

## Supporting Information

### An Expedient Total Synthesis of 5'-Deoxytoyocamycin and 5'-Deoxysangivamycin

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Supporting information for <sup>1</sup>H NMR and <sup>13</sup>C NMR Spectrum of compounds 5'-deoxytoyocamycin and

5'-deoxysangivamycin and intermediate compounds of **10**, **6**, **12**, **14**, **16**.

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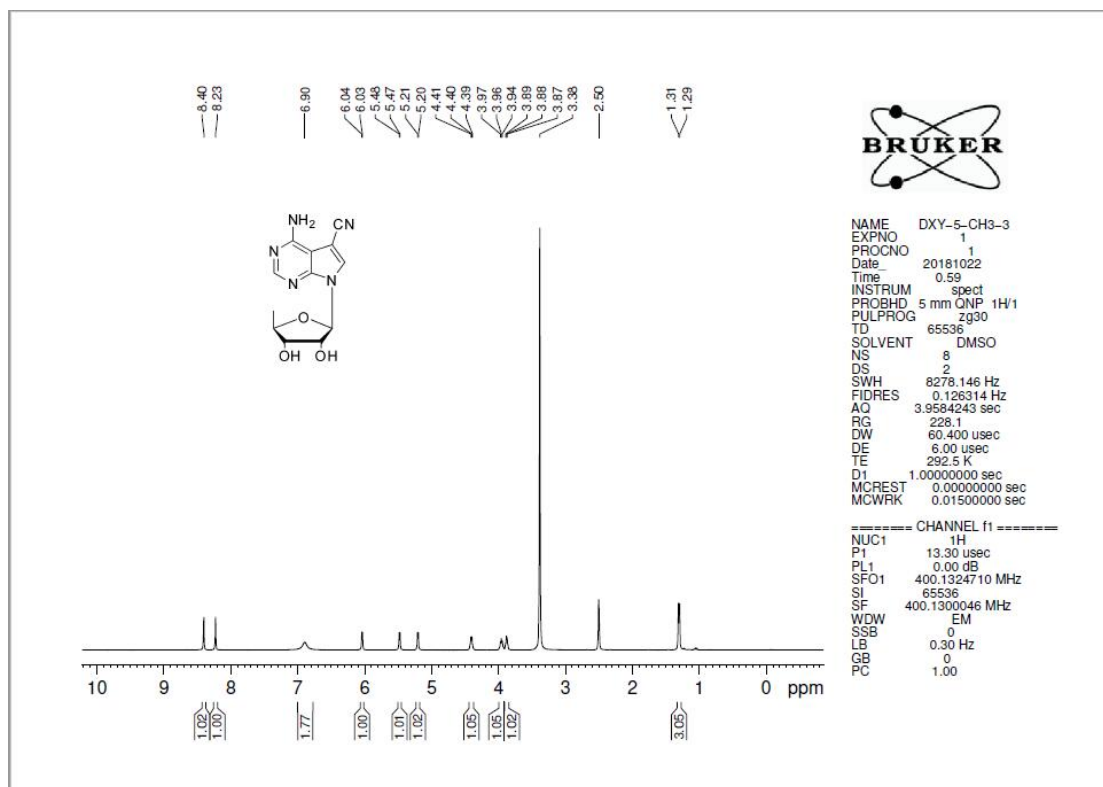


Figure S2 <sup>1</sup>H NMR Spectrum of compound 5'-deoxytoyocamycin

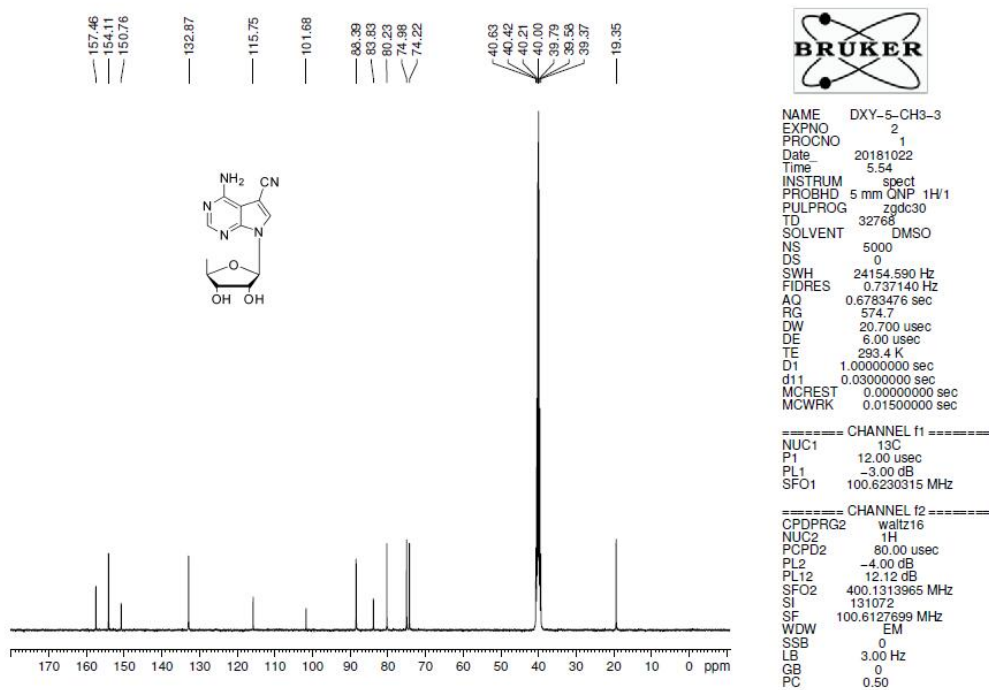


Figure S2 <sup>13</sup>C NMR Spectrum of compound 5'-deoxytoyocamycin

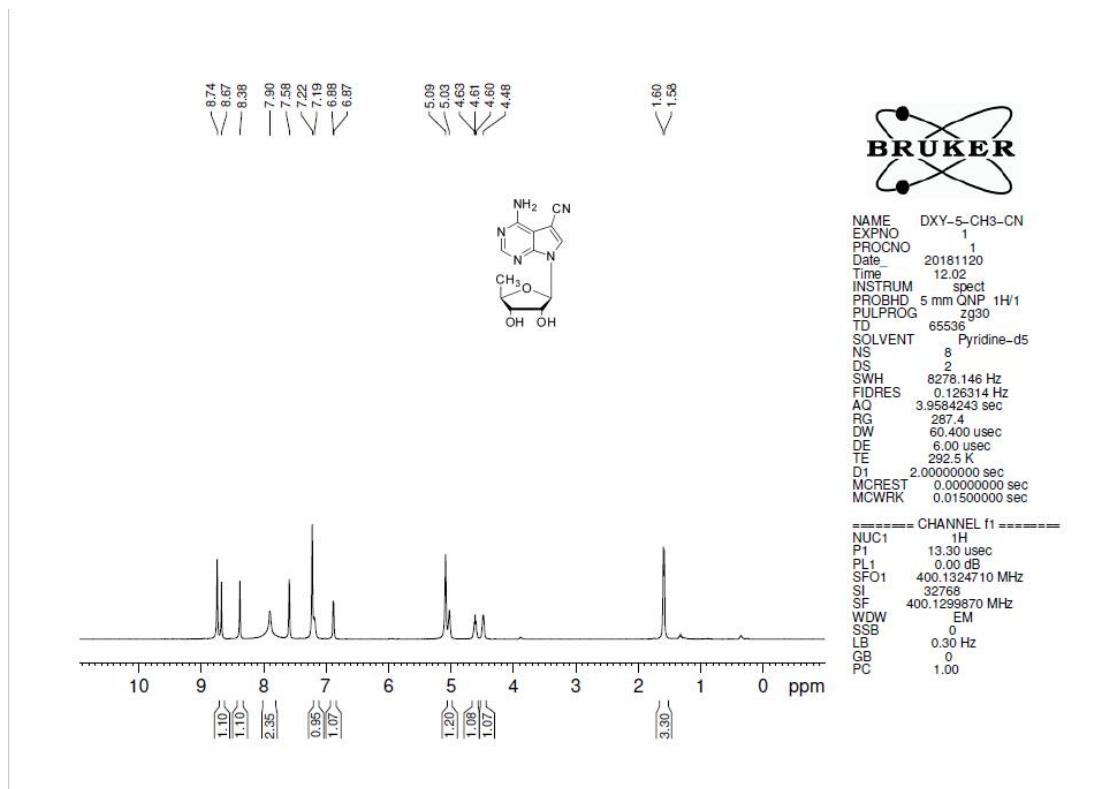


Figure S3 <sup>1</sup>H NMR Spectrum of compound 5' -deoxytoyocamycin

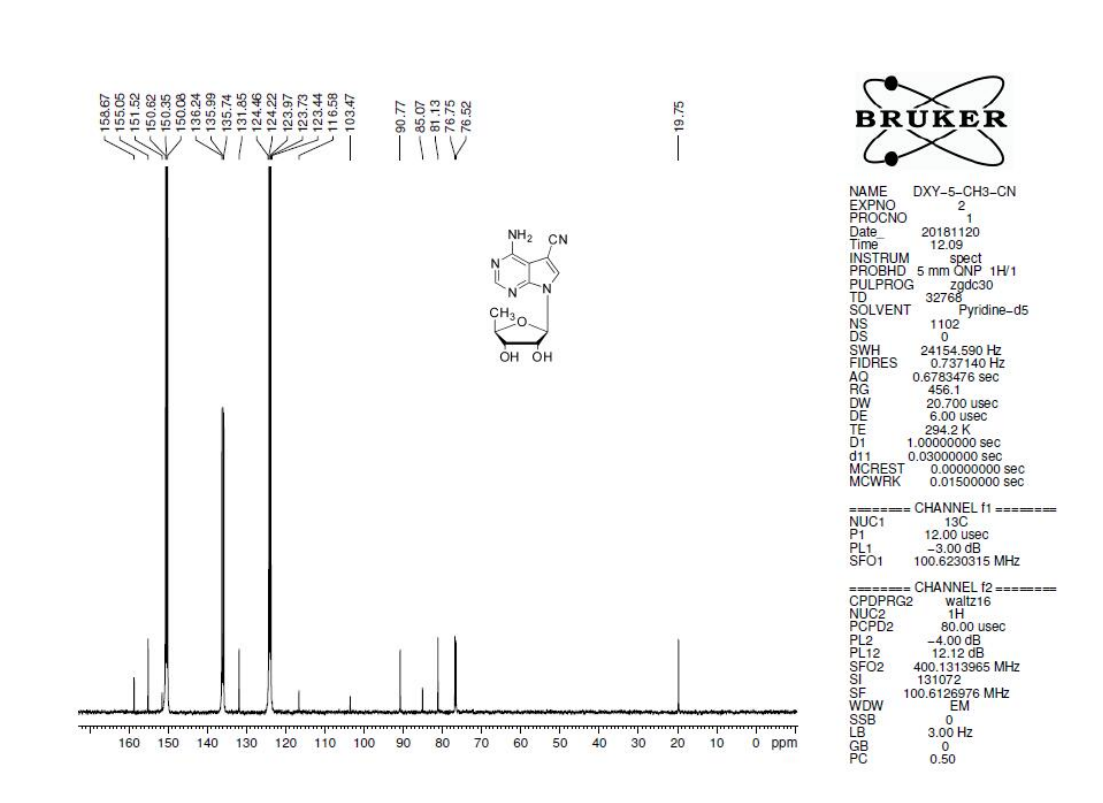


Figure S3 <sup>13</sup>C NMR Spectrum of compound 5' -deoxytoyocamycin

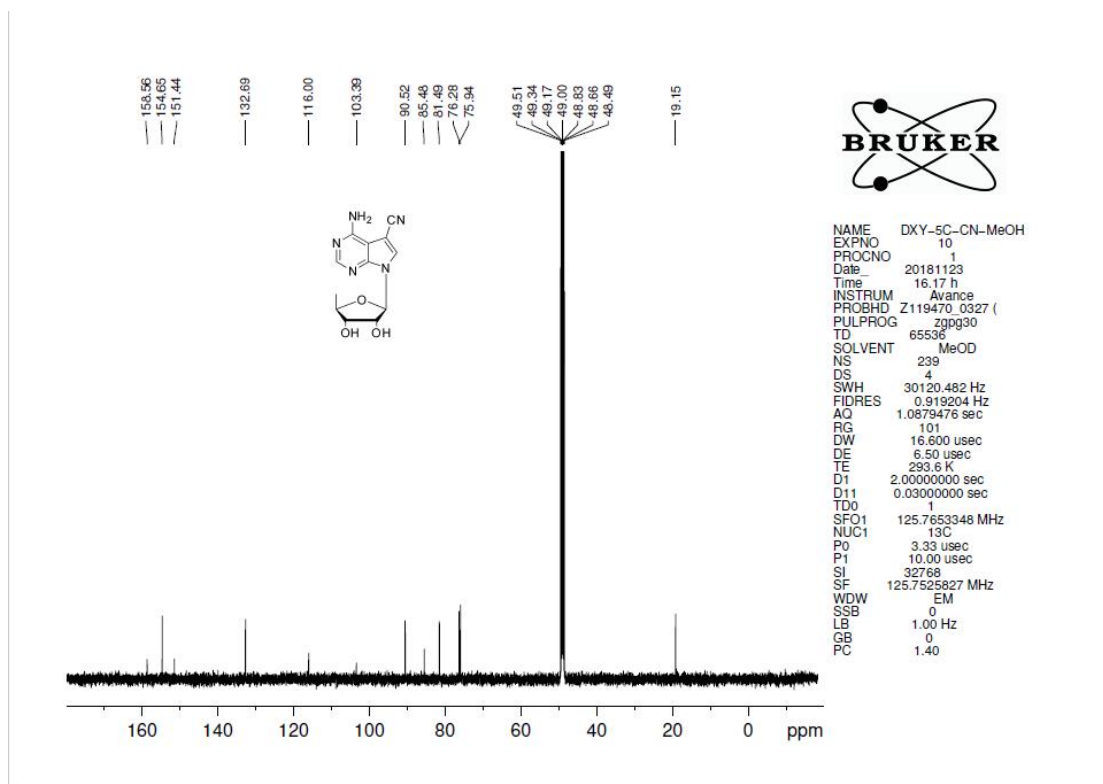


Figure S4  $^{13}\text{C}$  NMR Spectrum of compound 5'-deoxytyocamycin

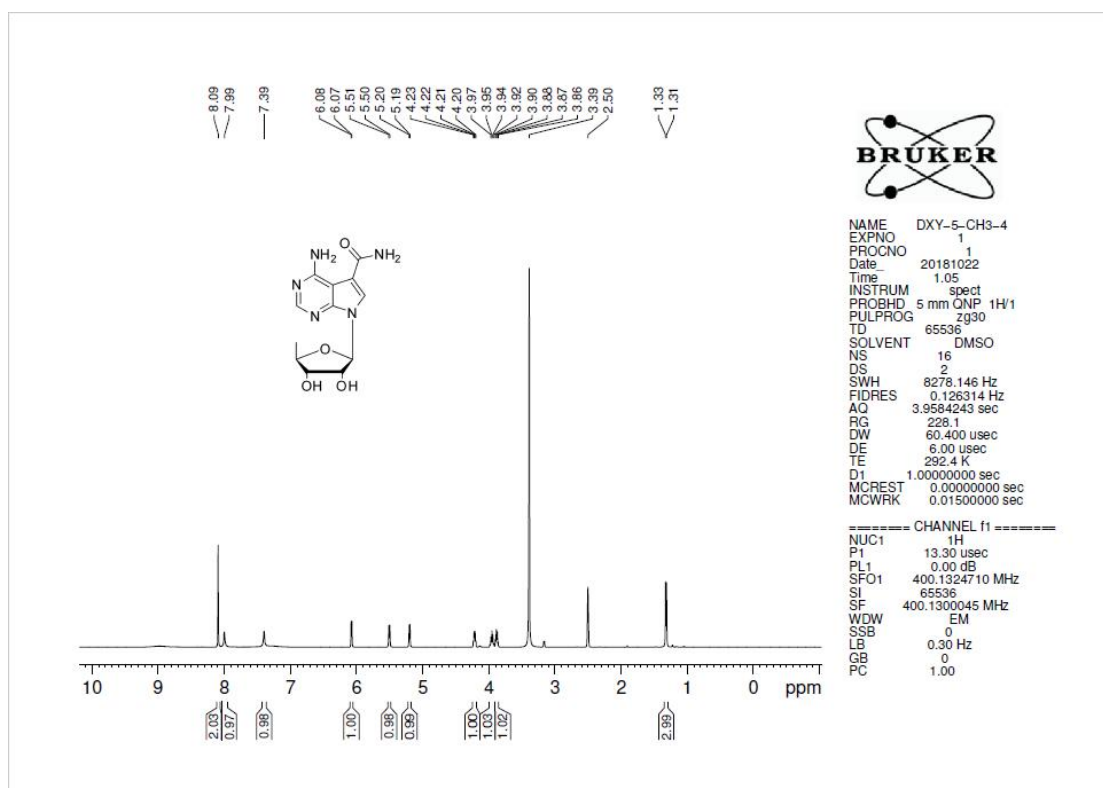


Figure S4  $^1\text{H}$  NMR Spectrum of compound 5'-deoxysangivamycin

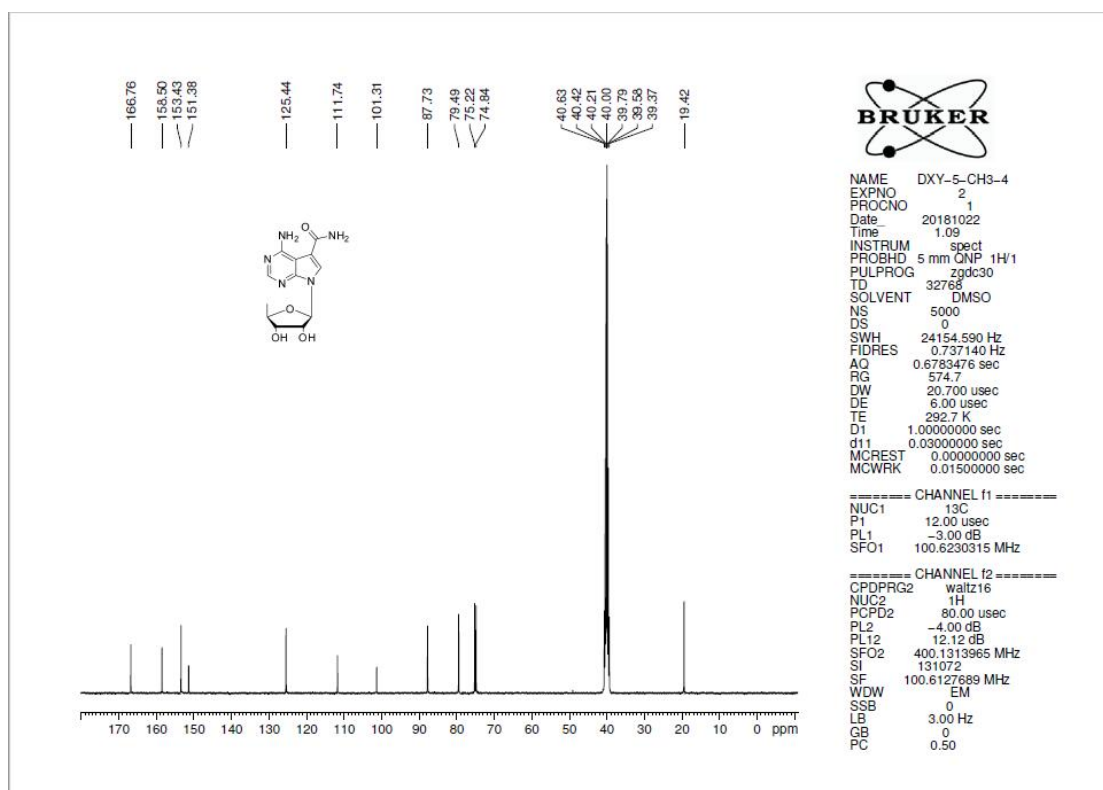


Figure S5 <sup>13</sup>C NMR Spectrum of compound 5' –deoxysangivamycin

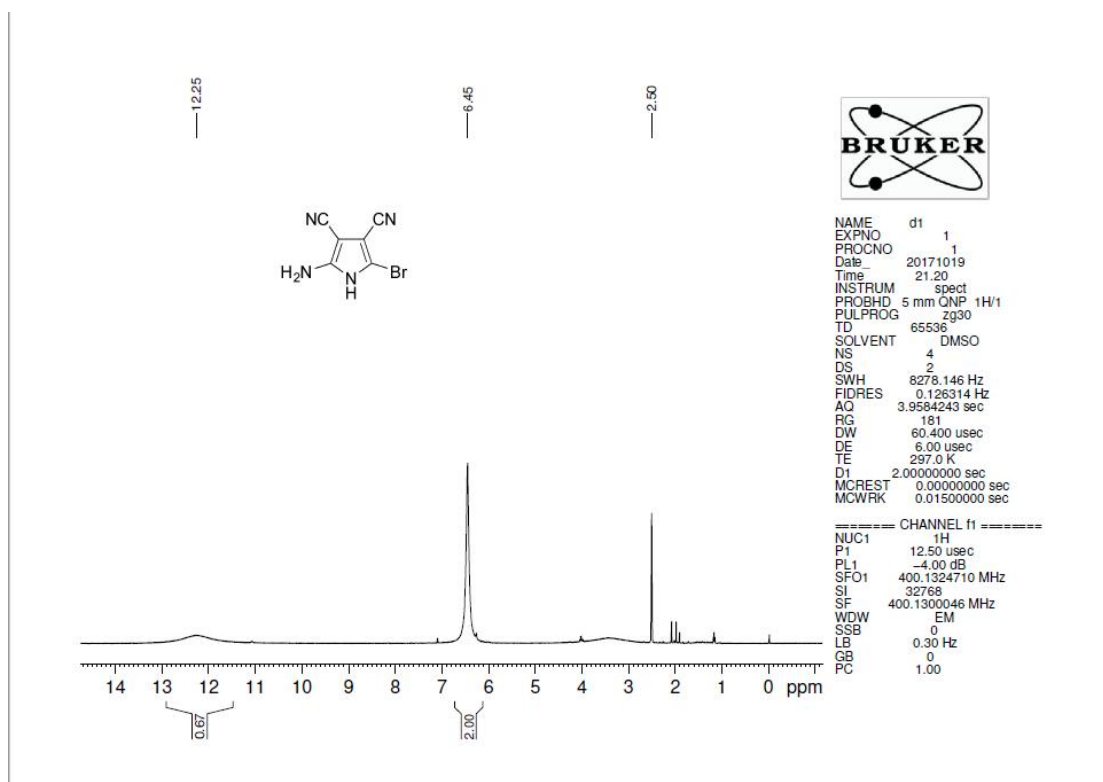


Figure S5 <sup>1</sup>H NMR Spectrum of compound 10

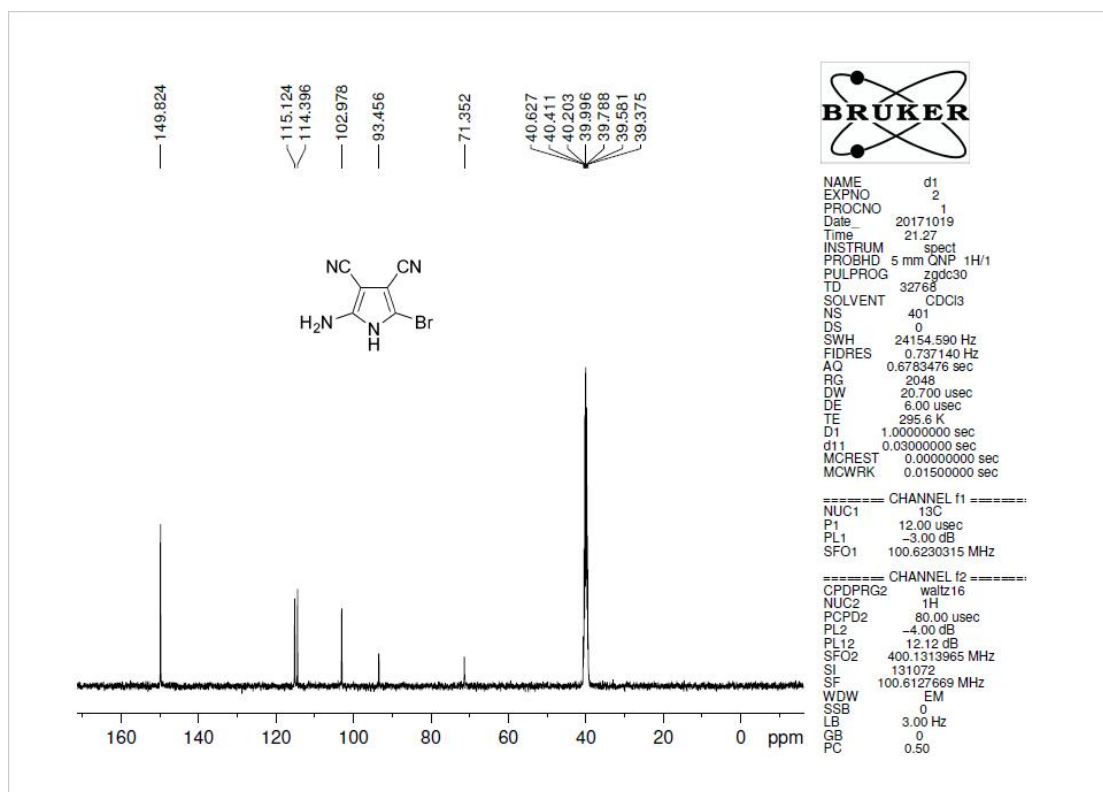


Figure S6 <sup>13</sup>C NMR Spectrum of compound 10

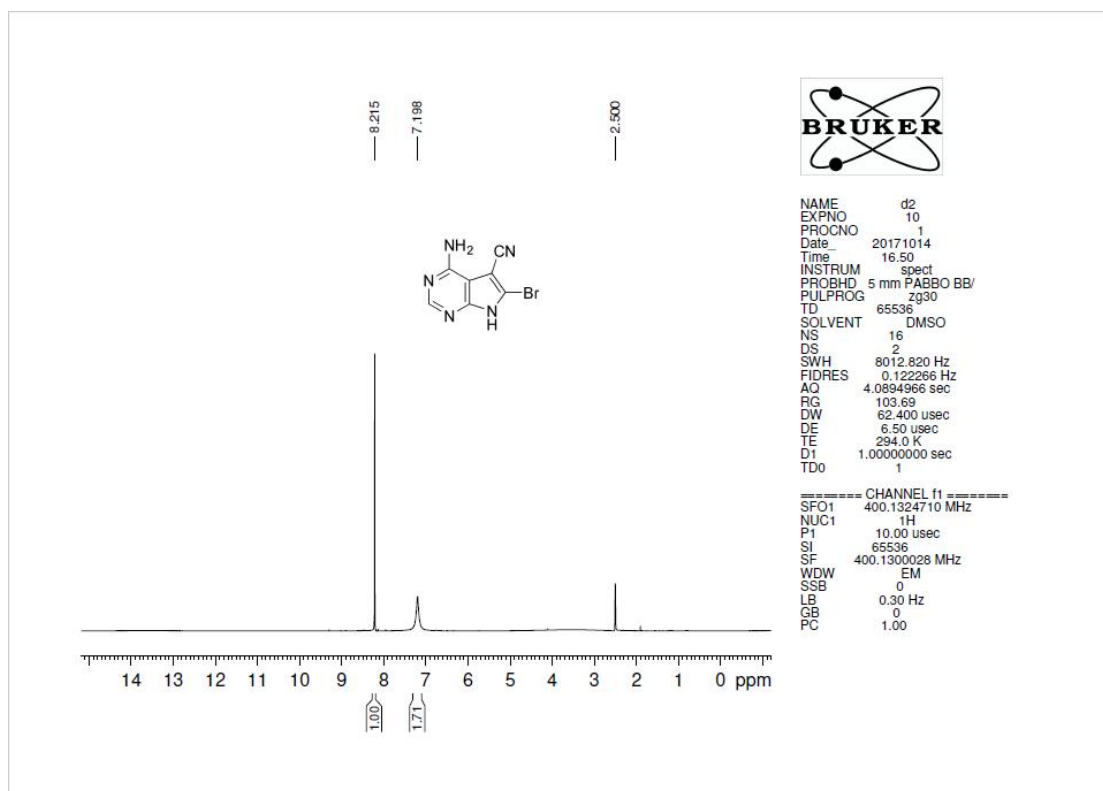


Figure S6 <sup>1</sup>H NMR Spectrum of compound 6

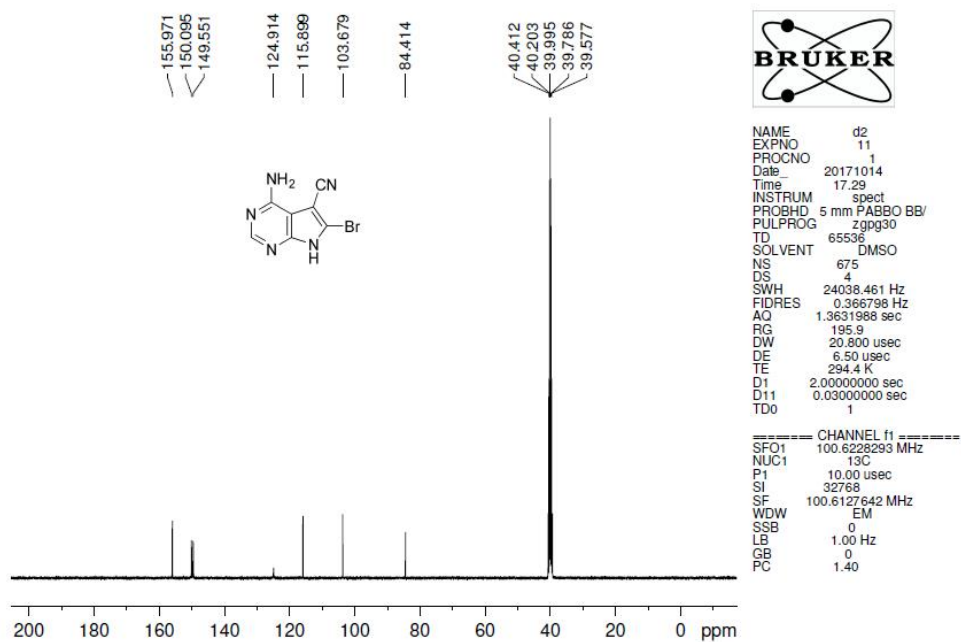


Figure S7 <sup>13</sup>C NMR Spectrum of compound 6

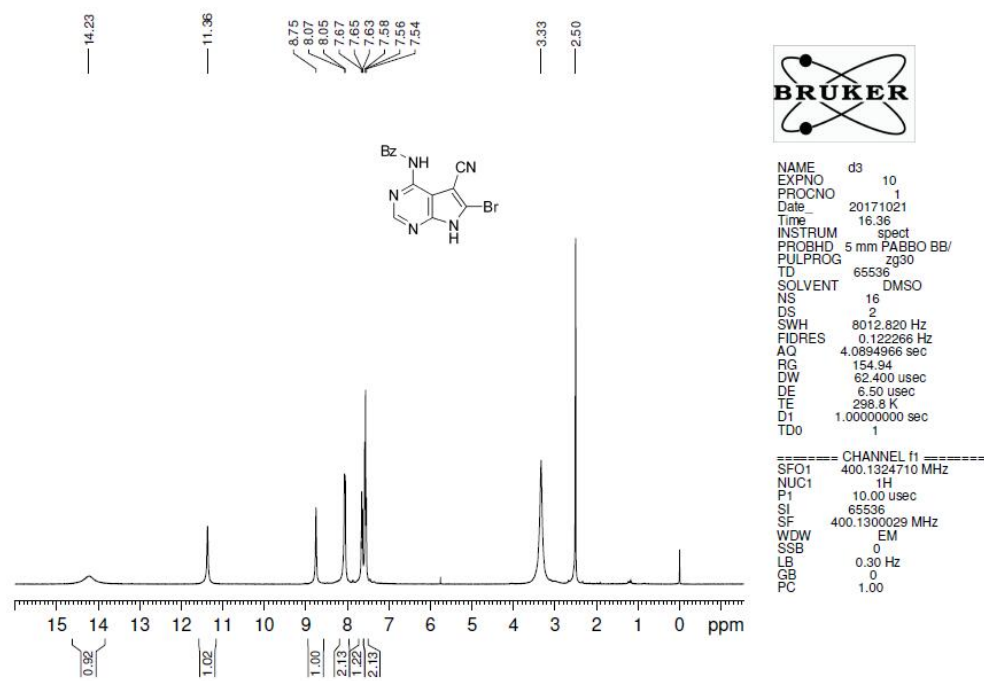


Figure S7 <sup>1</sup>H NMR Spectrum of compound 12

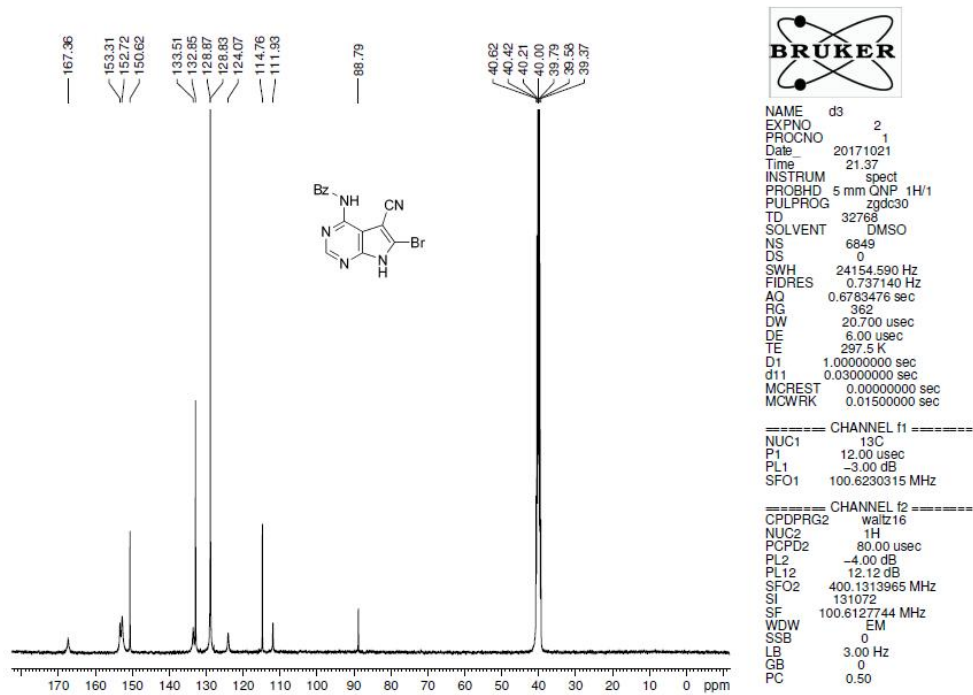


Figure S8 <sup>13</sup>C NMR Spectrum of compound 12

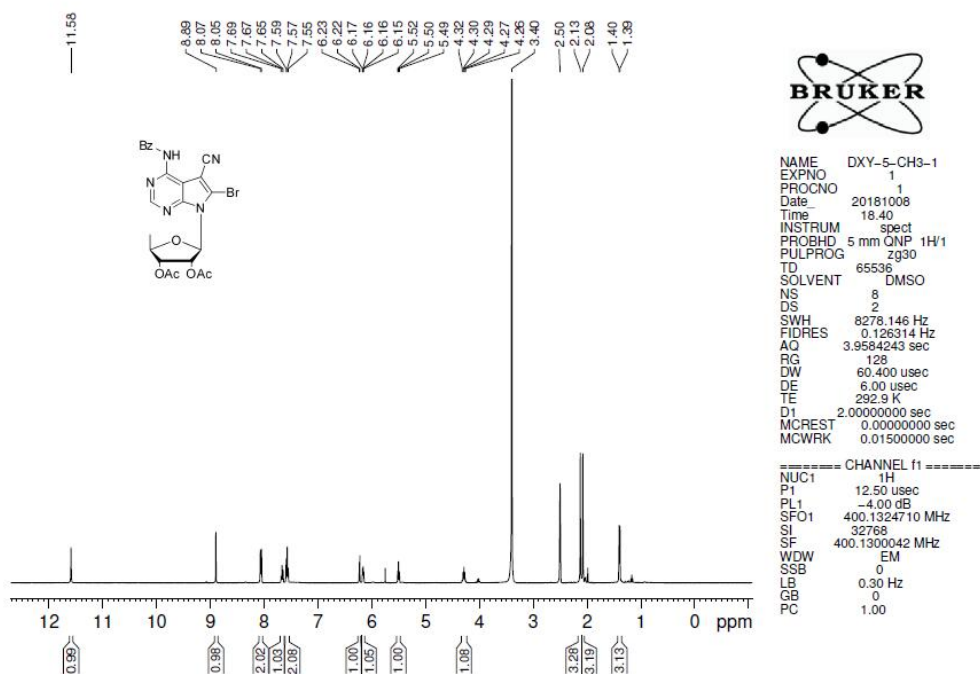


Figure S8 <sup>1</sup>H NMR Spectrum of compound 14



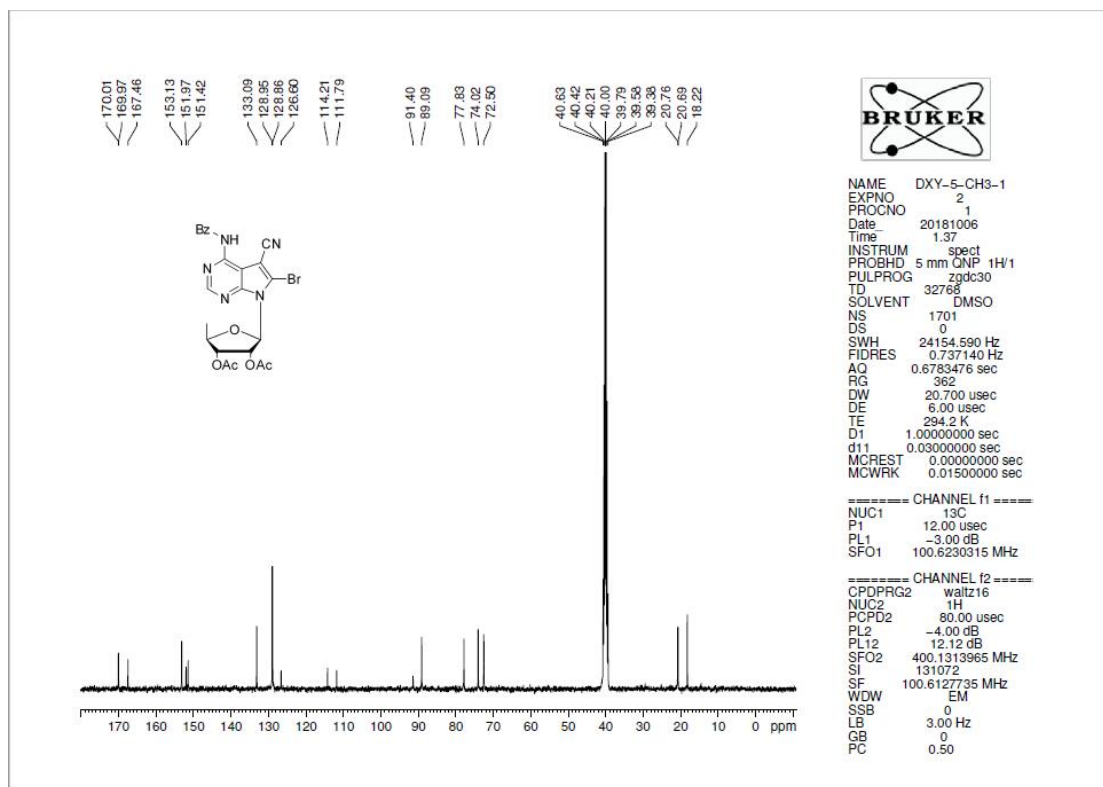


Figure S9 <sup>13</sup>C NMR Spectrum of compound 14

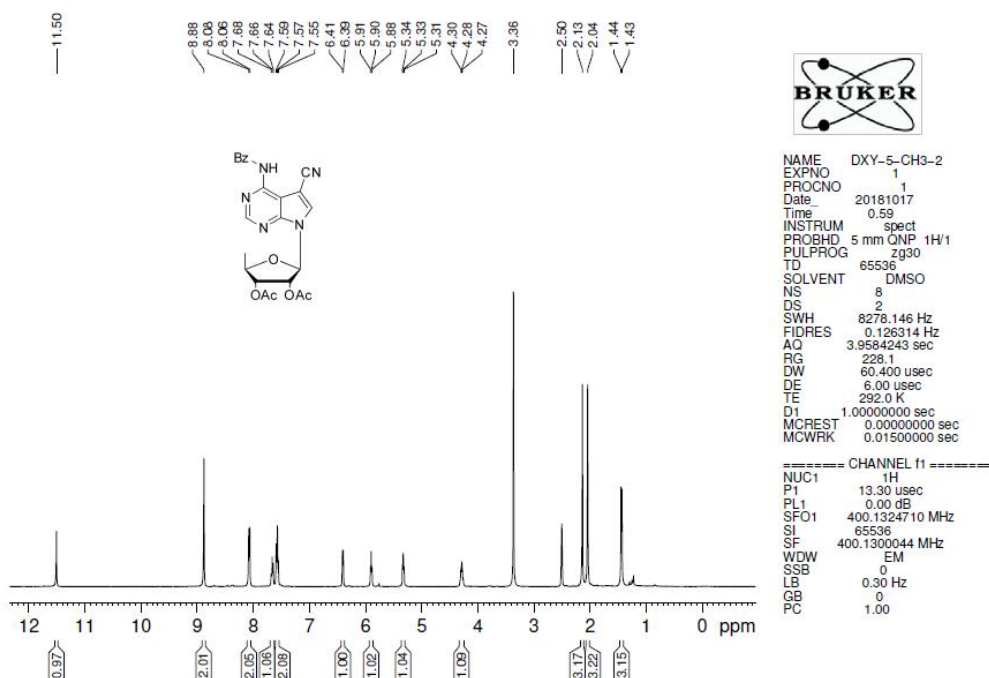


Figure S9 <sup>1</sup>H NMR Spectrum of compound 16

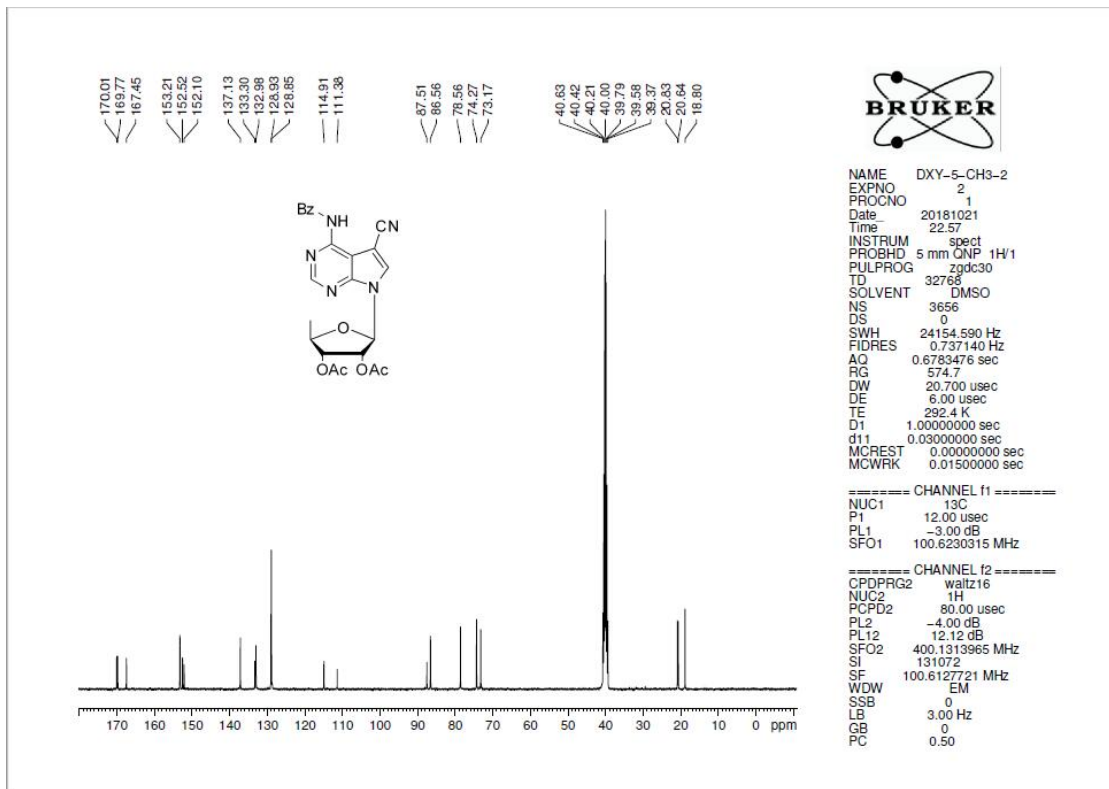


Figure S10 <sup>13</sup>C NMR Spectrum of compound 16

Table 1. Comparison NMR data for 5' -Deoxytyocamycin between test value and literature value (<sup>1</sup>H NMR in pyridine-*d*<sub>5</sub>, DMSO and <sup>13</sup>C NMR in CD<sub>3</sub>OD,DMSO)

	literature value	test value	test value	literature value	test value	test value
position	<sup>13</sup> C (CD <sub>3</sub> OD)	<sup>13</sup> C (CD <sub>3</sub> OD)	<sup>13</sup> C (DMSO)	<sup>1</sup> H( <i>J</i> in Hz) (pyridine- <i>d</i> <sub>5</sub> )	<sup>1</sup> H( <i>J</i> in Hz) (pyridine- <i>d</i> <sub>5</sub> )	<sup>1</sup> H( <i>J</i> in Hz) (DMSO)
2	154.6	154.7 (CH)	154.1 (CH)	8.63 (s, 1H)	8.67 (s, 1H)	8.23 (s, 1H)
4	151.5	151.4 (C)	150.8 (C)	-	-	-
5	-	103.4 (C)	101.7 (C)	-	-	-
6	158.6	158.6 (C)	157.5 (C)	-	-	-
7	85.5	85.5 (C)	83.8 (C)	-	-	-
8	132.7	132.7 (CH)	132.9 (C)	8.32 (s, 1H)	8.38 (s, 1H)	8.40 (s, 1H)
10	116.0	116.0 (CN)	115.8 (CN)	-	-	-
1'	90.6	90.5 (CH)	88.4 (CH)	6.83 (d, 3.9, 1H)	6.88 (d, 2.9, 1H)	6.04 (d, 4.7, 1H)
2'	75.9	76.0 (CH)	74.2 (CH)	4.98 (t, 4.8, 1H)	5.03 (s, 1H)	4.44–4.37 (m, 1H)
3'	76.3	76.3 (CH)	75.0 (CH)	4.44 (t, 5.4, 1H)	4.48 (s, 1H)	3.91–3.84 (m, 1H)
4'	81.5	81.5 (CH)	80.2 (CH)	4.57 (dq, 6, 6.3, 1H)	4.66–4.56 (m, 1H)	4.00–3.91 (m, 1H)
5'	19.1	19.2 (CH <sub>3</sub> )	19.4 (CH <sub>3</sub> )	1.59 (d, 6.6, 1H)	1.59 (d, 6.0, 3H)	1.30 (d, 6.3, 3H, CH <sub>3</sub> )
NH <sub>2</sub>				7.81 (br, s, 2H)	7.90 (br, s, 2H)	6.90 (br, s, 2H)
OH				-	7.19 (s, 1H)	5.48 (d, 5.6, 1H) 5.20 (d, 5.3, 1H)