

# Supplementary Materials: Asymmetric Total Syntheses of Two 3-Acyl-5,6-dihydro-2H-pyrone: (*R*)-Podoblastin-S and (*R*)-Lachnelluloic Acid with Verification of the Absolute Configuration of (-)-Lachnelluloic Acid

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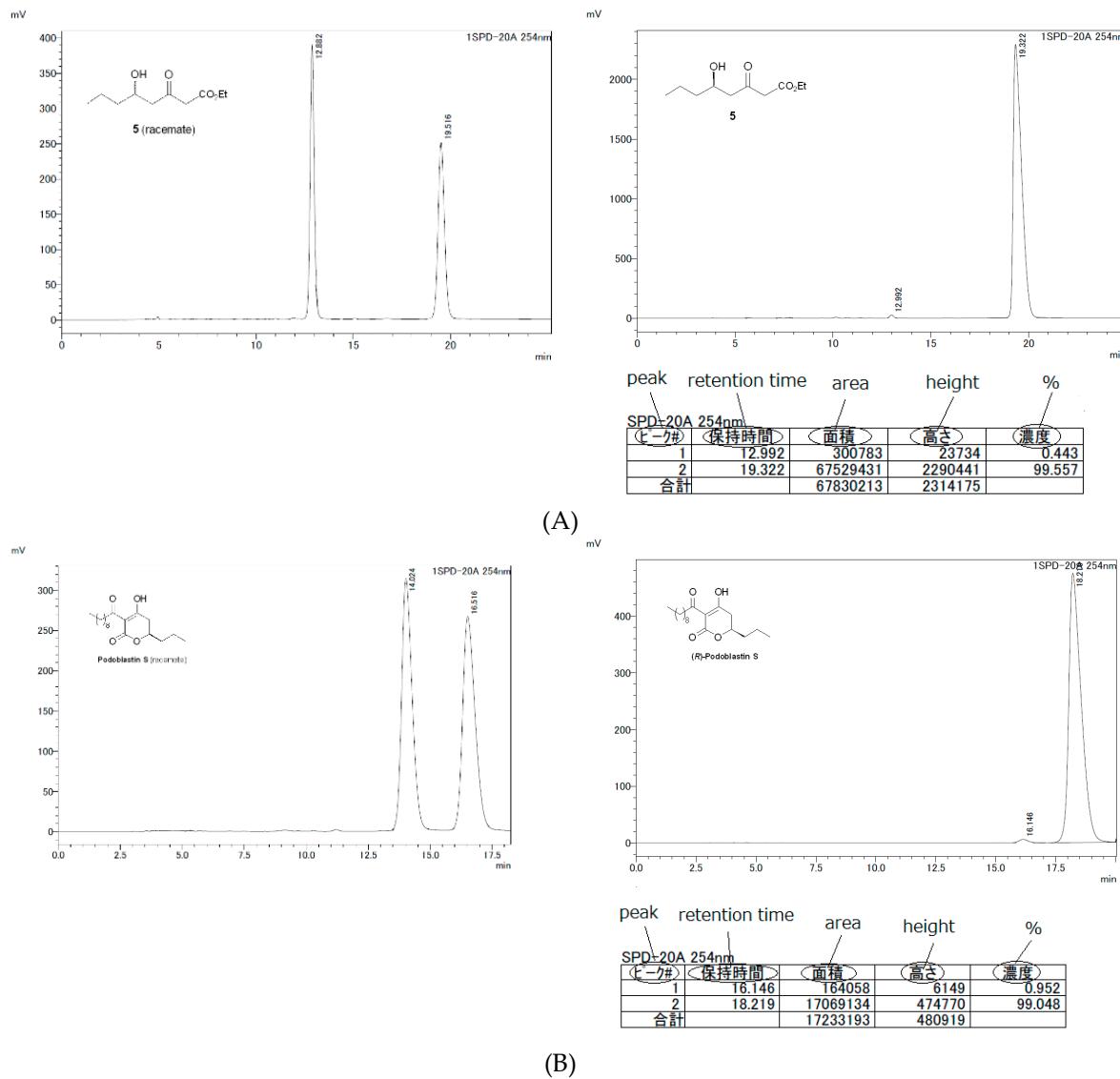
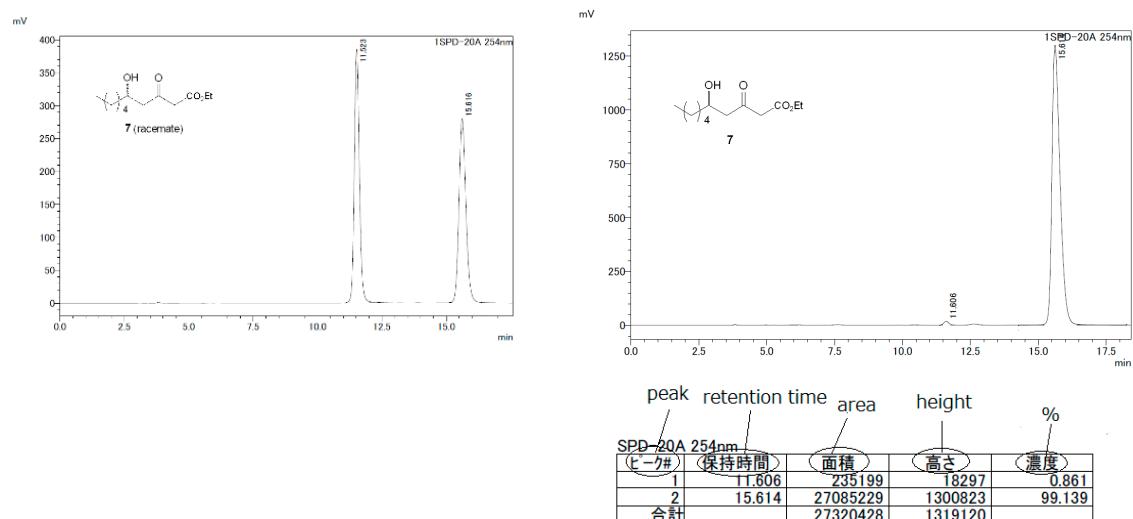


Figure S1. HPLC data of aldol adduct 5 (A) and podoblastin-S (B).



**Figure S2.** HPLC data of aldol adduct **7**.

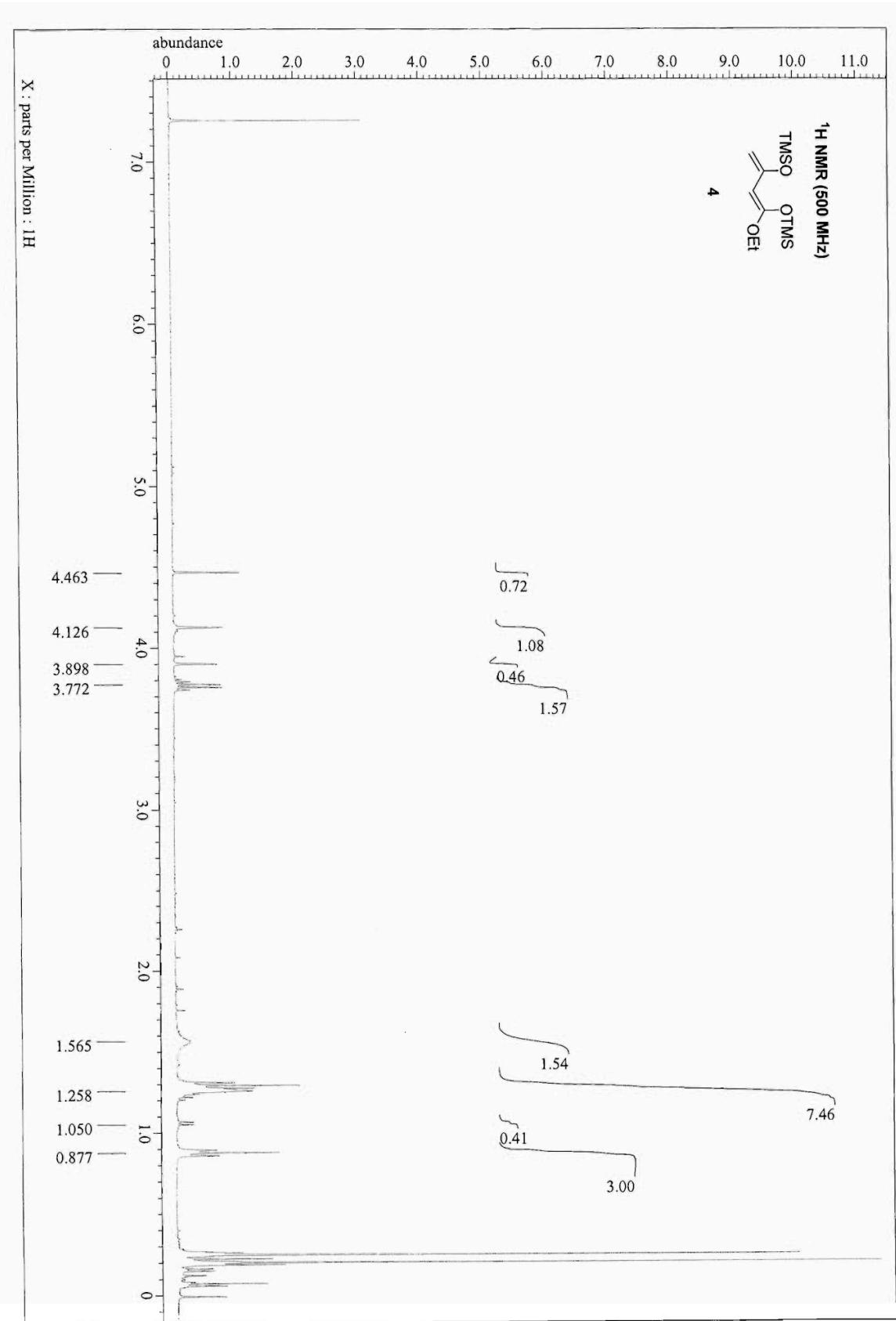
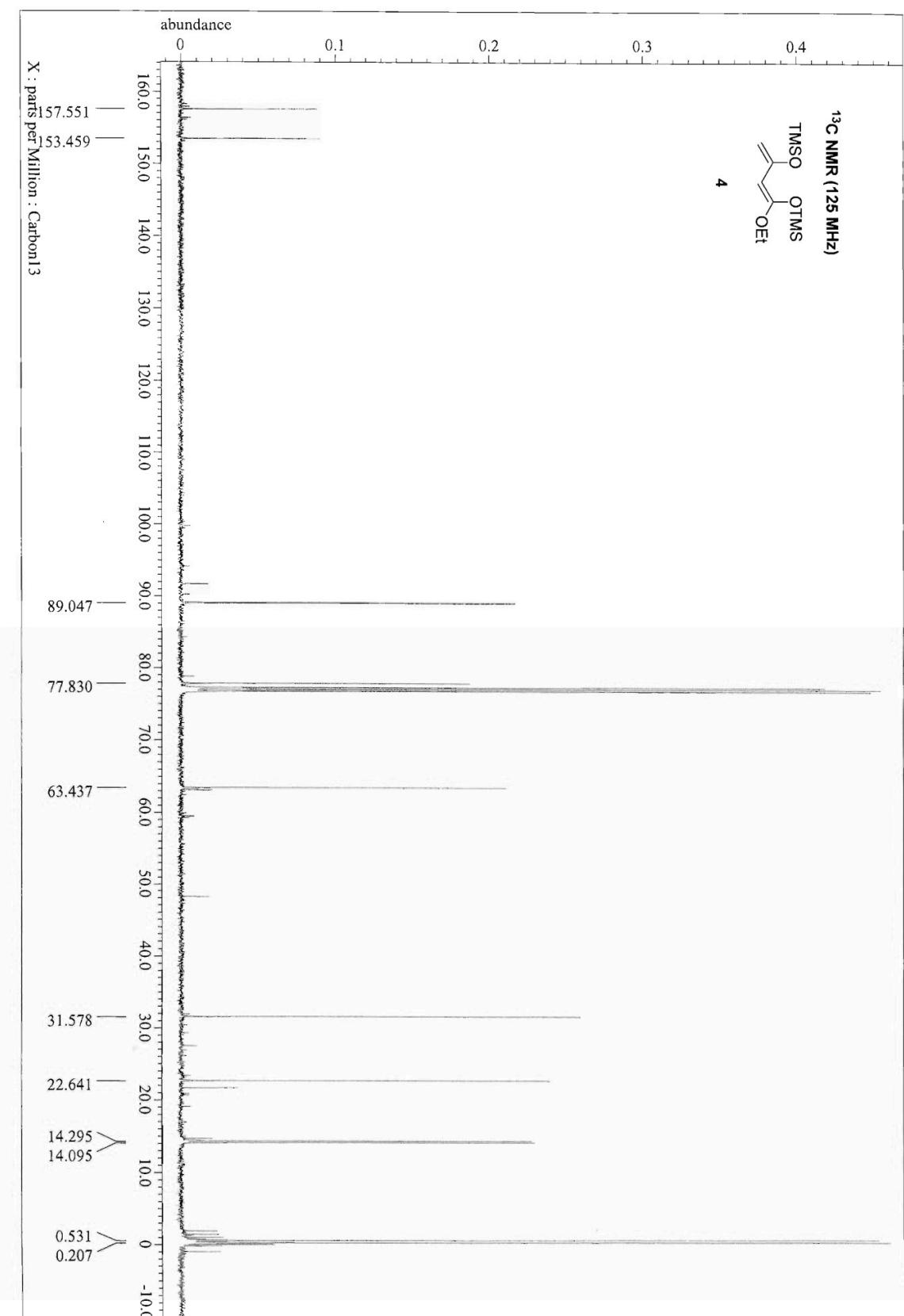
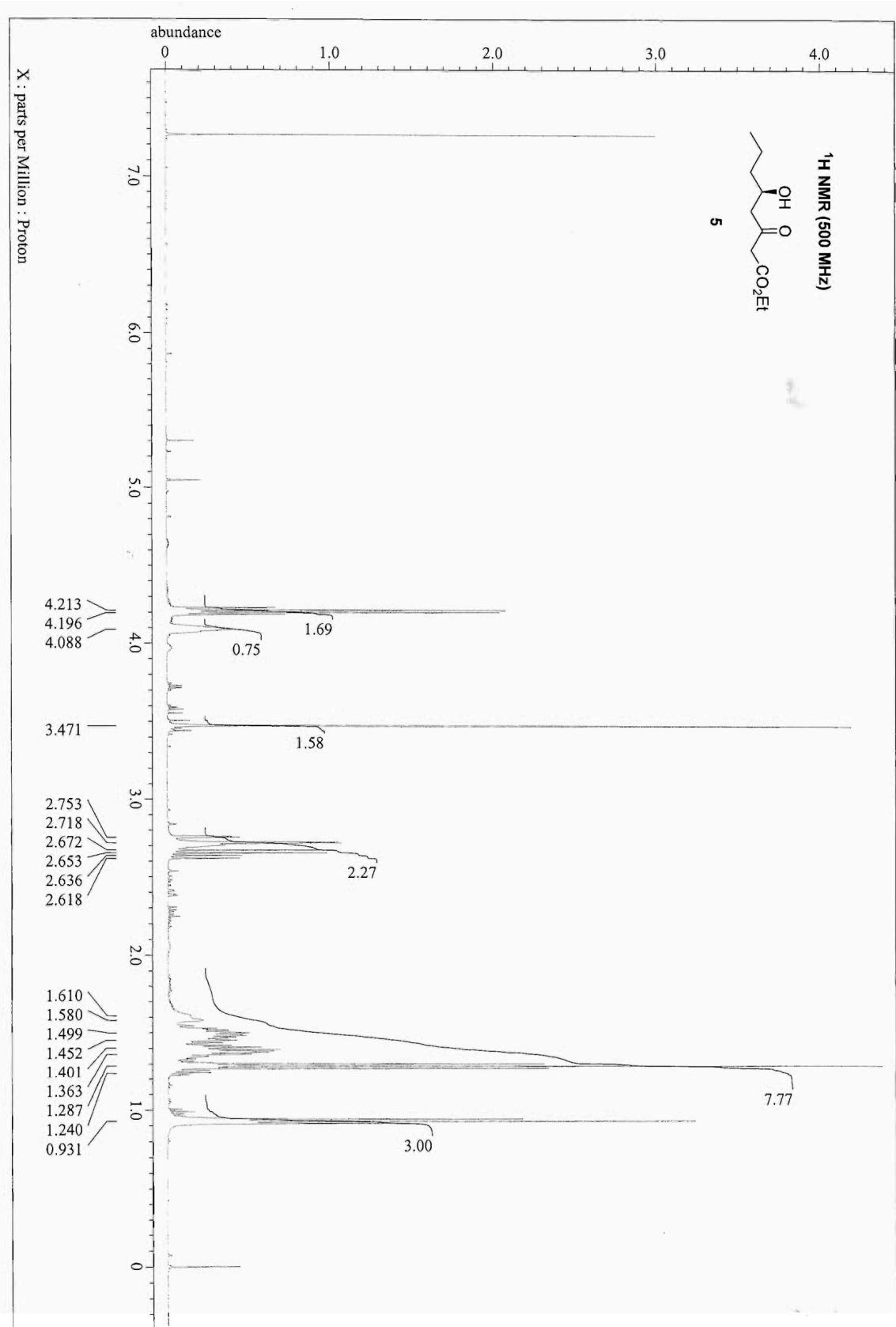


Figure S3. <sup>1</sup>H-NMR chart of 4.



**Figure S4.**  $^{13}\text{C}$ -NMR chart of 4.



**Figure S5.**  $^1\text{H}$ -NMR chart of 5.

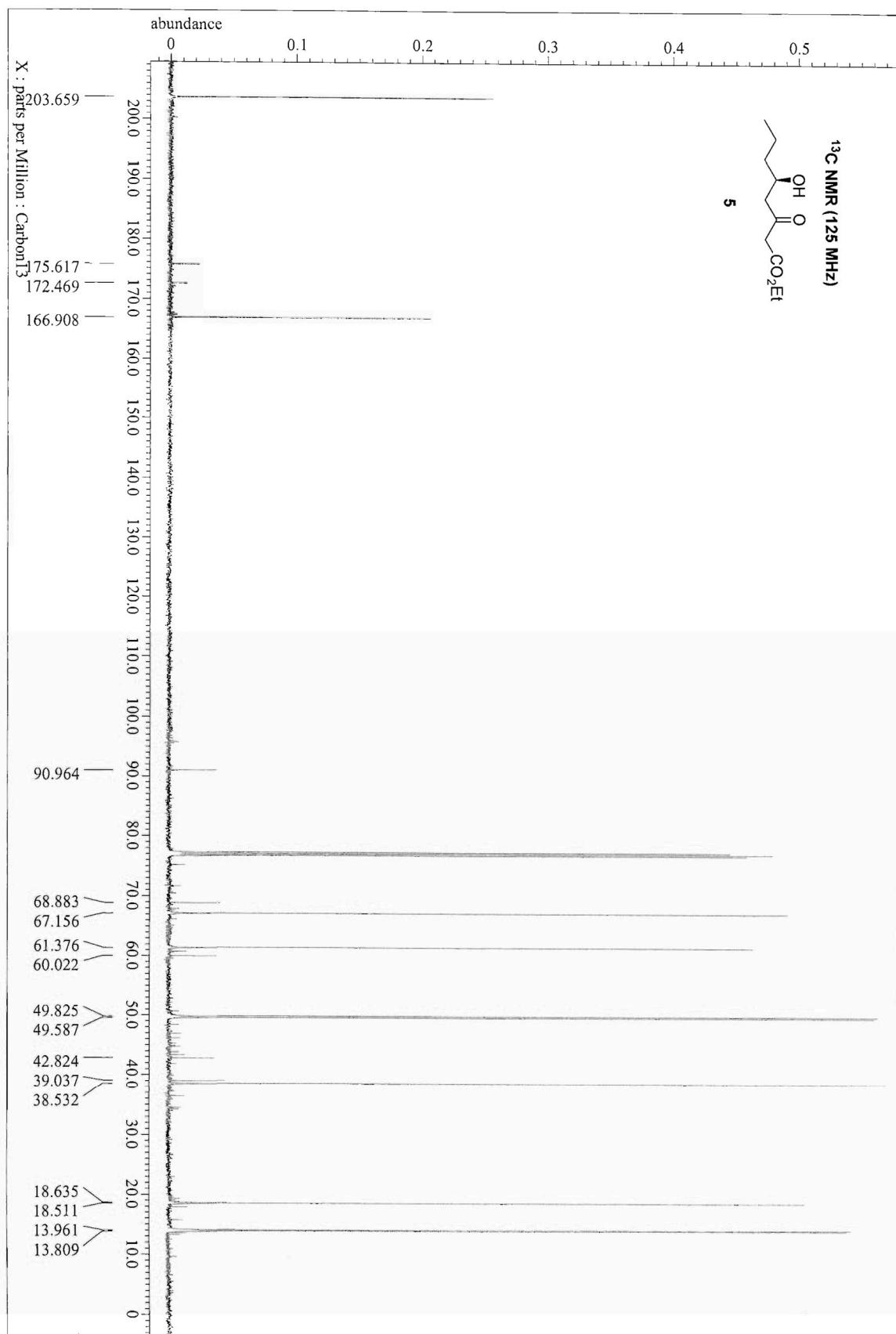
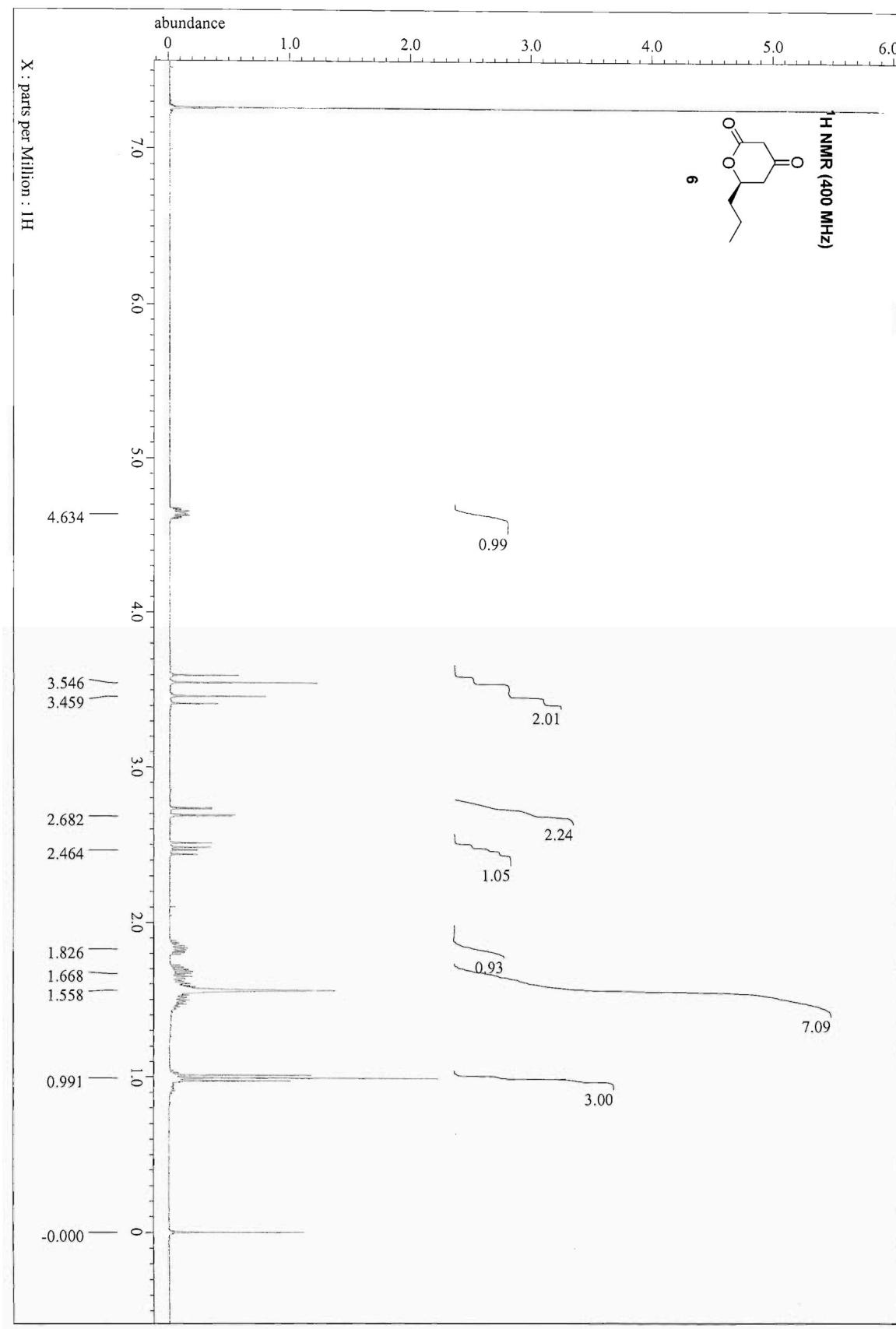


Figure S6. <sup>13</sup>C-NMR chart of 5.

Figure S7. <sup>1</sup>H-NMR chart of 6.

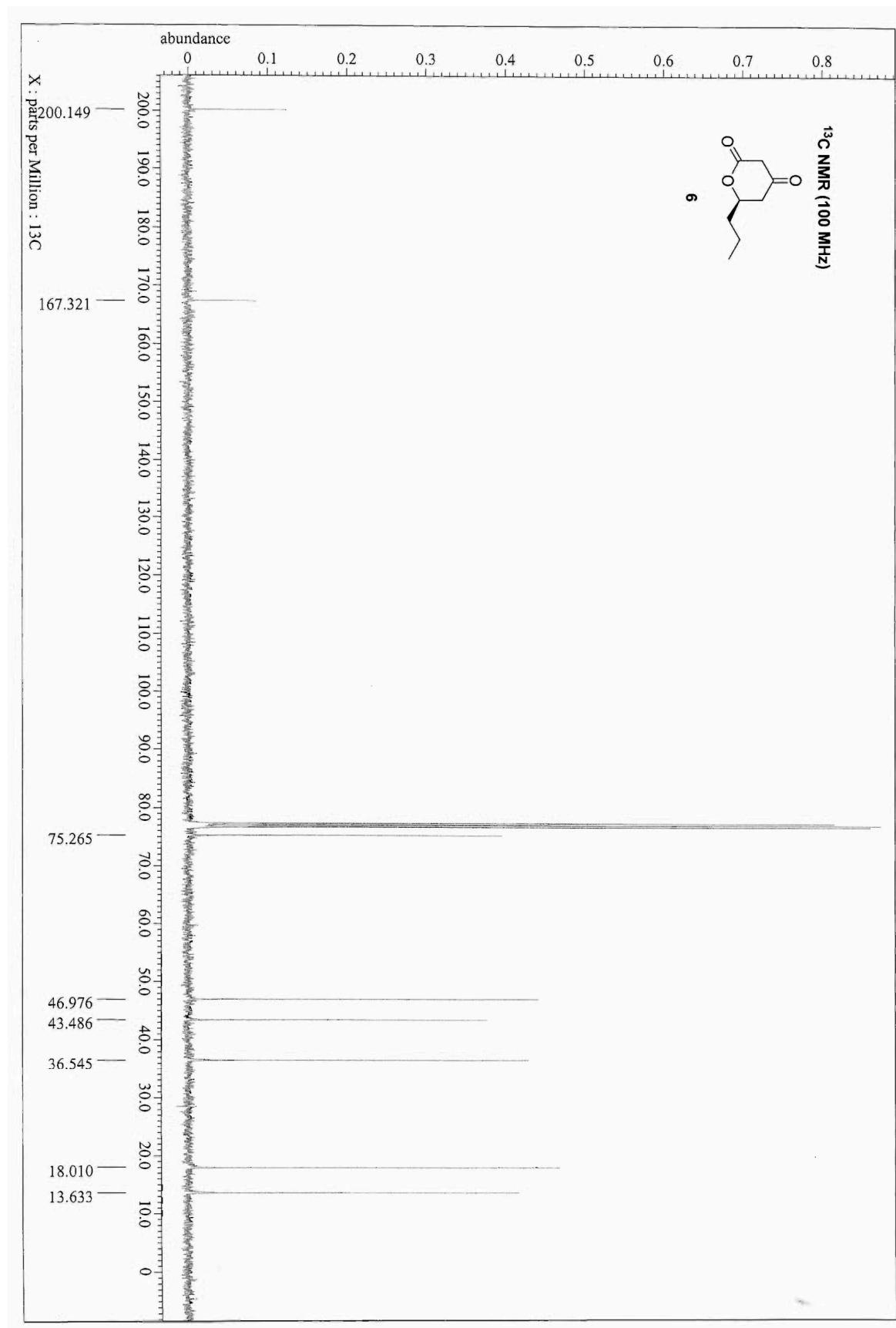
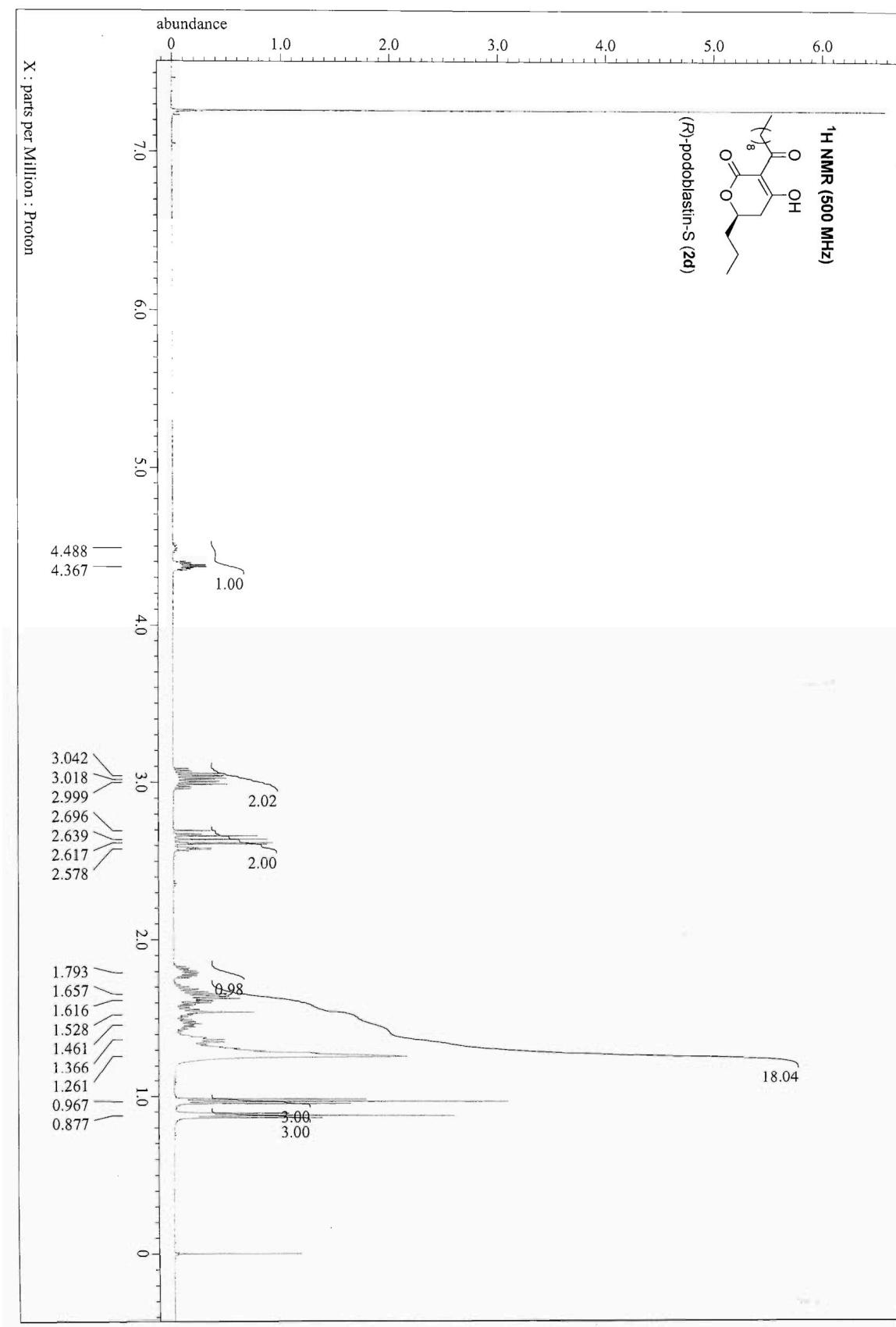
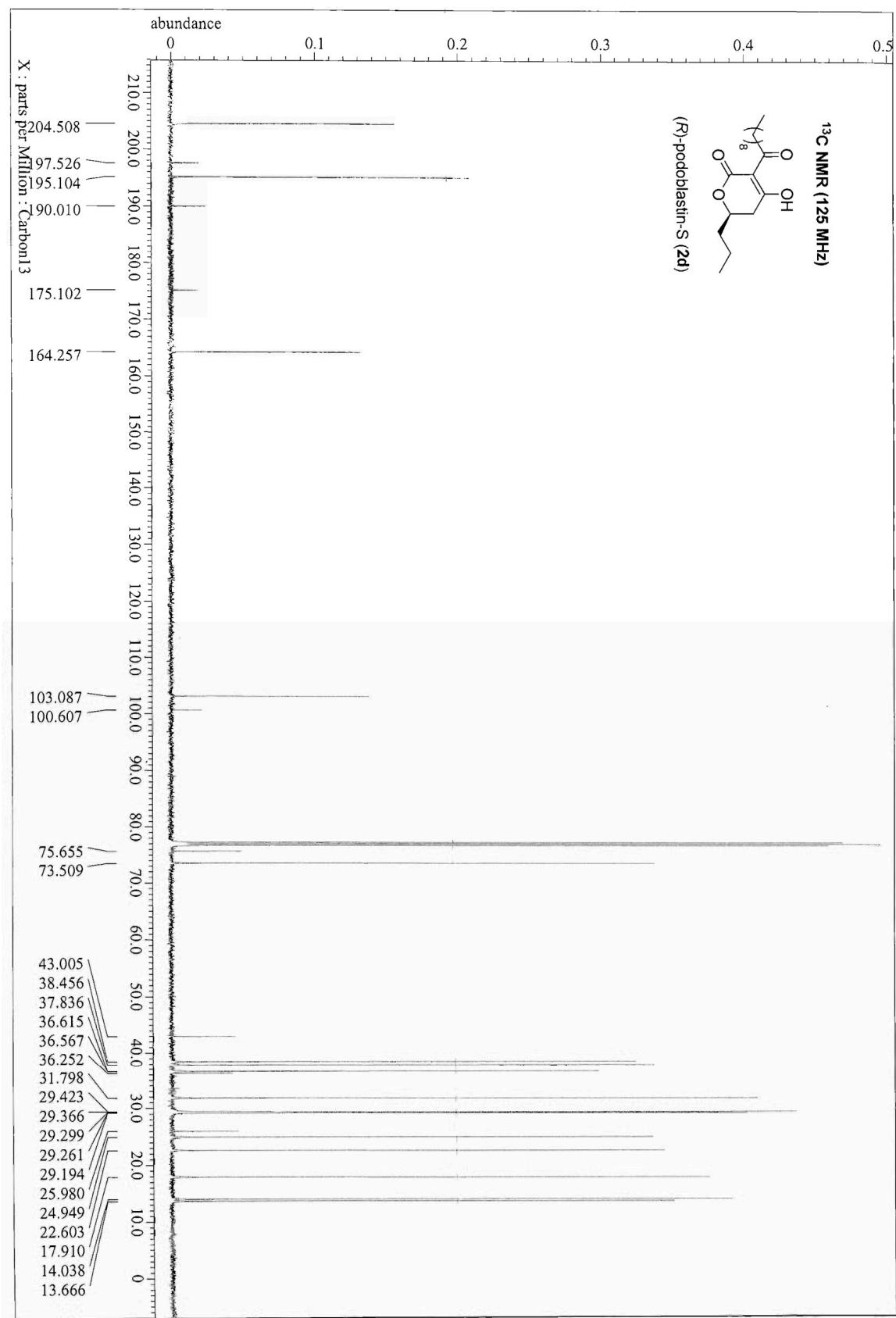


Figure S8.  $^{13}\text{C}$ -NMR chart of 6.



**Figure S9.** <sup>1</sup>H-NMR chart of **2d**.



**Figure S10.** <sup>13</sup>C-NMR chart of **2d**.

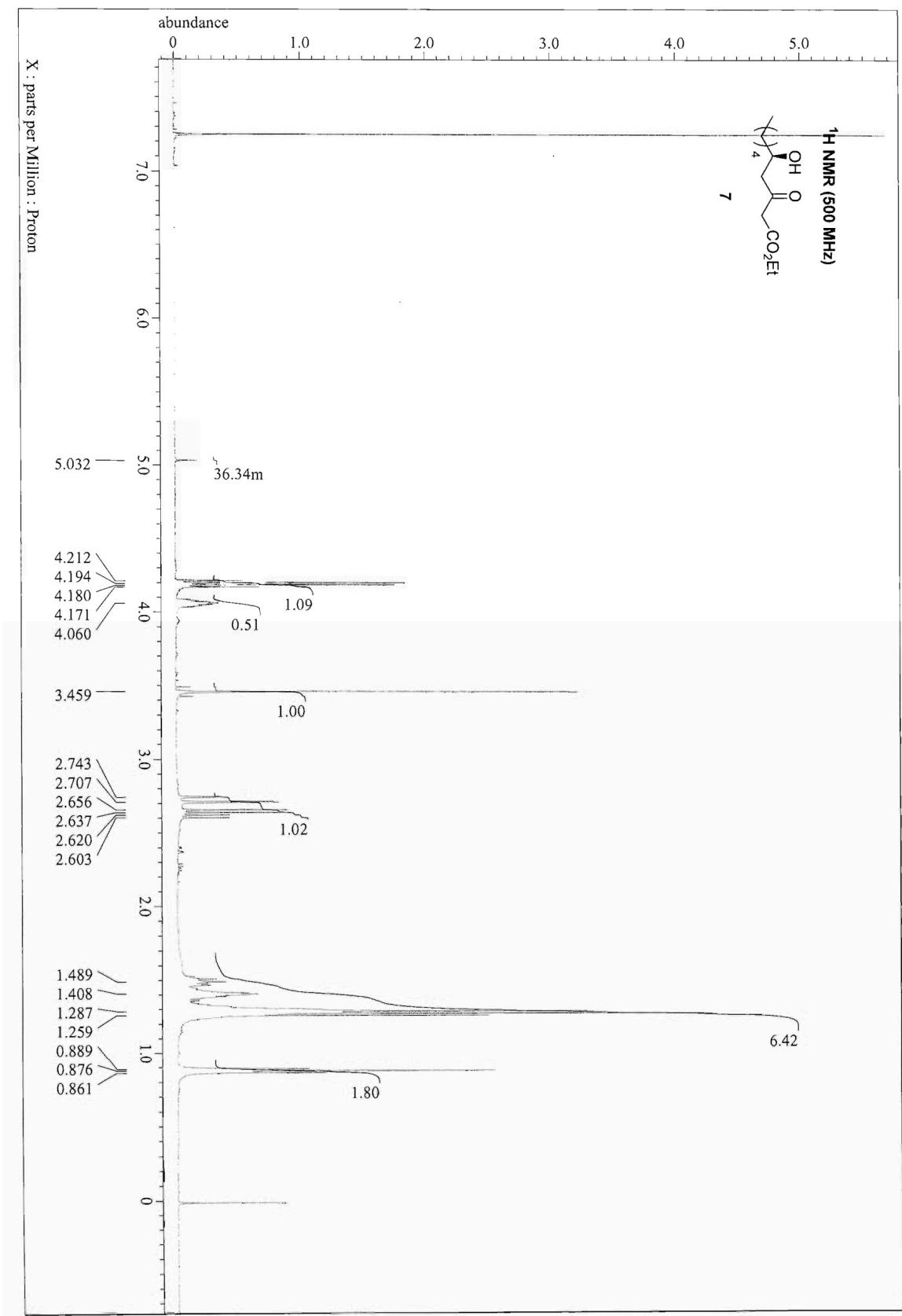
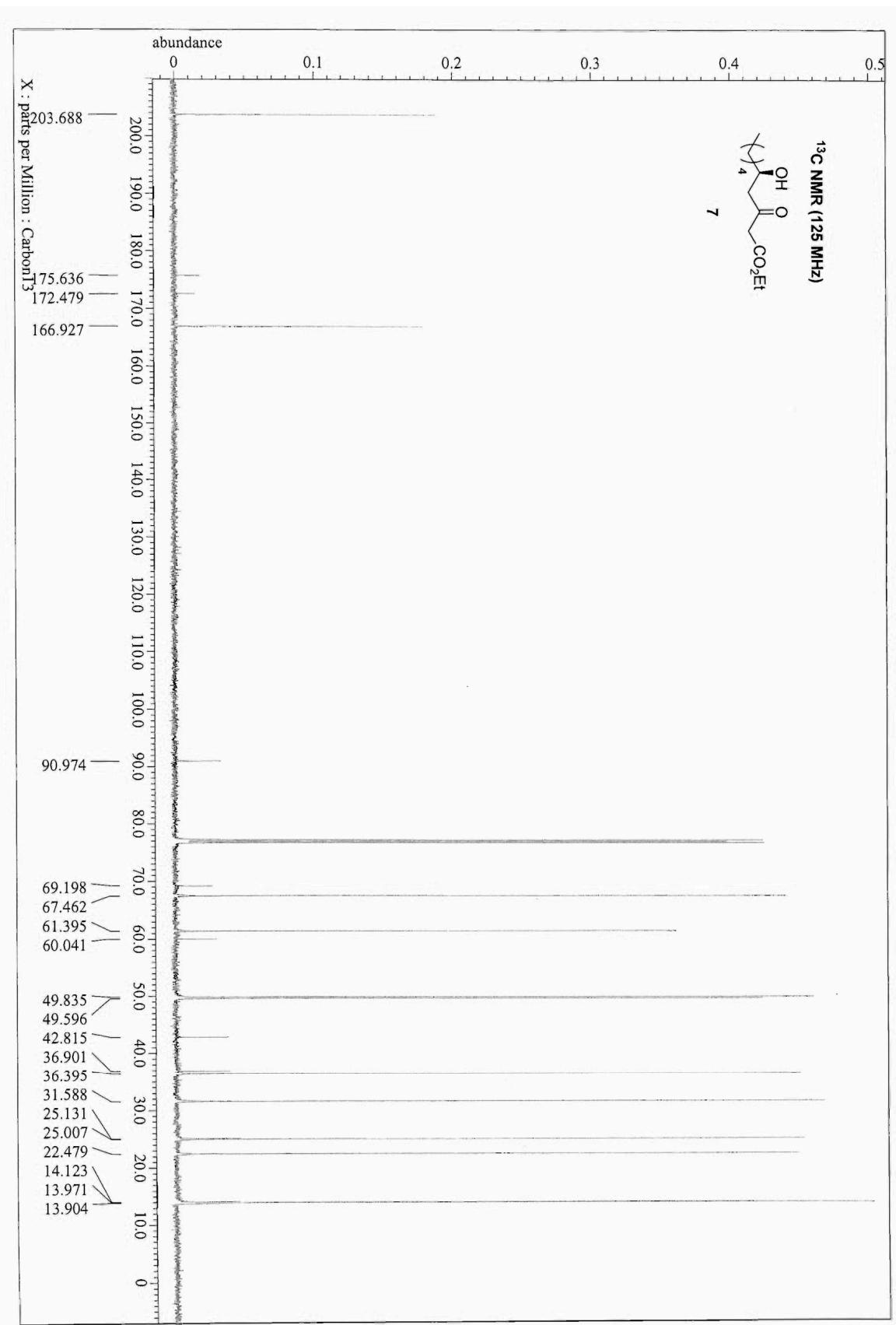
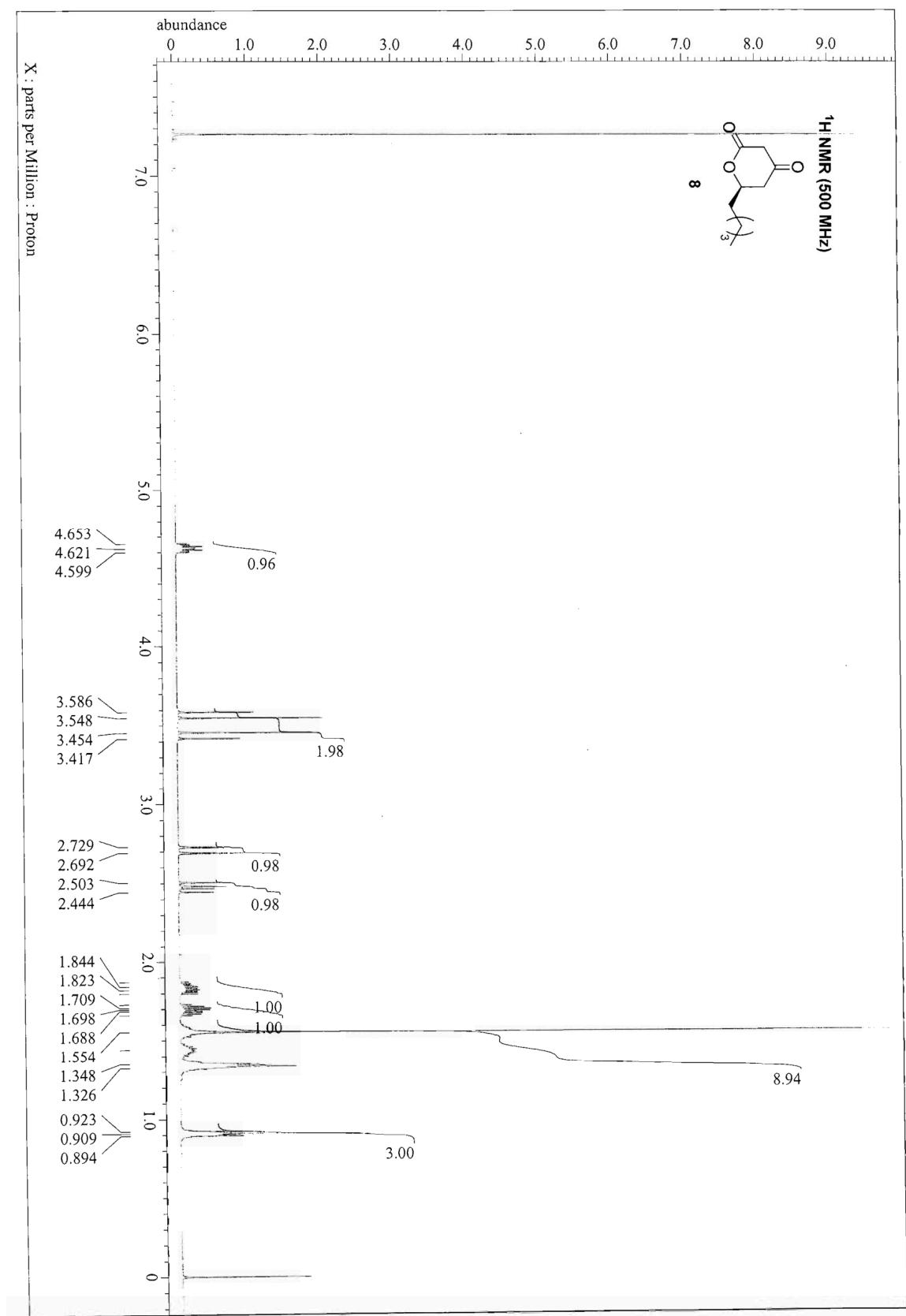
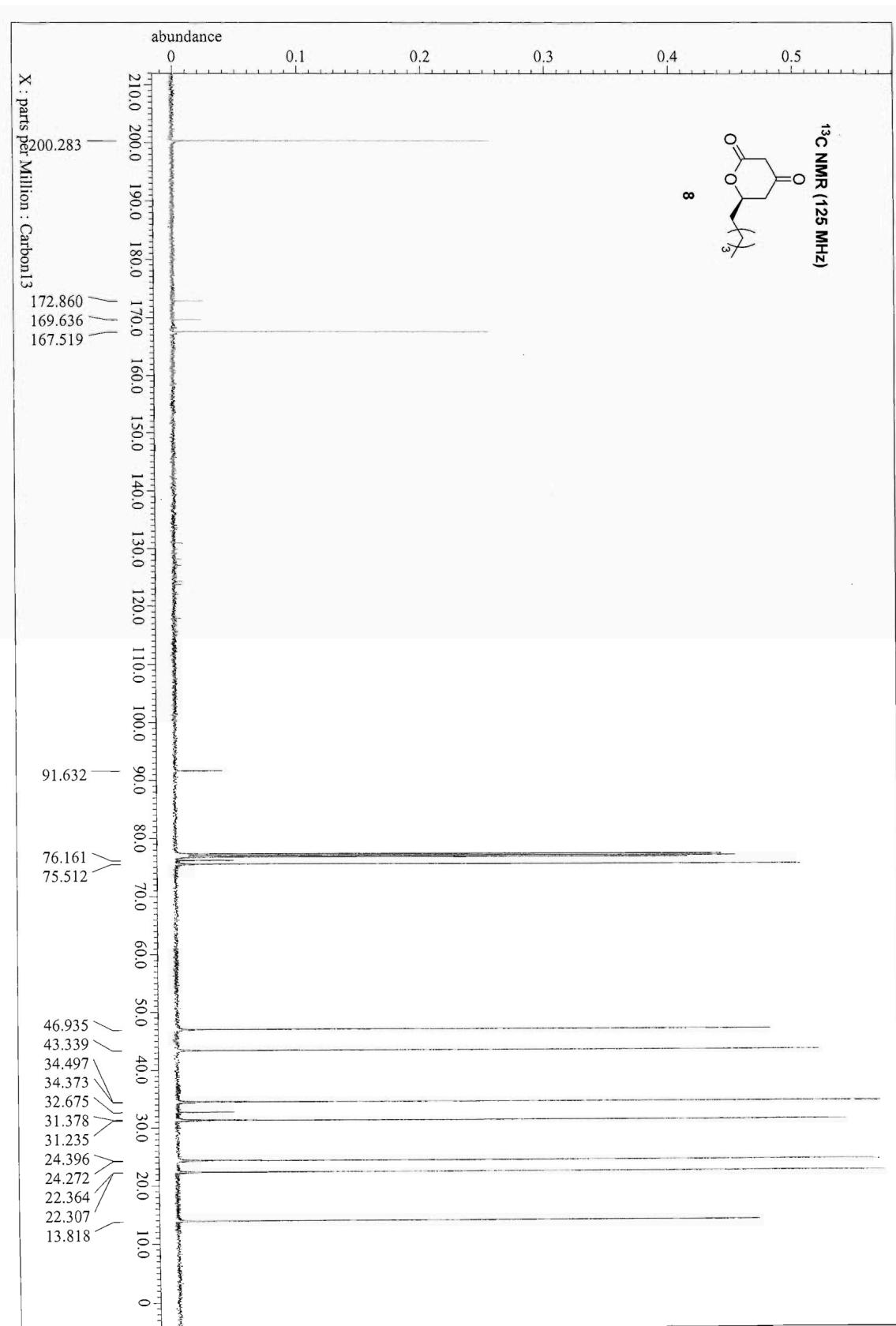


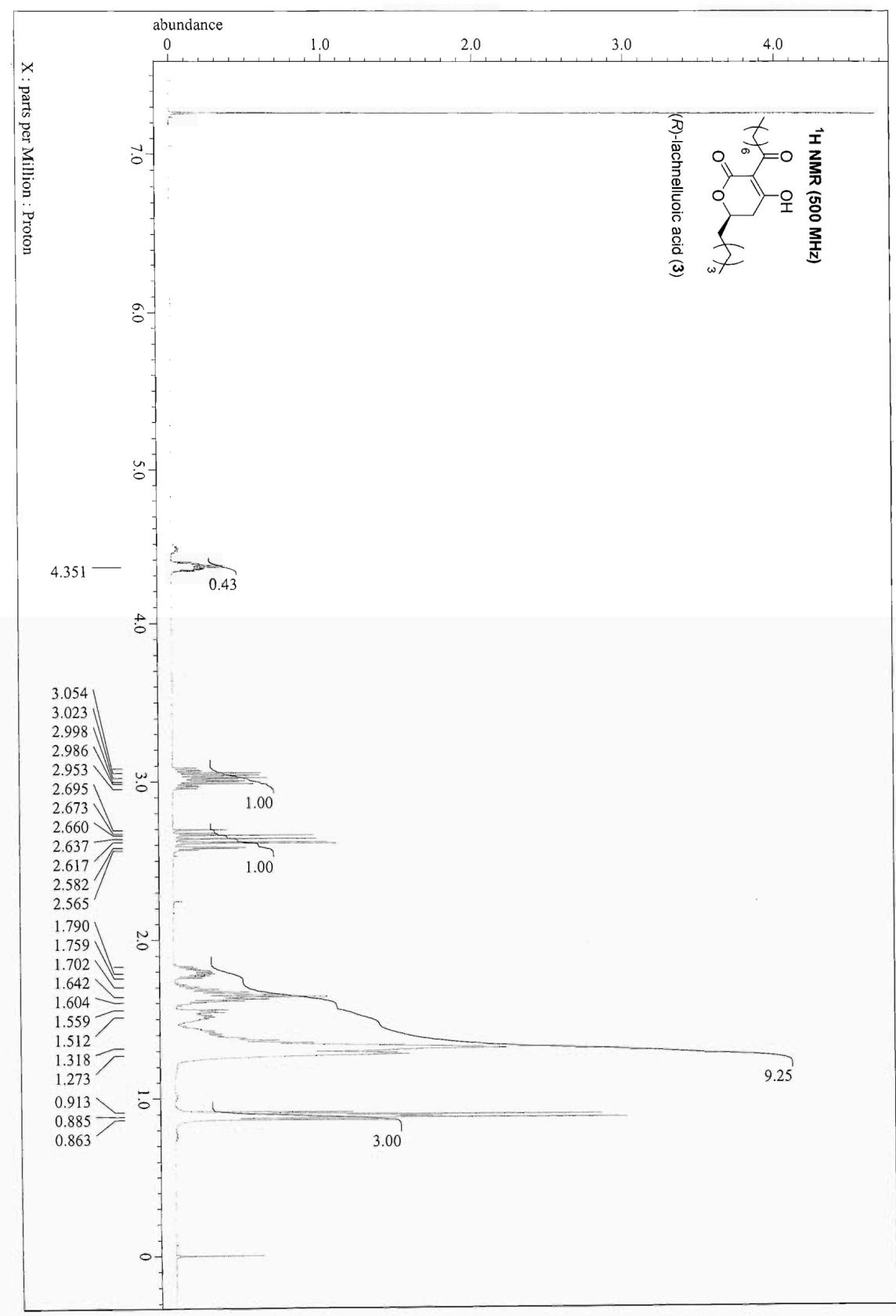
Figure S11.  $^1\text{H}$ -NMR chart of 7.

Figure S12. <sup>13</sup>C-NMR chart of 7.

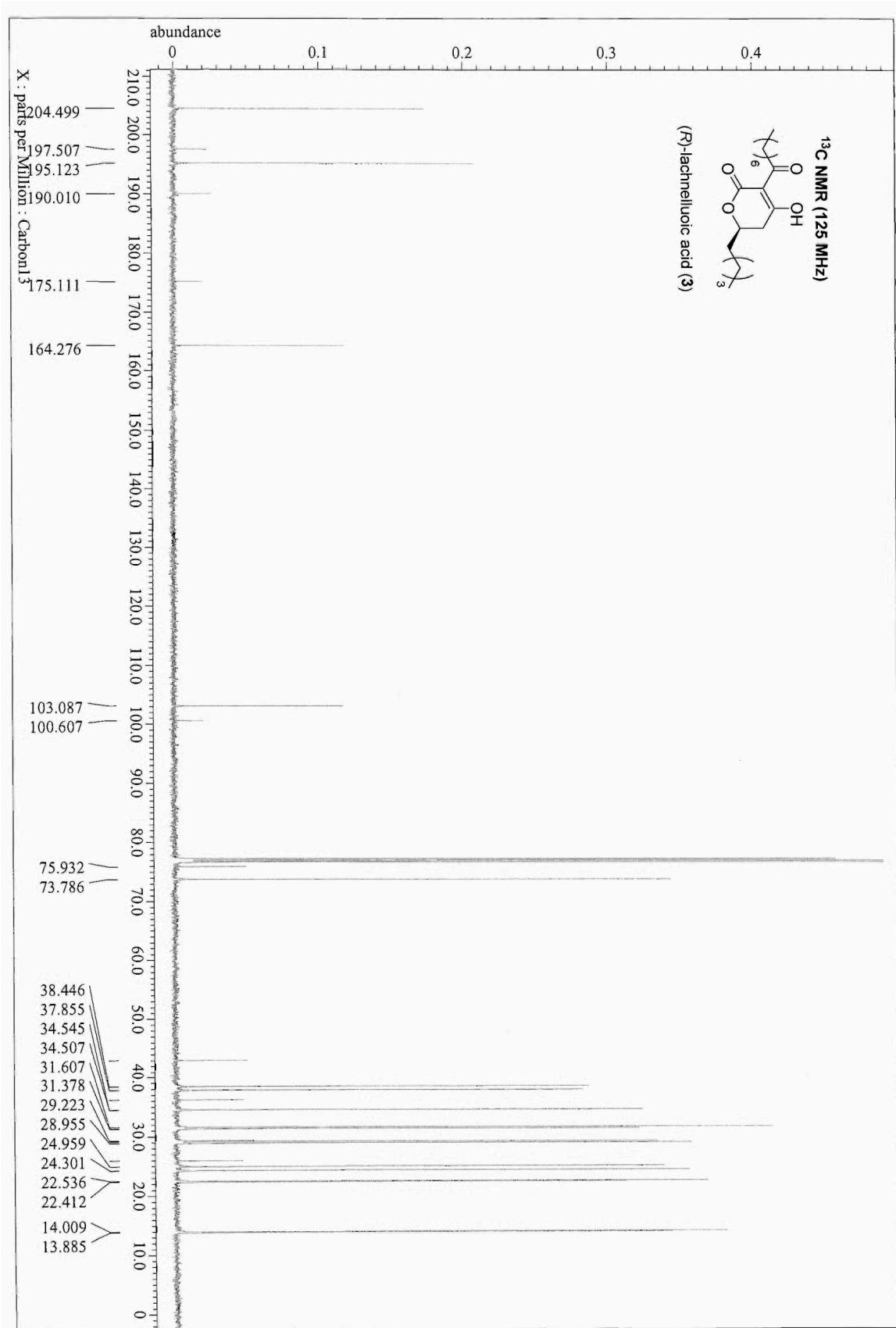
Figure S13. <sup>1</sup>H-NMR chart of 8.



**Figure S14.** <sup>13</sup>C-NMR chart of 8.



**Figure S15.**  $^1\text{H-NMR}$  chart of 3.

Figure S16.  $^{13}\text{C}$ -NMR chart of 3.