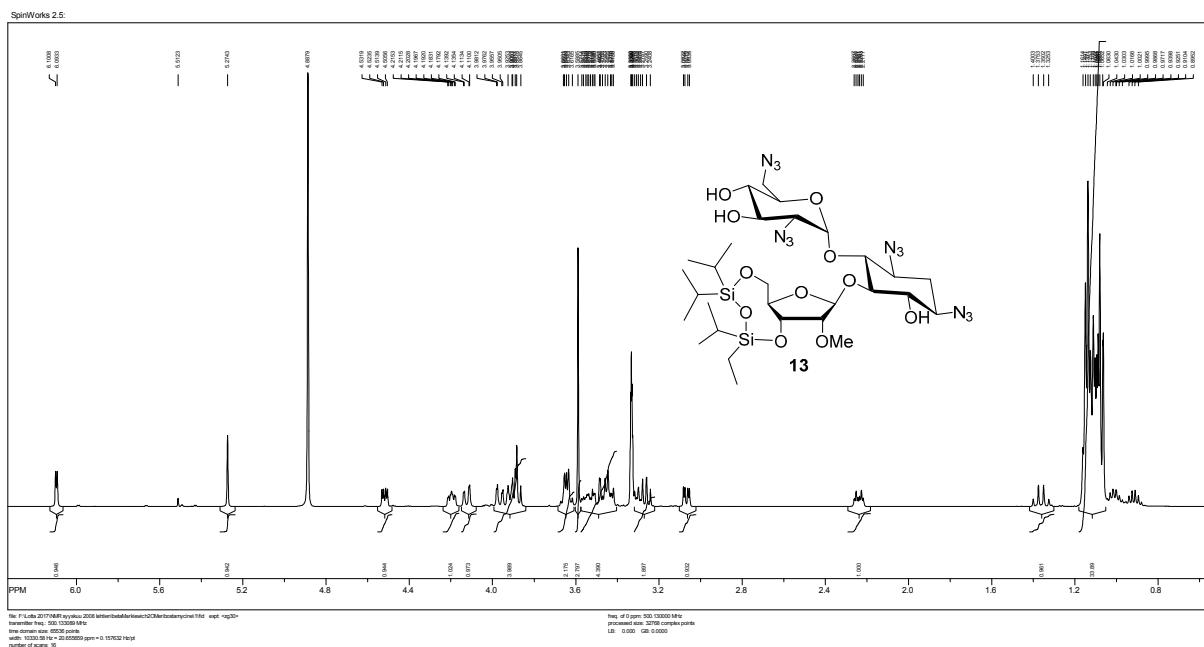
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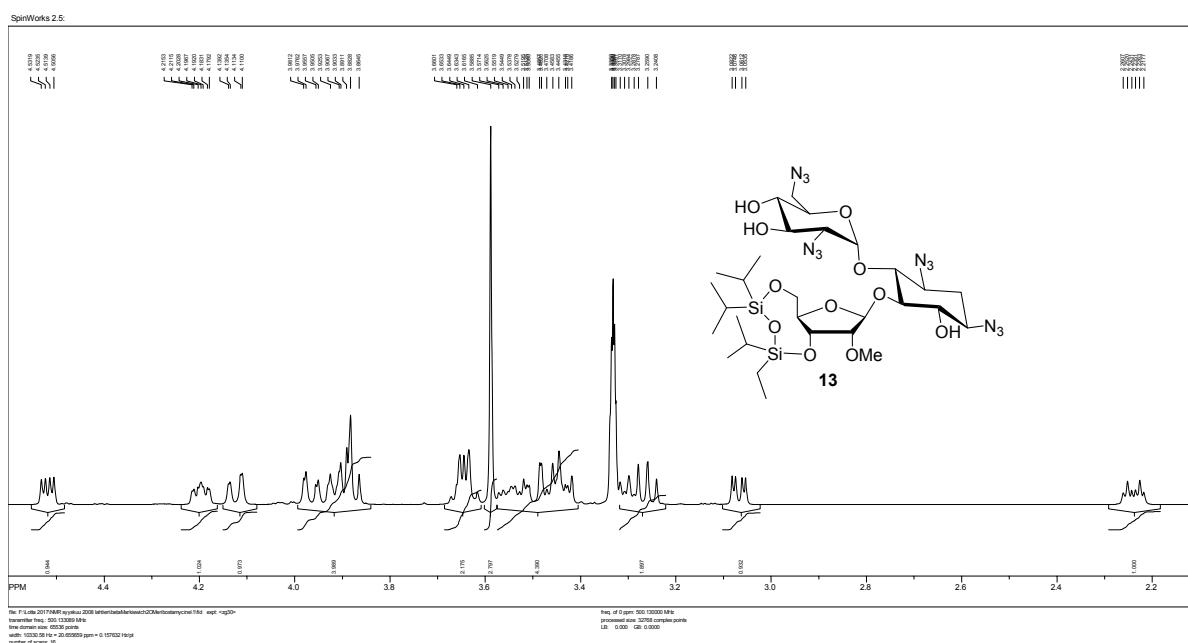
**Figure S5.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **12**.



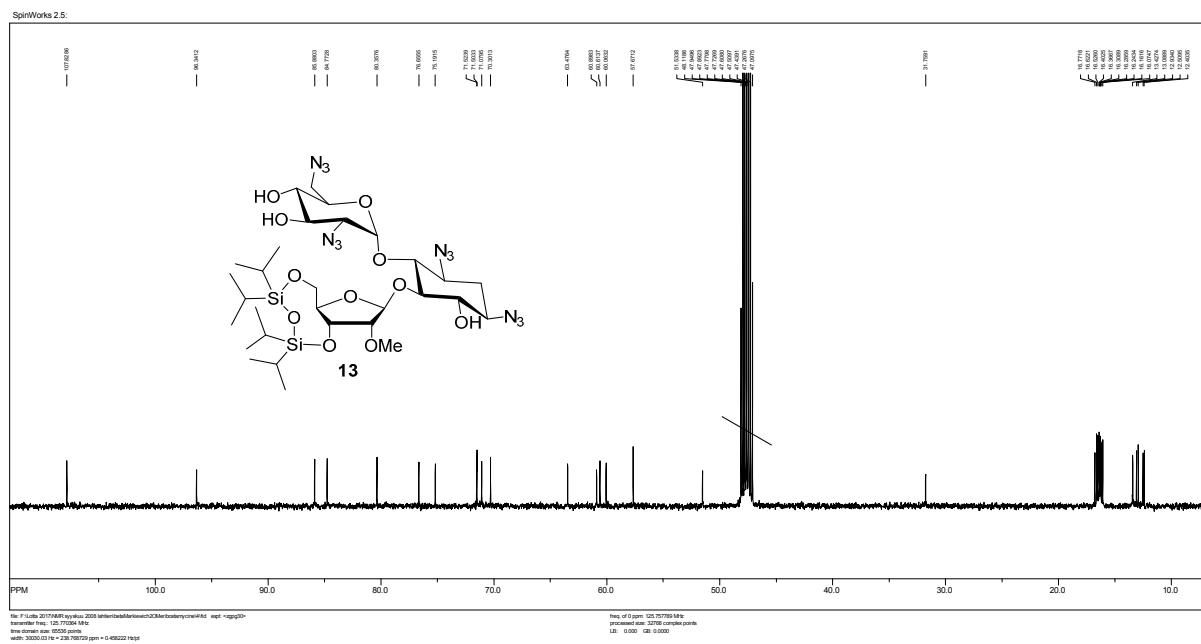
**Figure S6.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **12**.



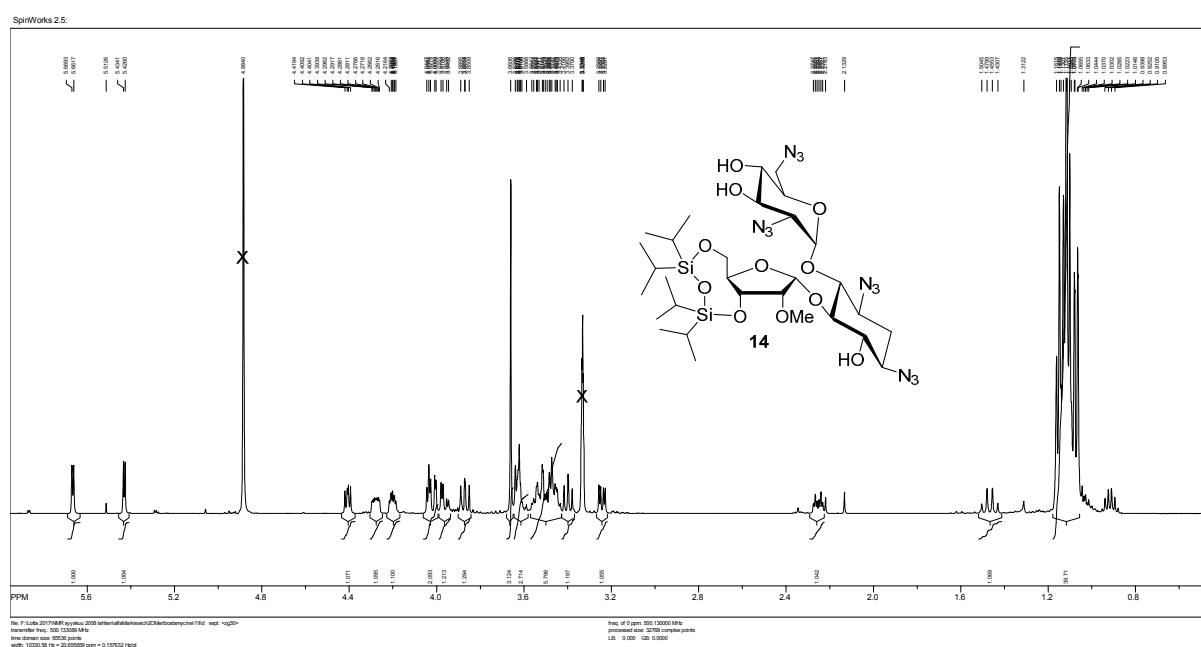
**Figure S7.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **13**.



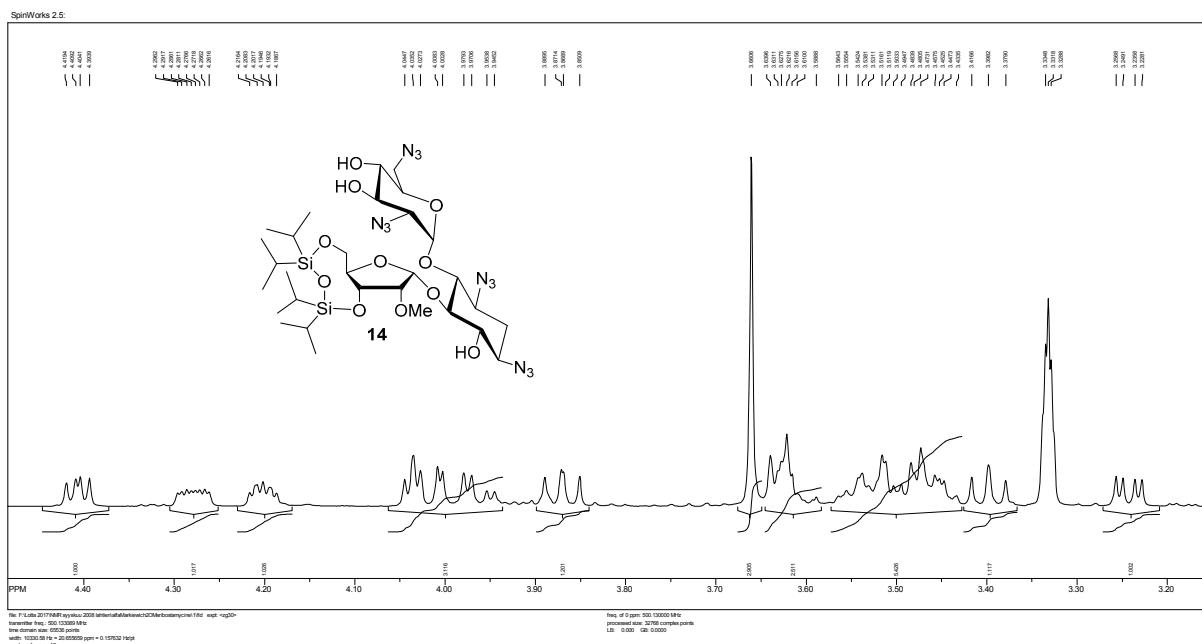
**Figure S8.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **13**.



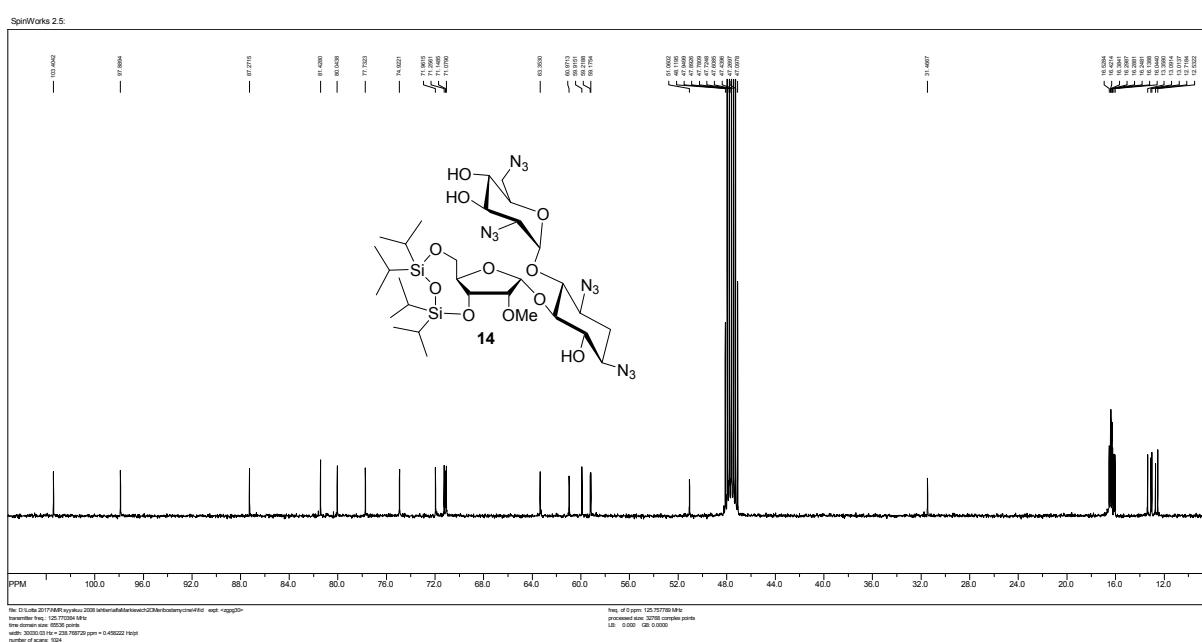
**Figure S9.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **13**.



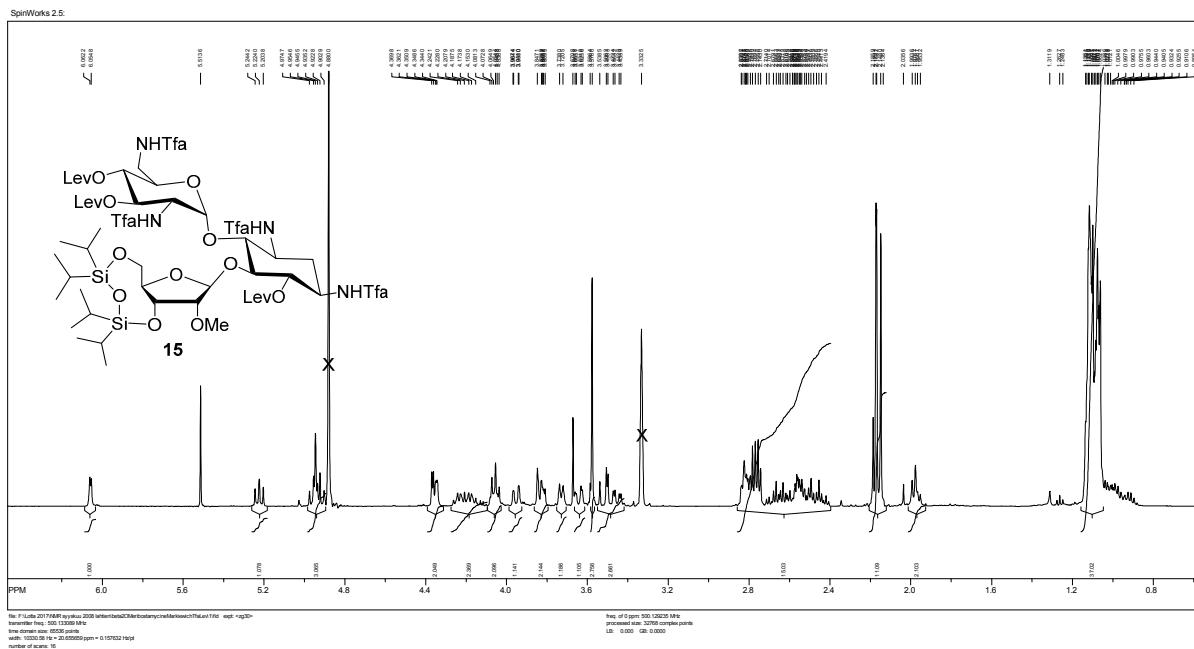
**Figure S10.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **14**.



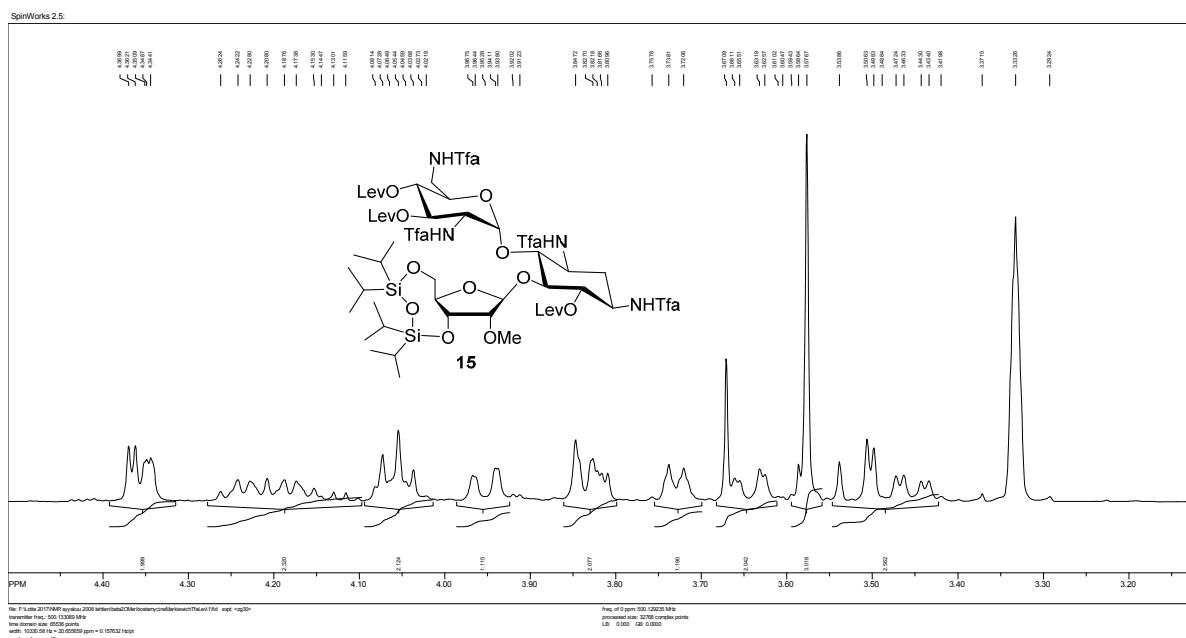
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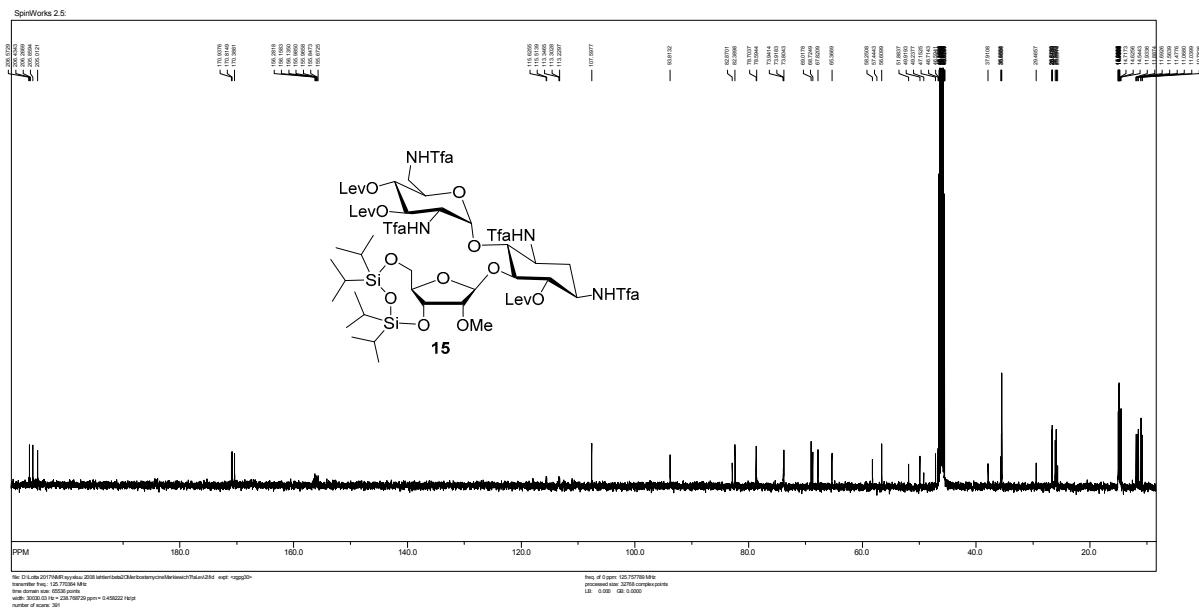
**Figure S12.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **14**.



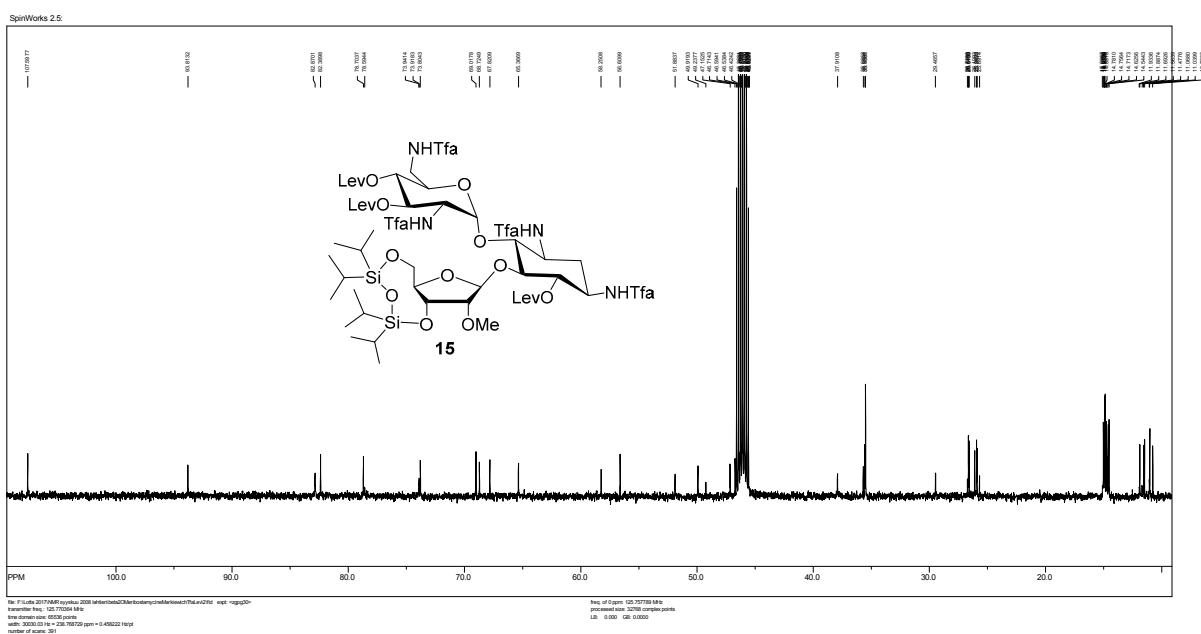
**Figure S13.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **15**.



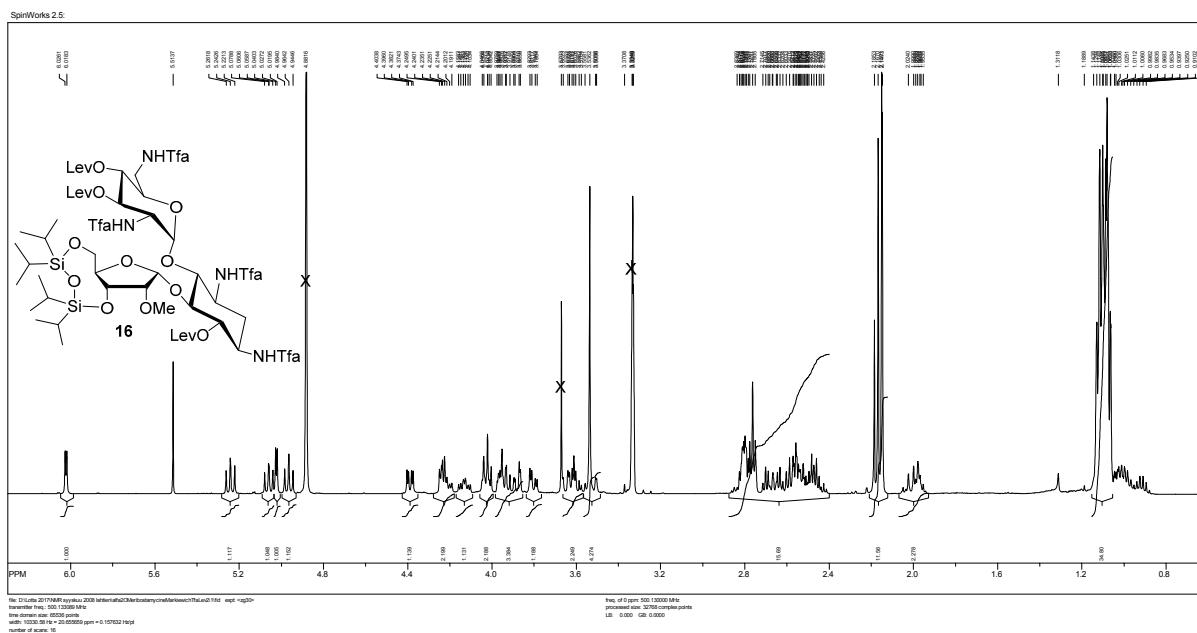
**Figure S14.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **15**.



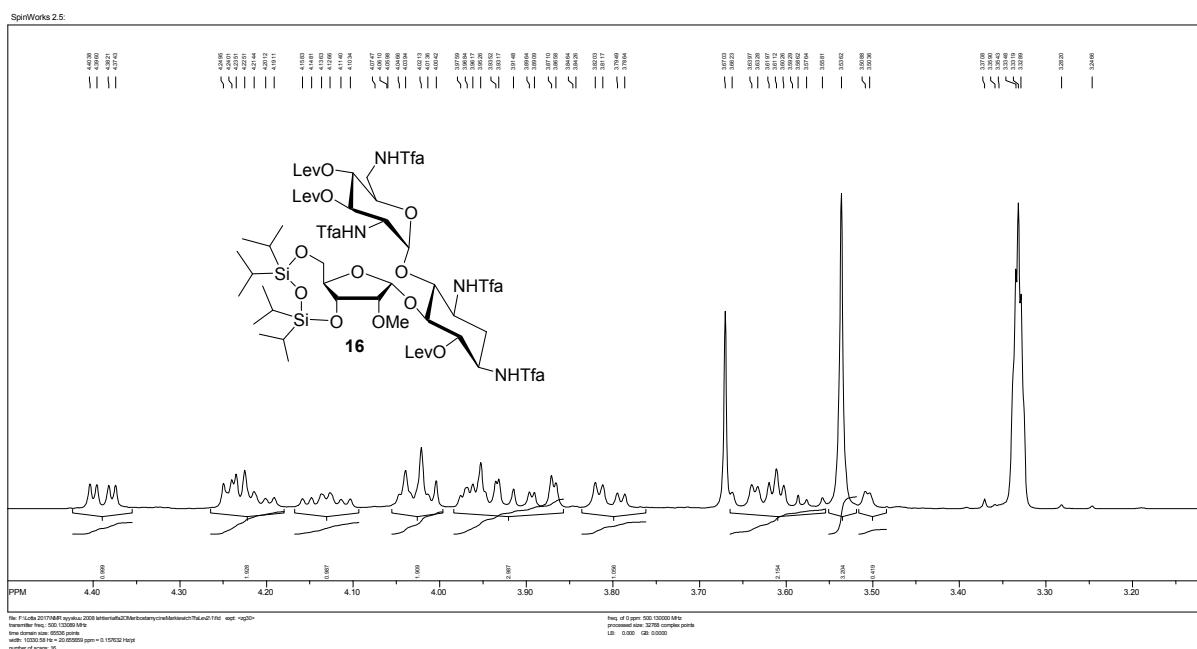
**Figure S15.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **15**.



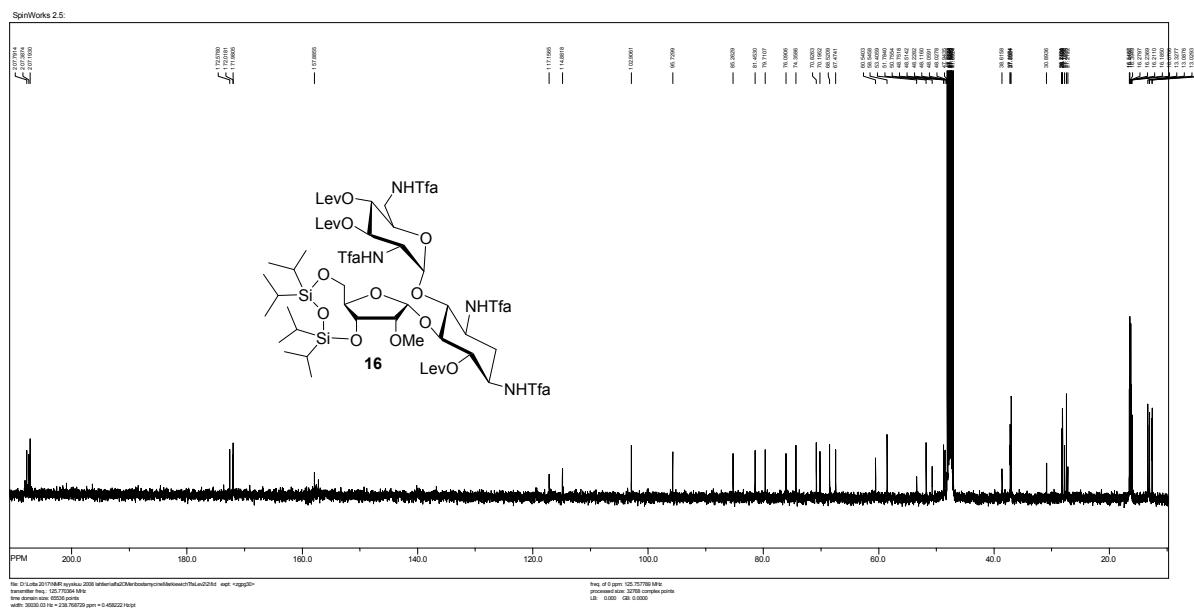
**Figure S16.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **15**.



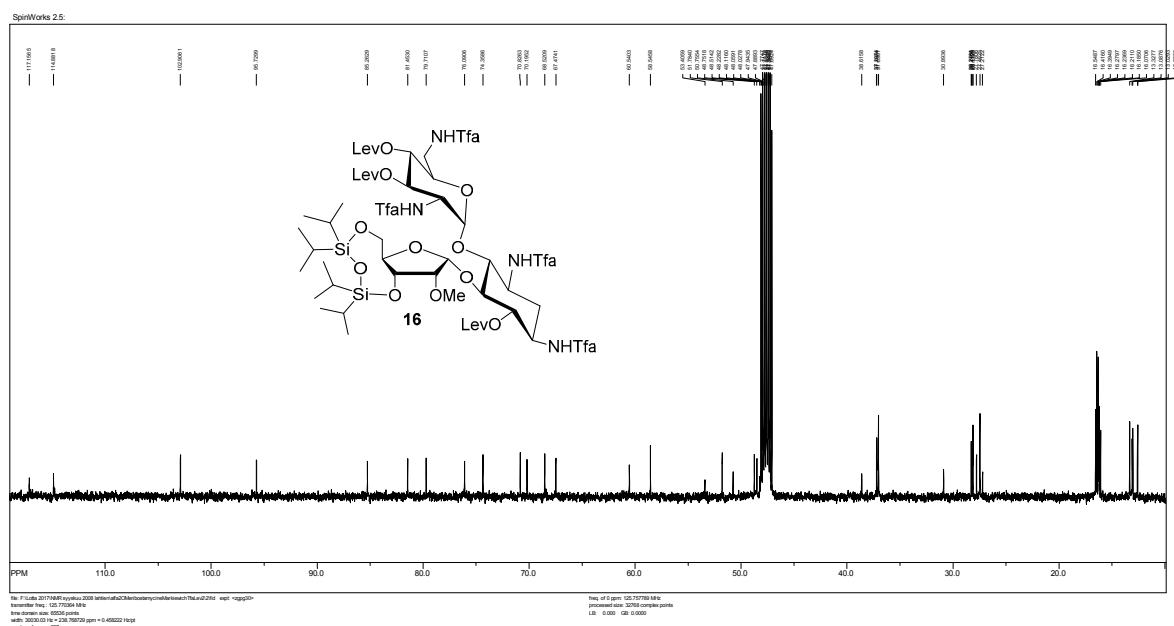
**Figure S17.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **16**.



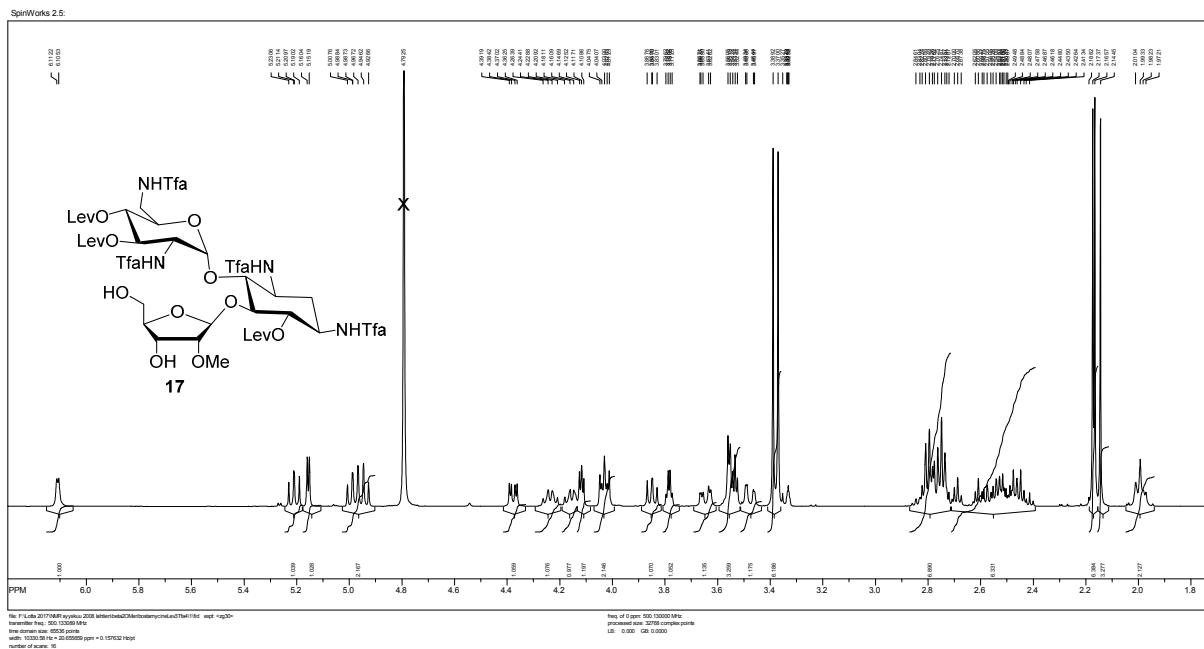
**Figure S18.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **16**.



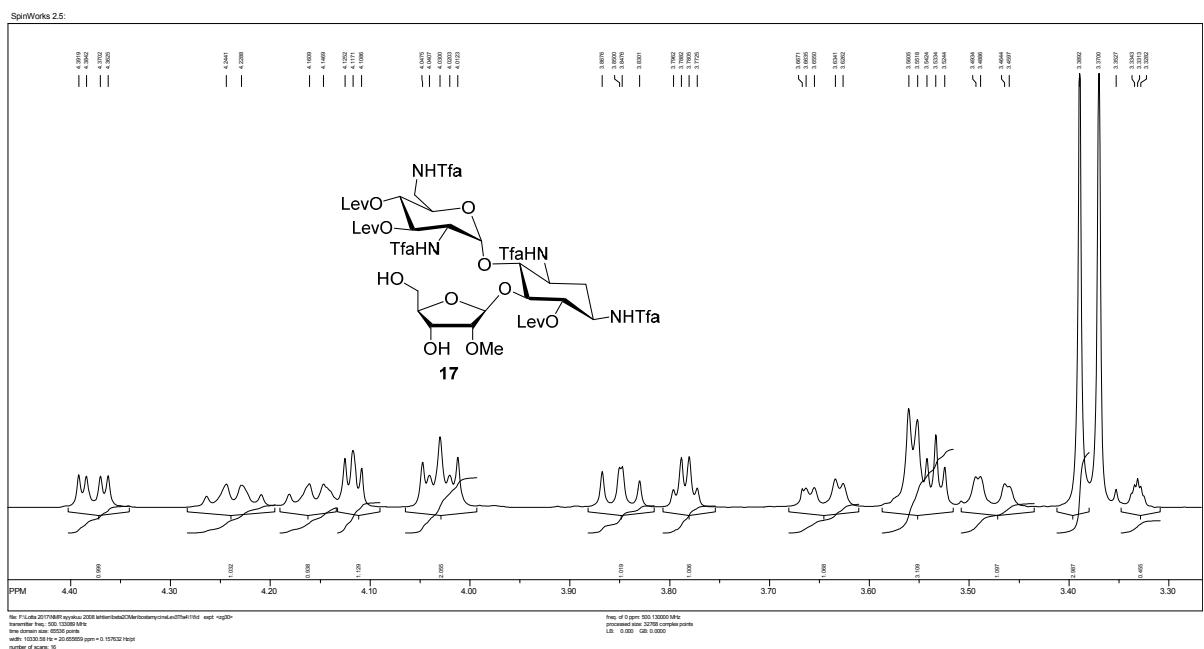
**Figure S19.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **16**.



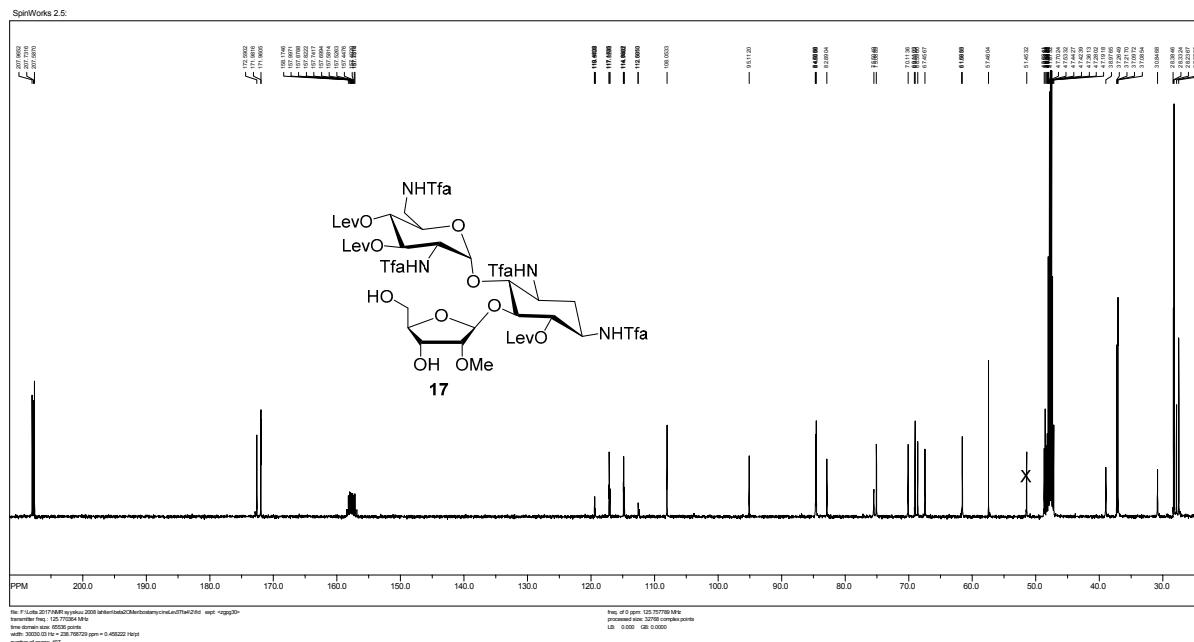
**Figure S20.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **16**.



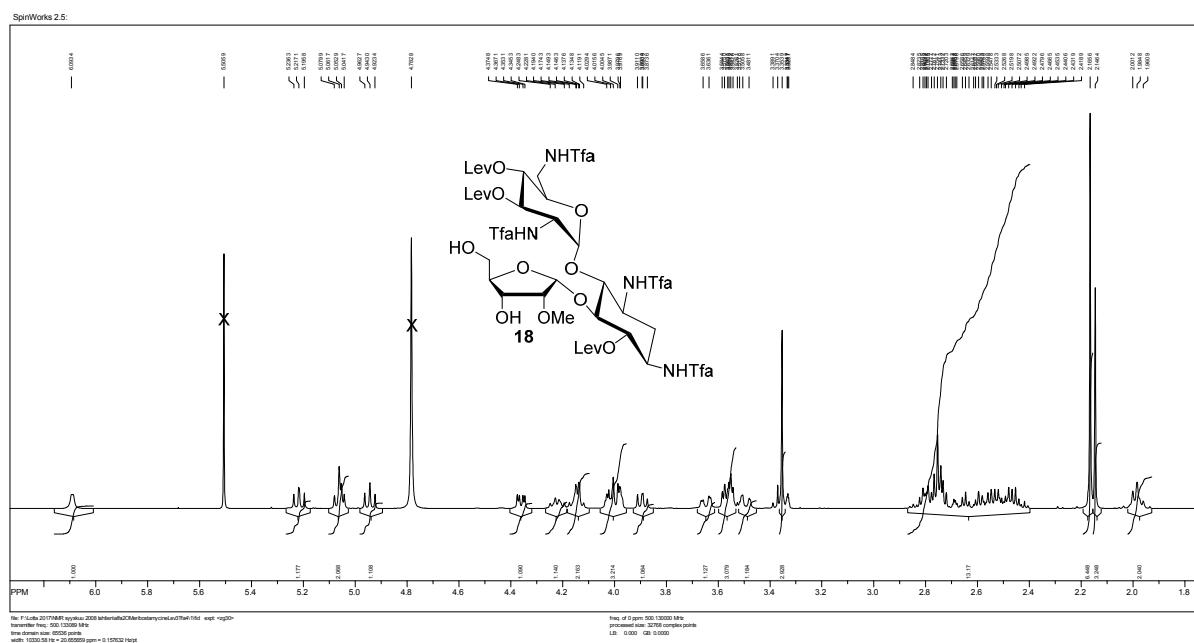
**Figure S21.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **17**.



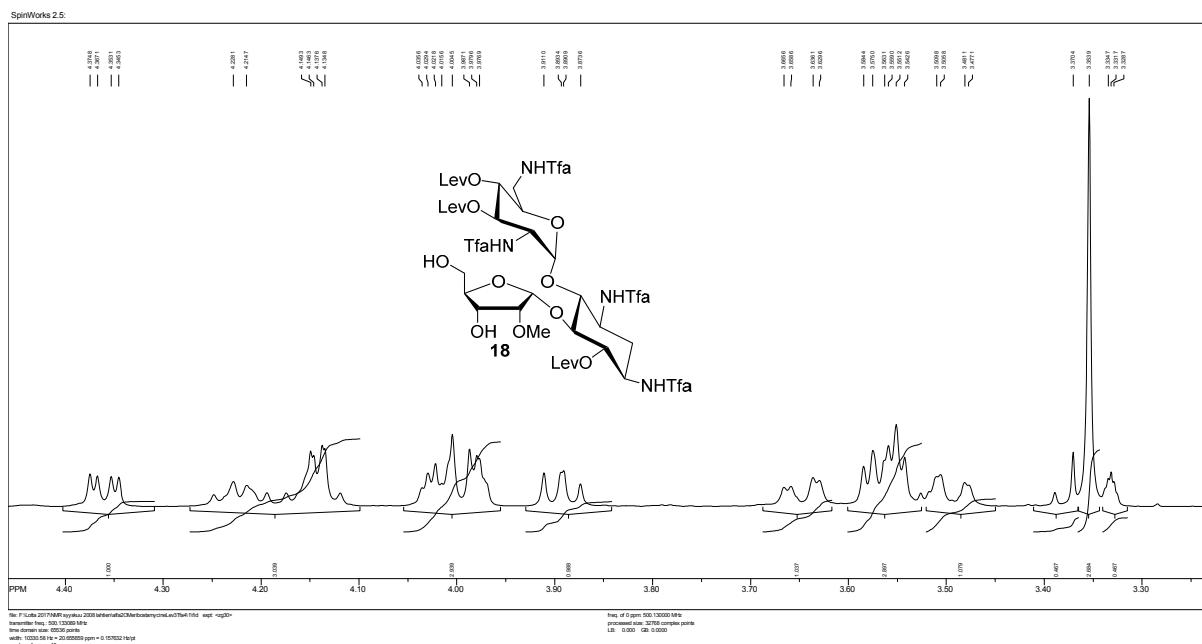
**Figure S22.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **17**.



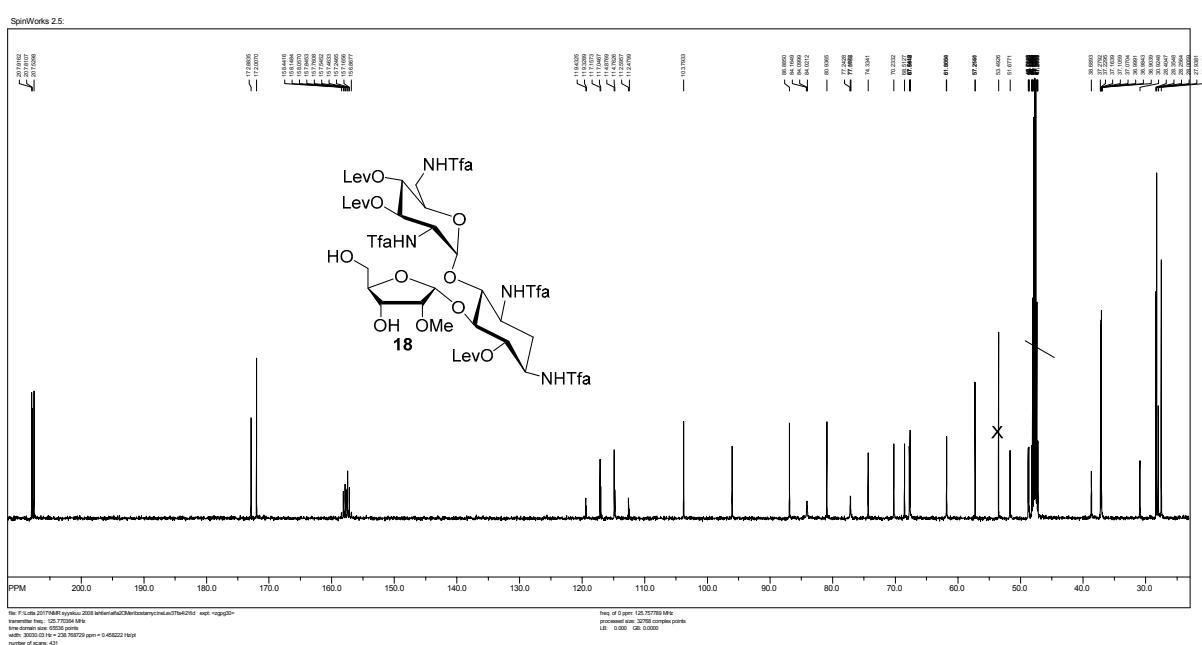
**Figure S23.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **17**.



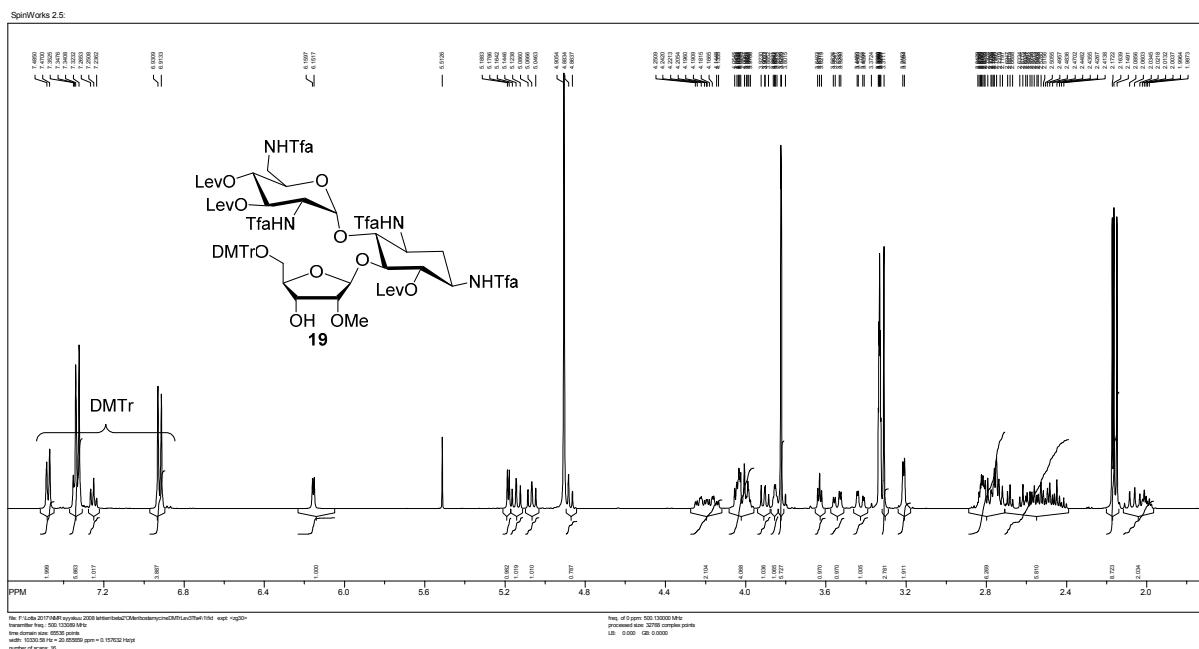
**Figure S24.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **18**.



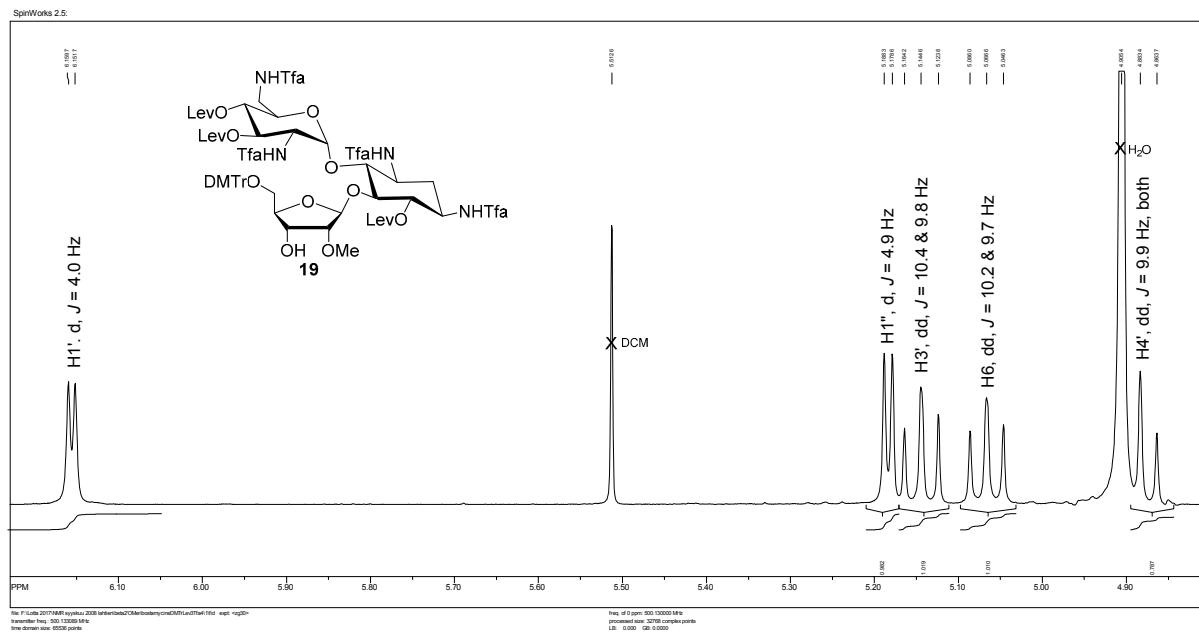
**Figure S25.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **18**.



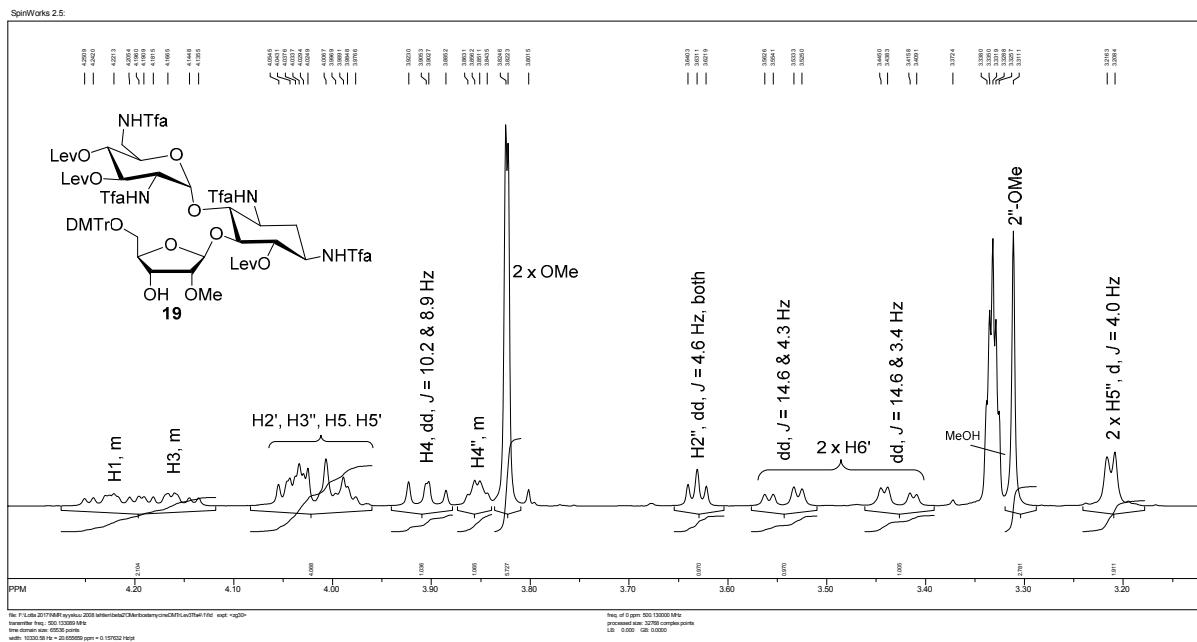
**Figure S26.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **18**.



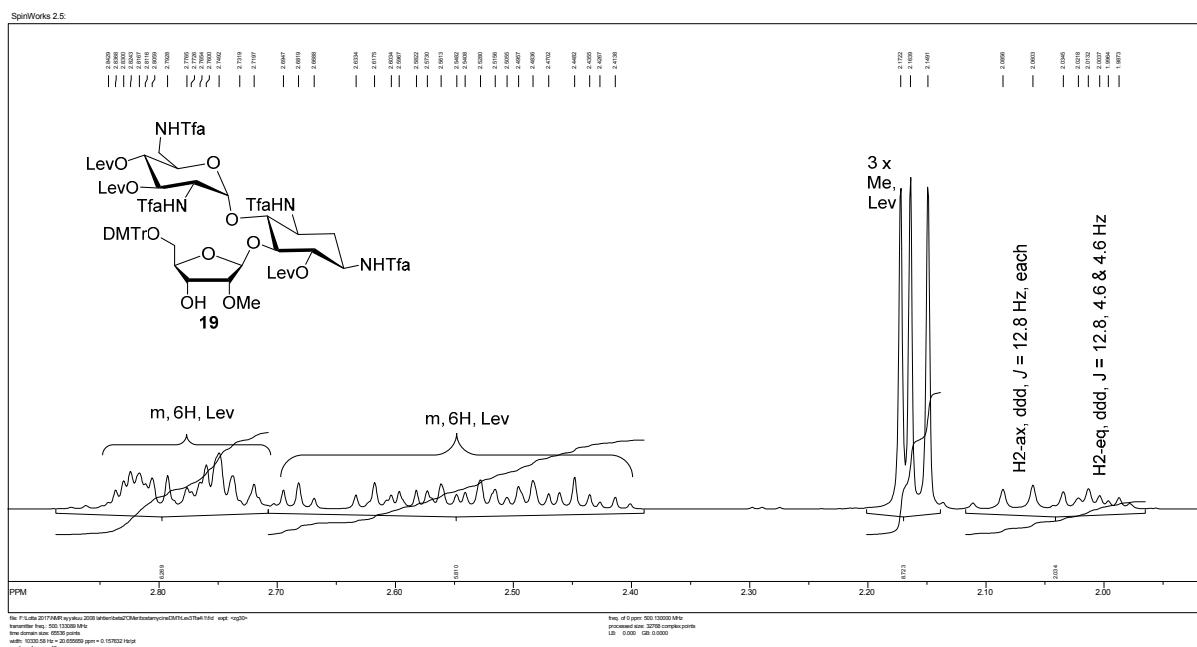
**Figure S27.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **19**.



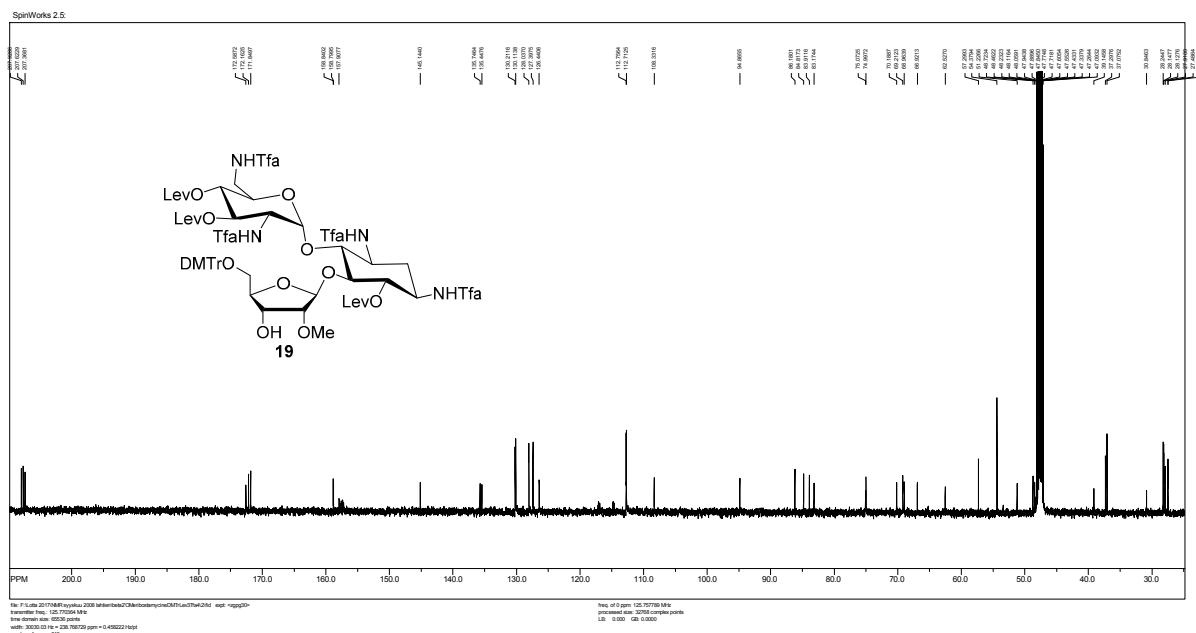
**Figure S28.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **19**.



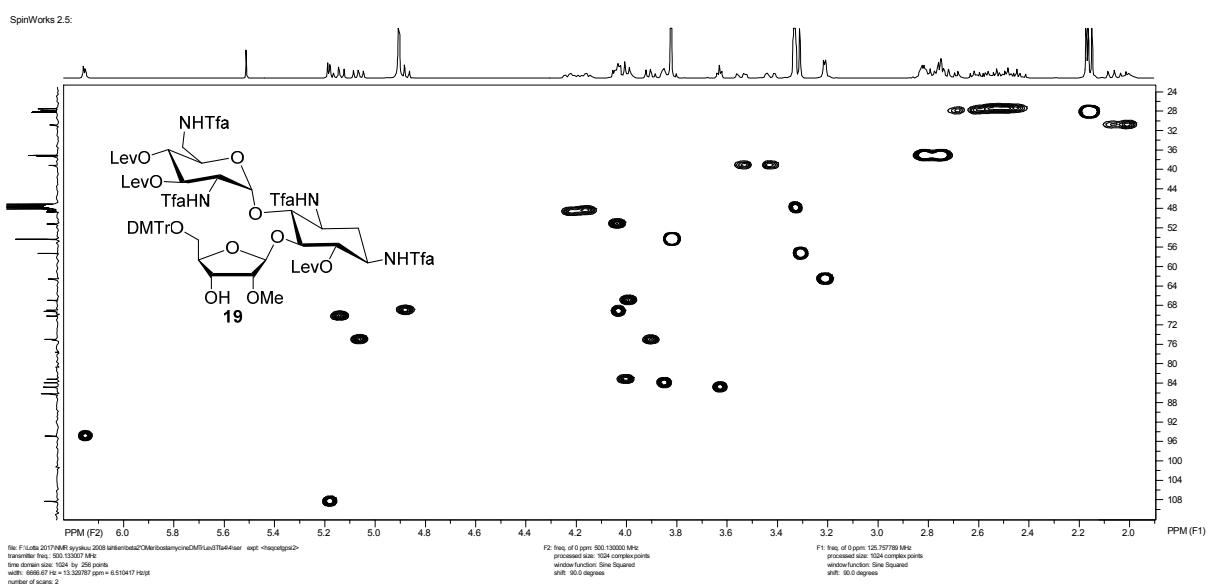
**Figure S29.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **19**.



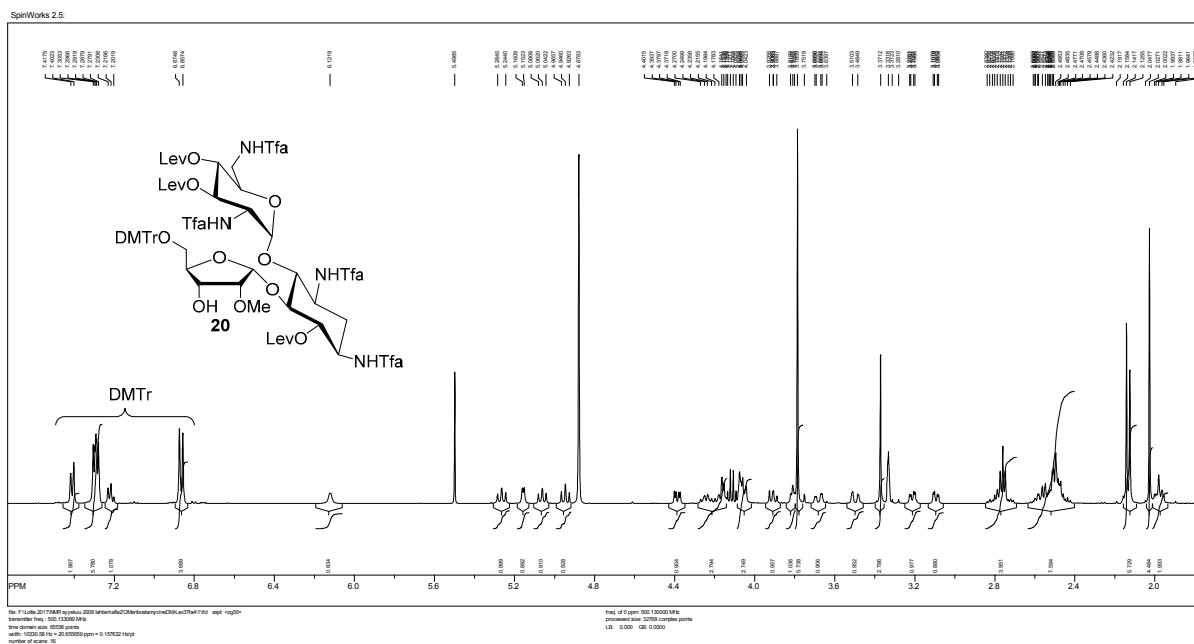
**Figure S30.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **19**.



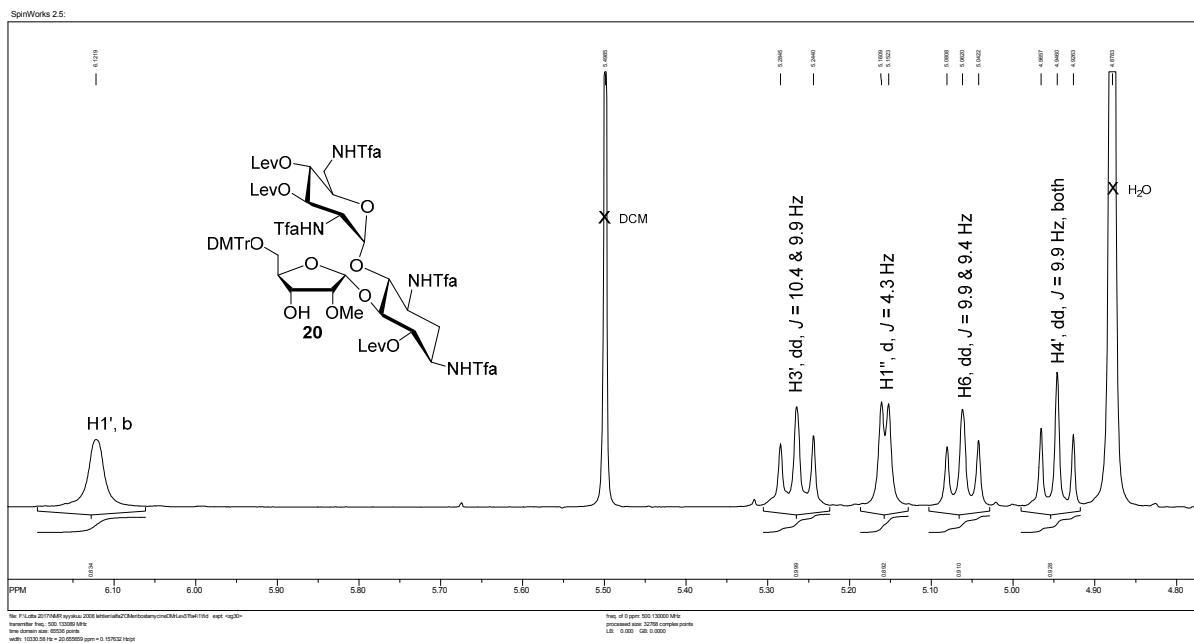
**Figure S31.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **19**.



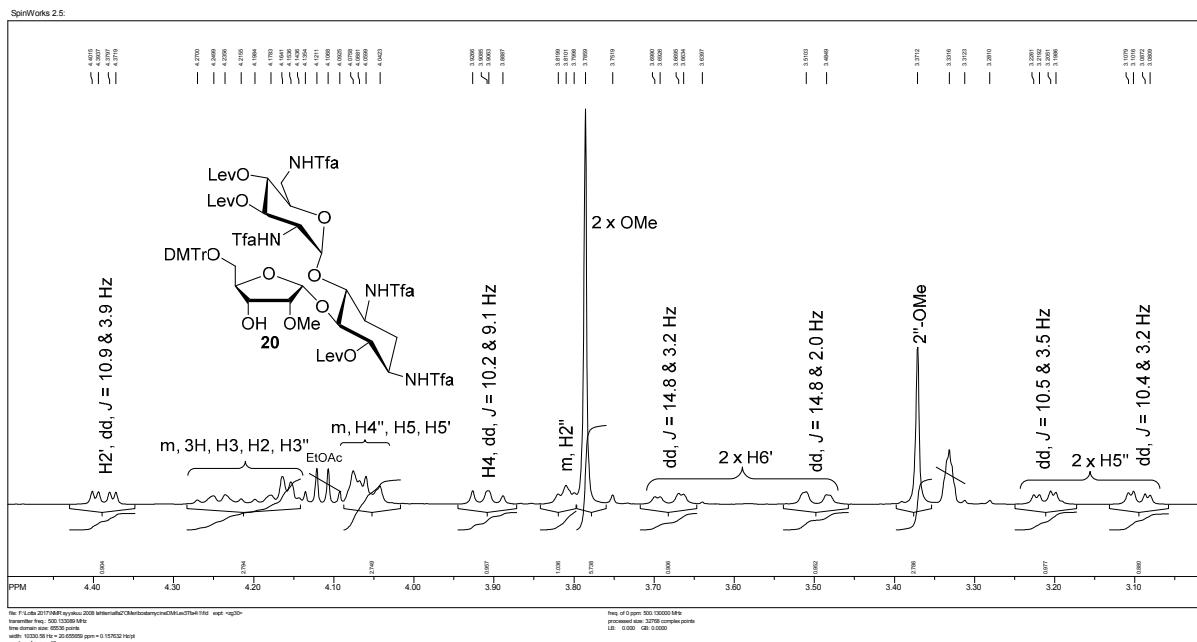
**Figure S32.** HSQC spectrum of **19**.



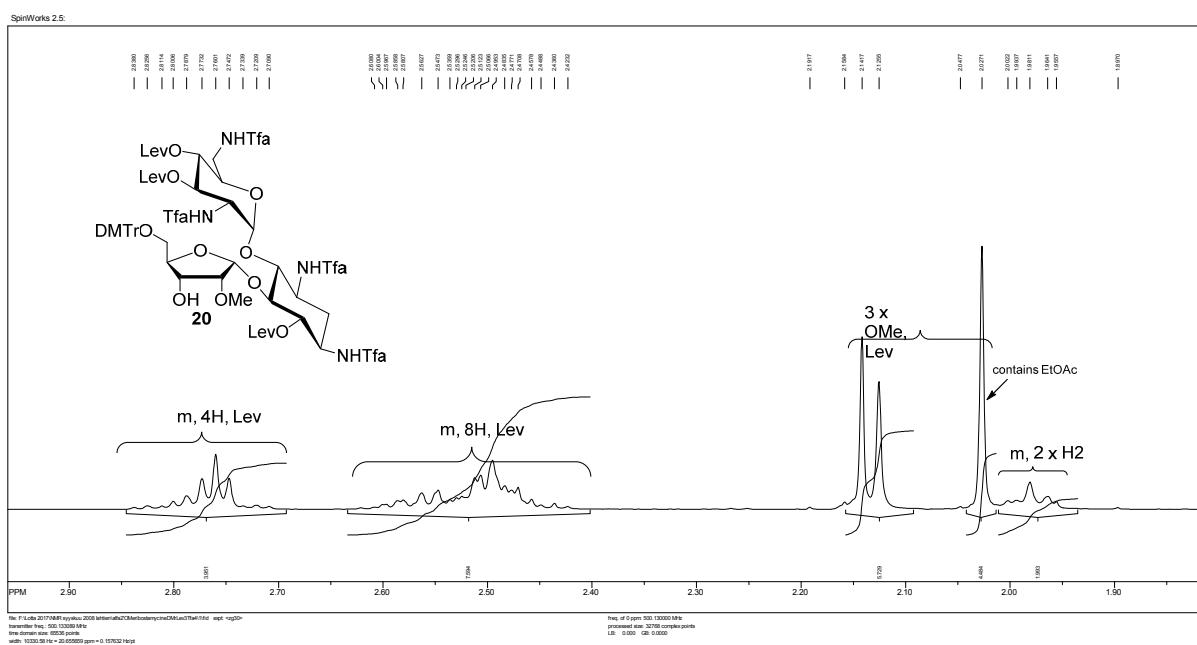
**Figure S33.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **20**.



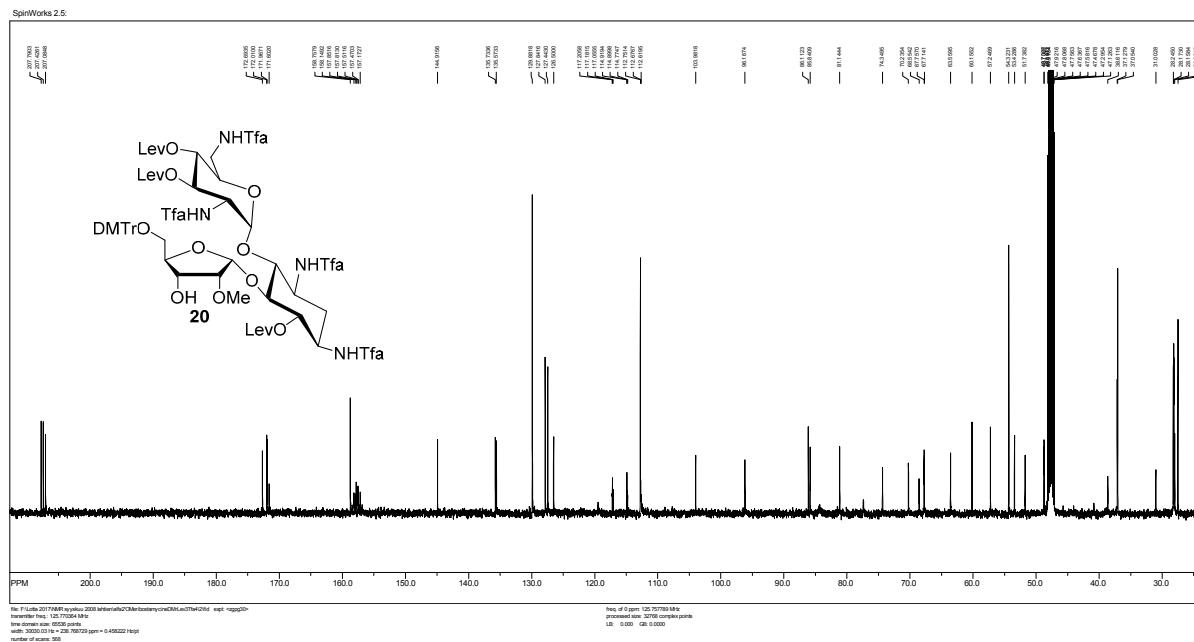
**Figure S34.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **20**.



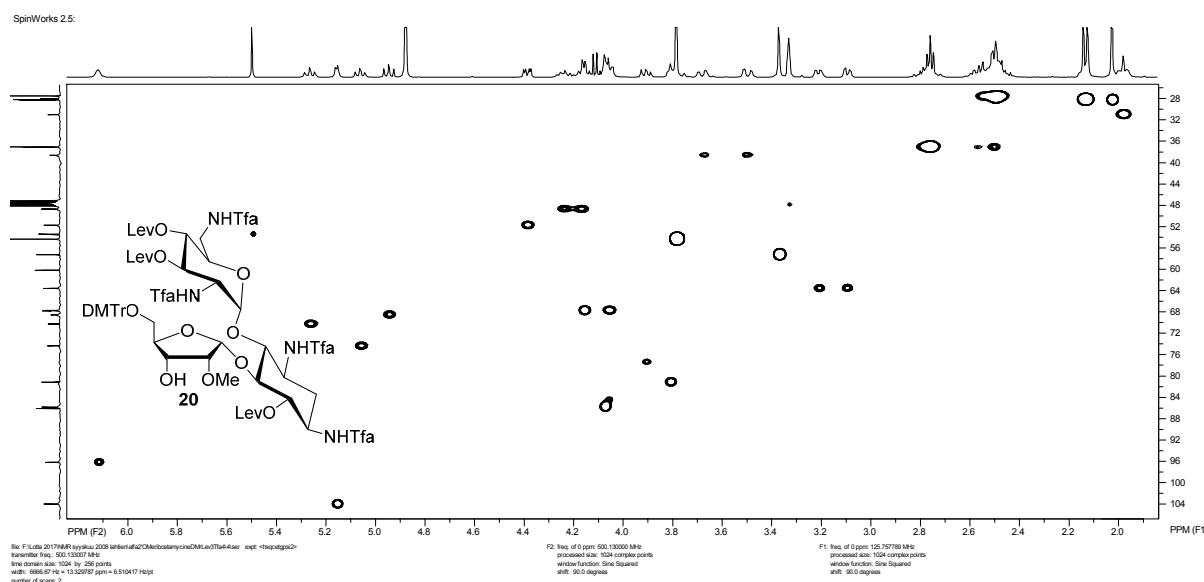
**Figure S35.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **20**.



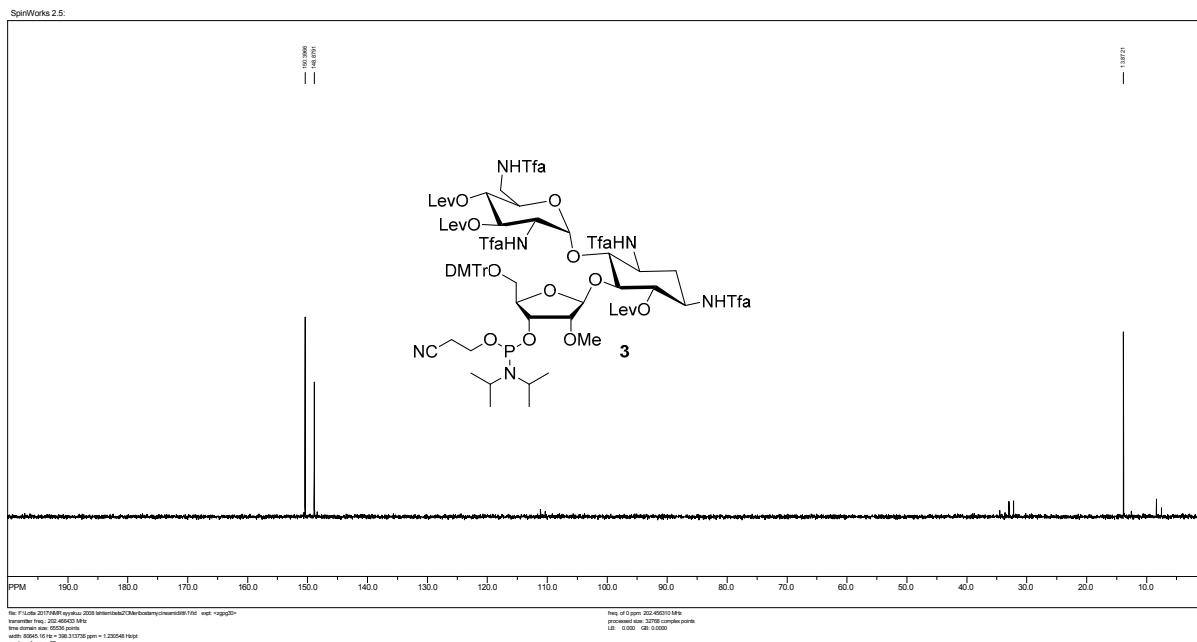
**Figure S36.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **20**.



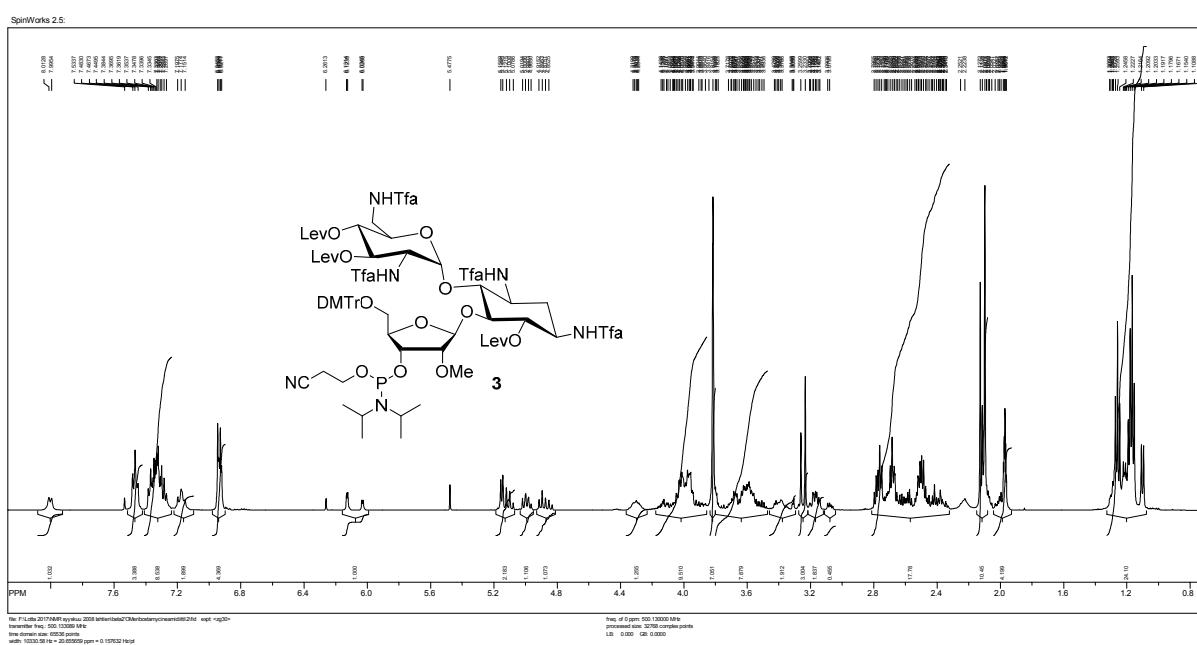
**Figure S37.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{OD}$ ) spectrum of **20**.



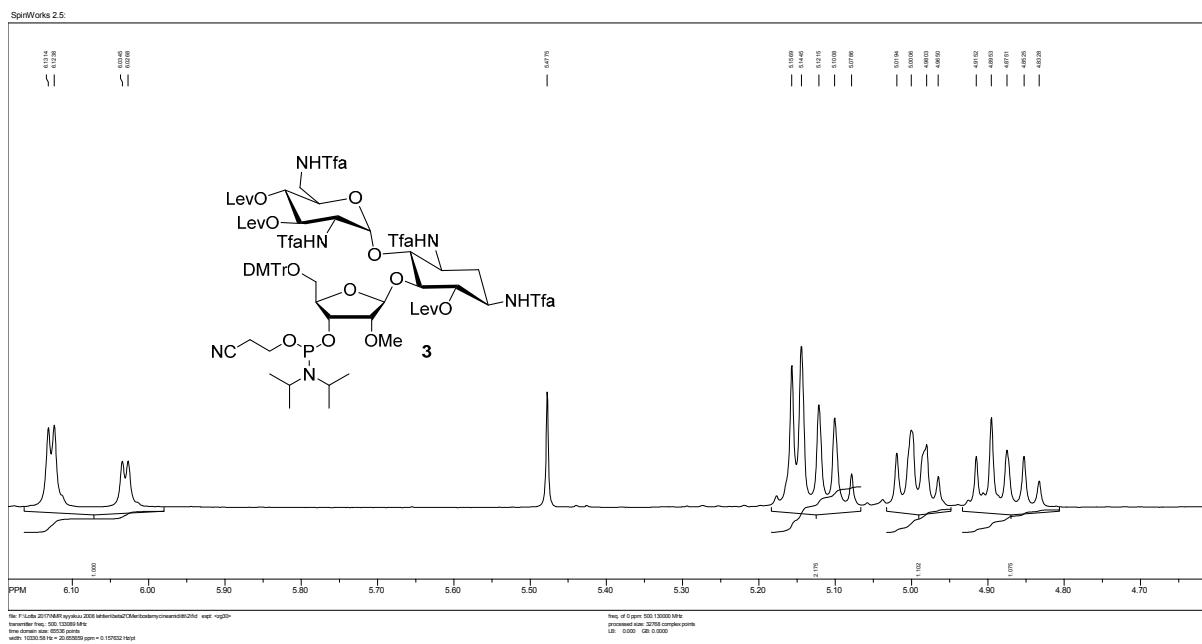
**Figure S38.** HSQC spectrum of **20**.



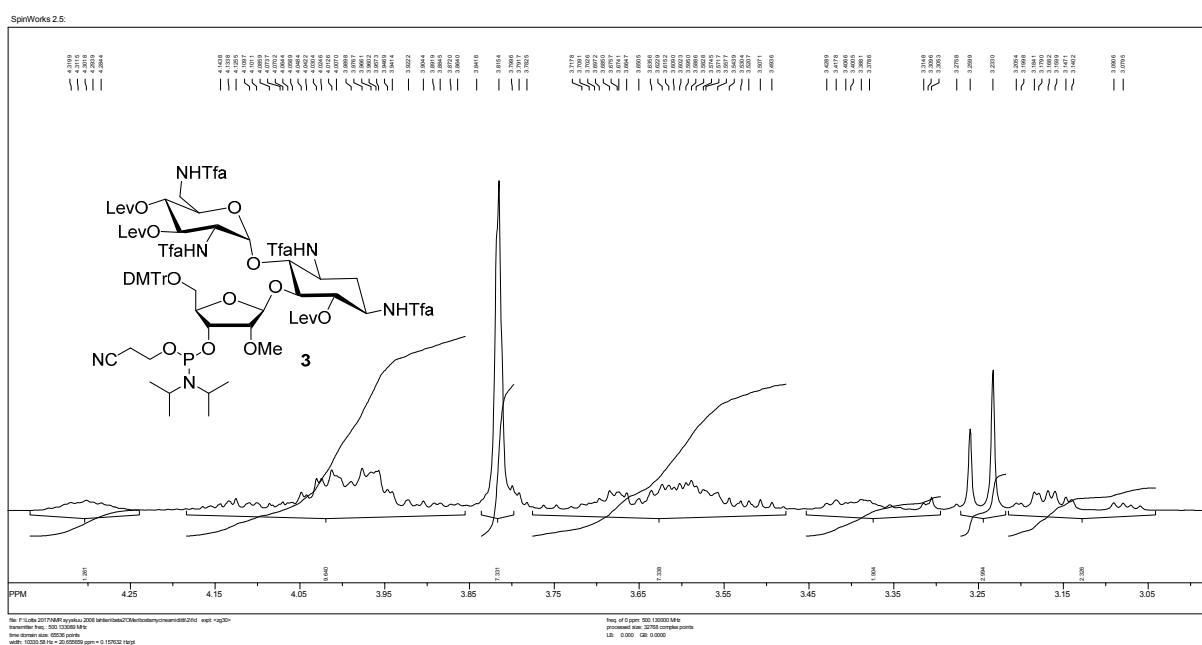
**Figure S39.**  $^{31}\text{P}$  NMR (200 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of 3.



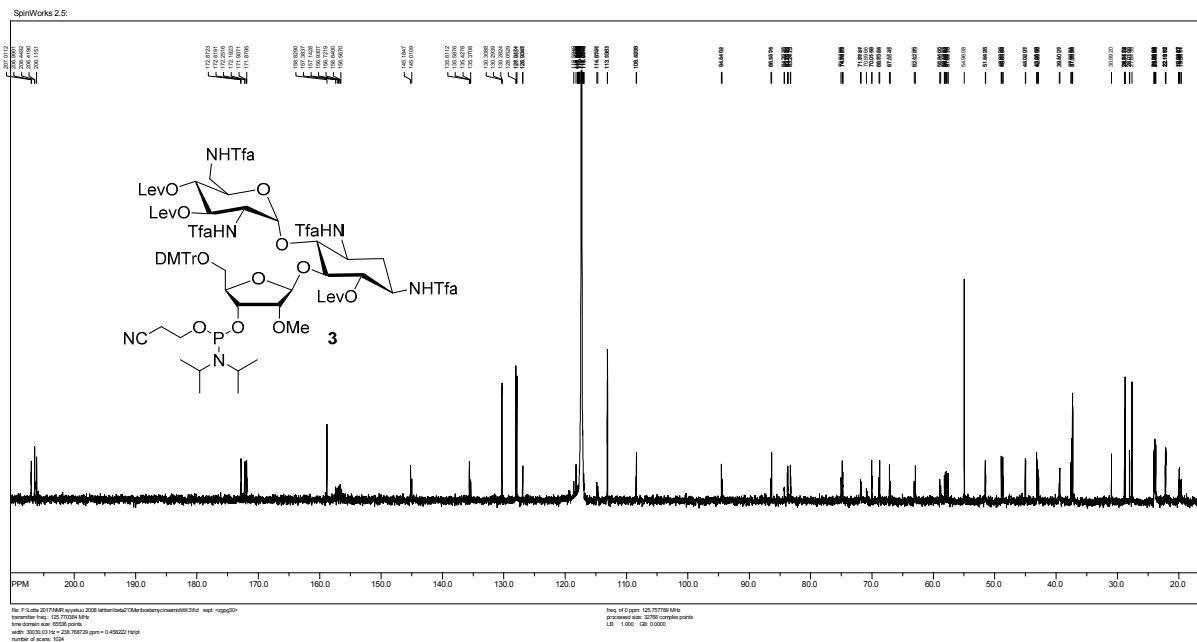
**Figure S40.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of **3**.



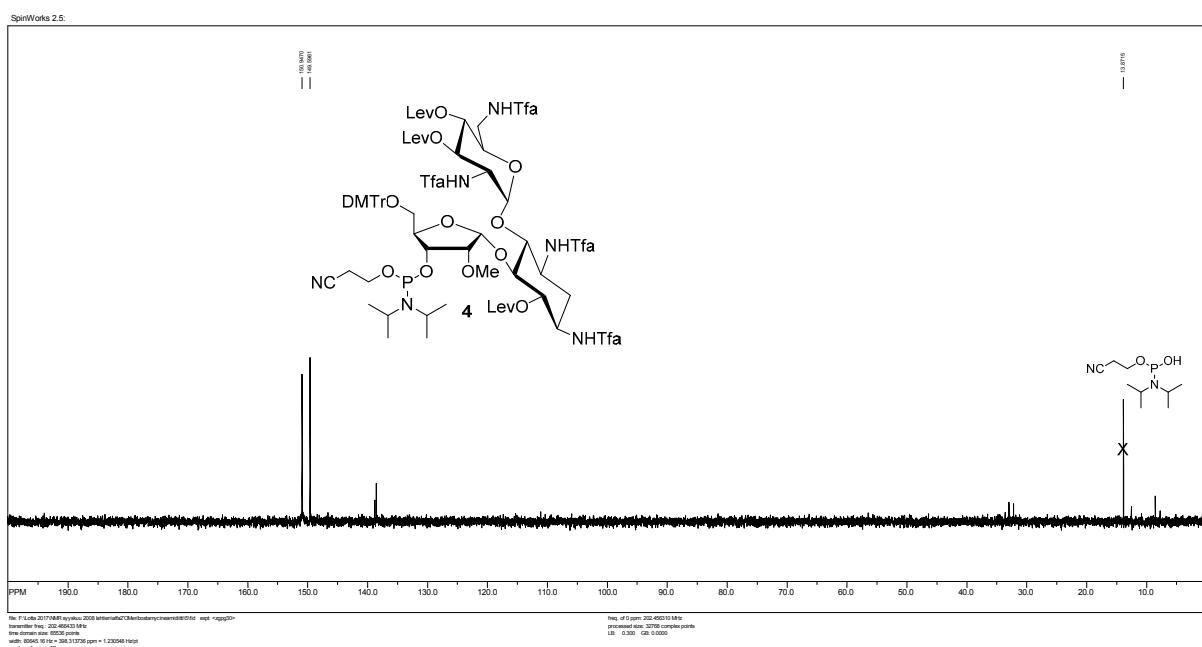
**Figure S41.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of 3.



**Figure S42.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of 3.

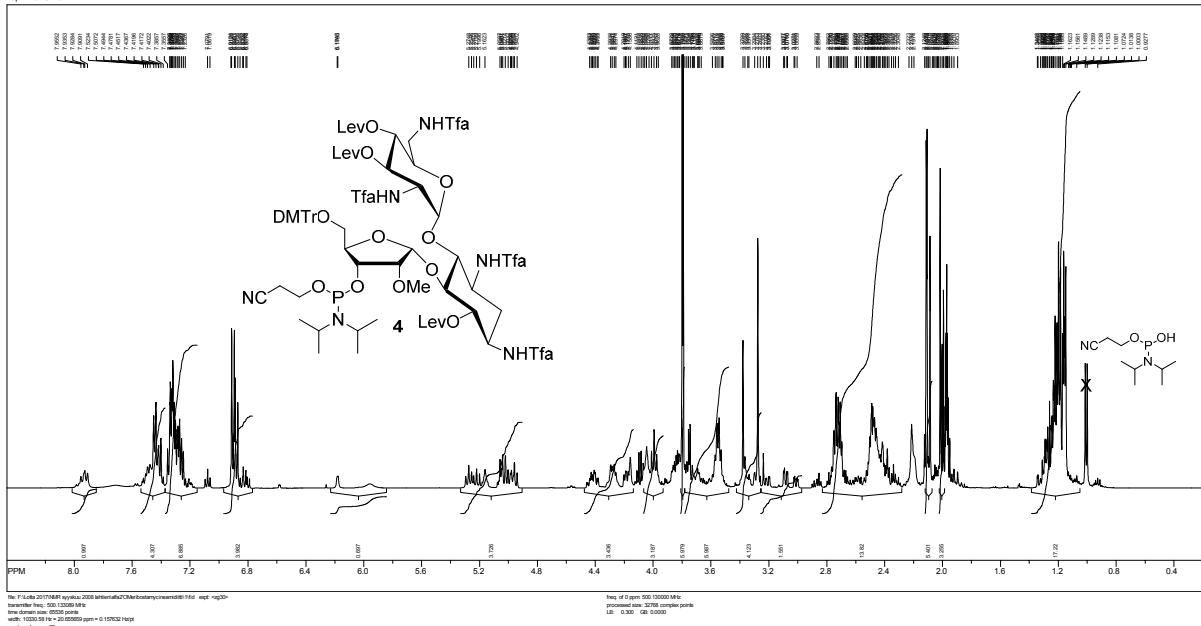


**Figure S43.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of 3.



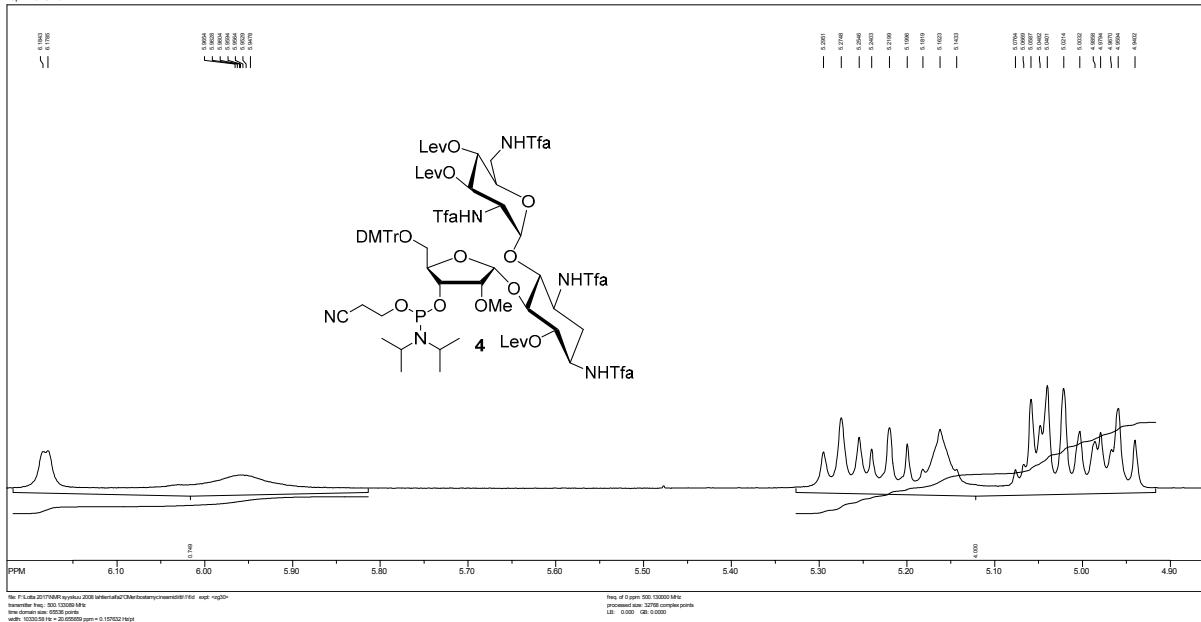
**Figure S44.**  $^{31}\text{P}$  NMR (200 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of 4.

SpinWorks 2.5:

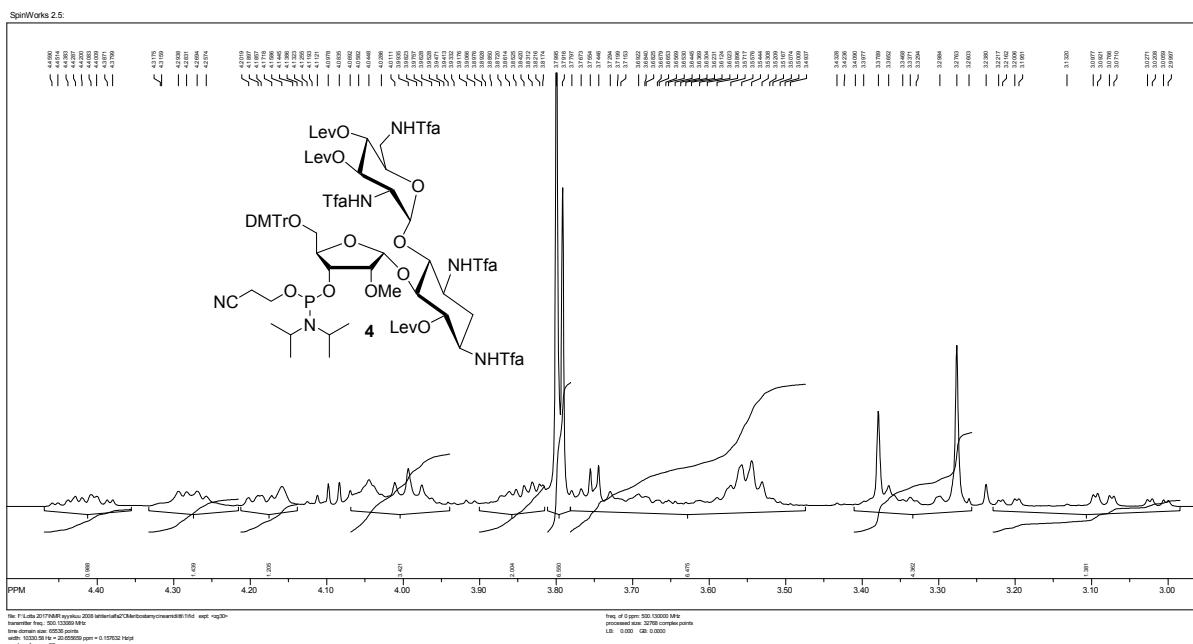


**Figure S45.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of **4**.

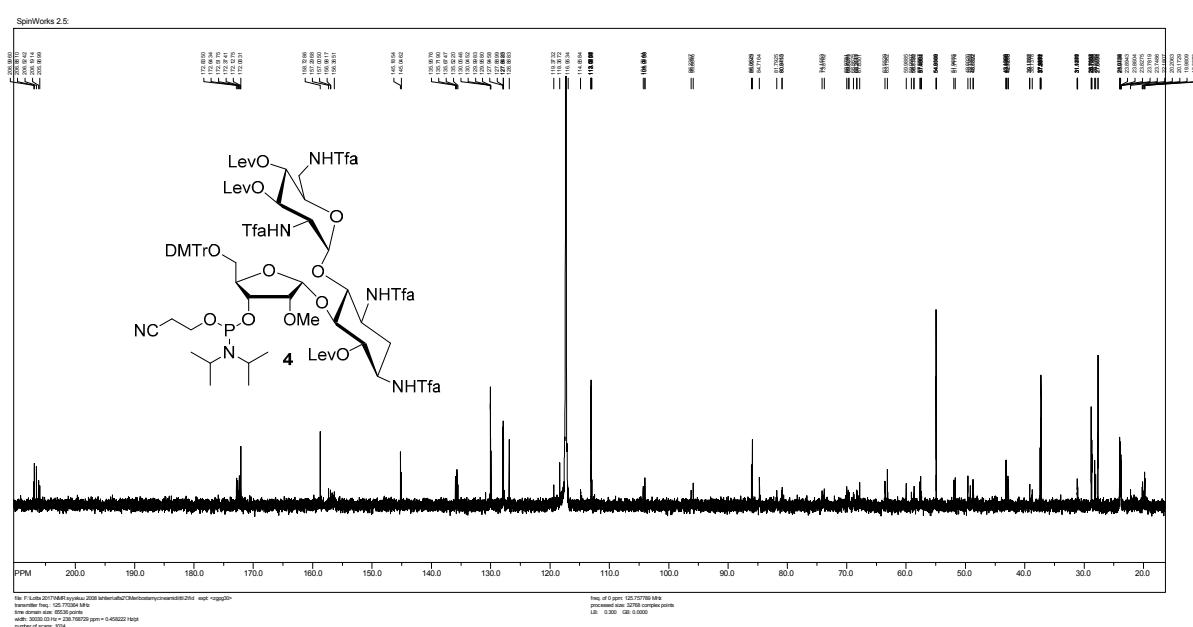
SpinWorks 2.5:



**Figure S46.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of **4**.



**Figure S47.**  $^1\text{H}$  NMR (500 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of **4**.



**Figure S48.**  $^{13}\text{C}$  NMR (125 MHz,  $\text{CD}_3\text{CN}$ ) spectrum of **4**.

**Table S1.** MS(ESI-TOF) data of the oligonucleotides.

	<b>ON1</b>	<b>ON2</b>	<b>ON4</b>	<b>ON5</b>	<b>ON6</b>	<b>ON7</b>	<b>ON8</b>
Observed molecular mass	3447.7	3447.7	10104.3	10635.3	10635.1	9653.6	9652.8
Calculated molecular mass	3448.4	3448.4	10103.9	10635.0	10635.0	9653.8	9653.8

<sup>1</sup> Notes: The observed molecular masses are calculated from [(M-2H)/2]<sup>-2</sup>, (ON1 and ON2) and [(M-4H)/4]<sup>-4</sup> (ON3-ON8)