

## Supporting Information

### Long-term release of a thiobenzamide from a backbone functionalized poly(lactic acid)

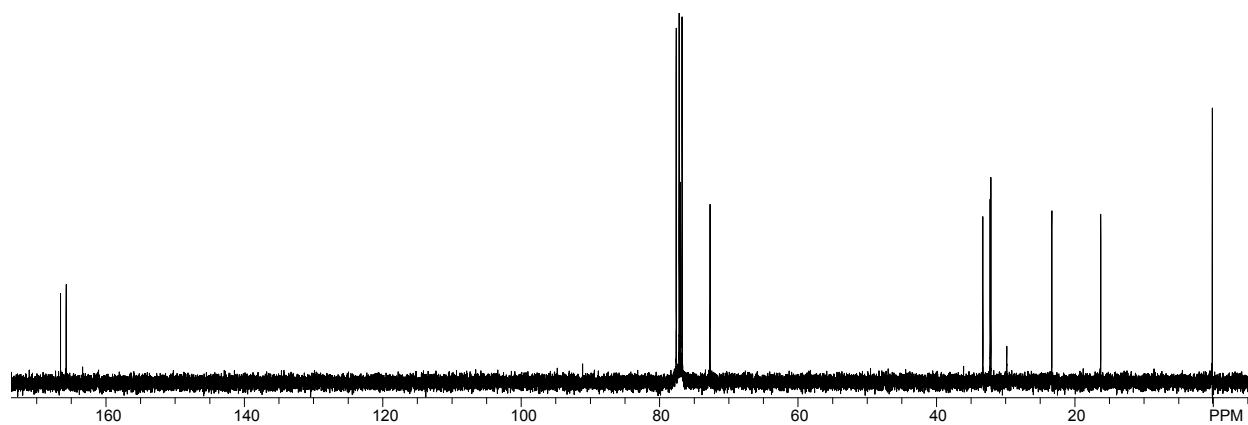
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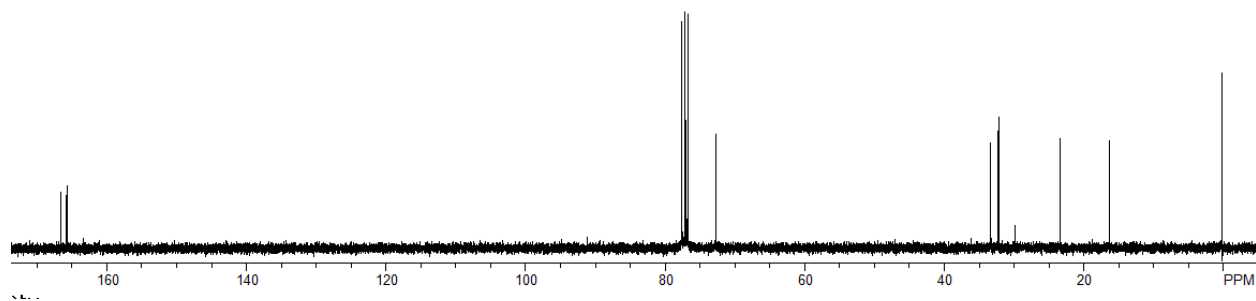
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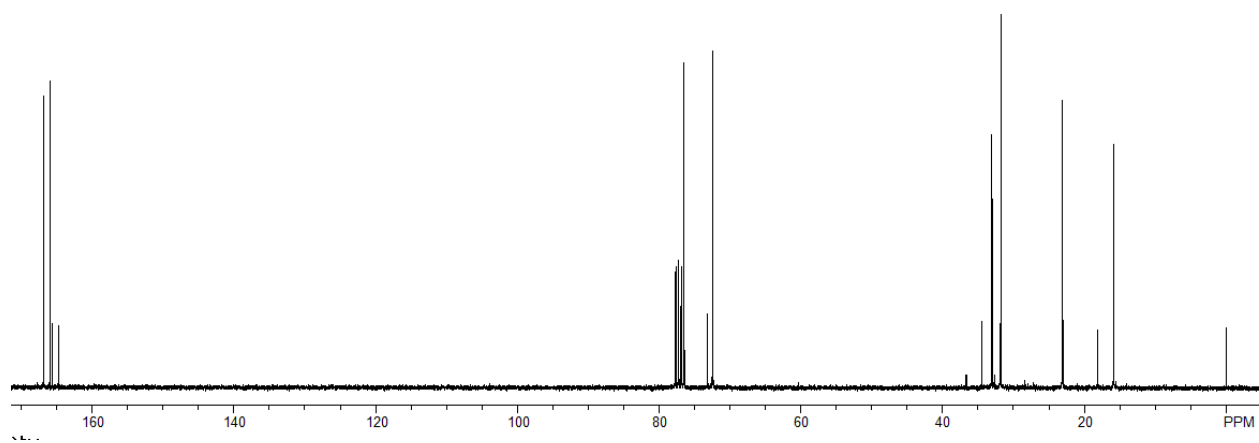
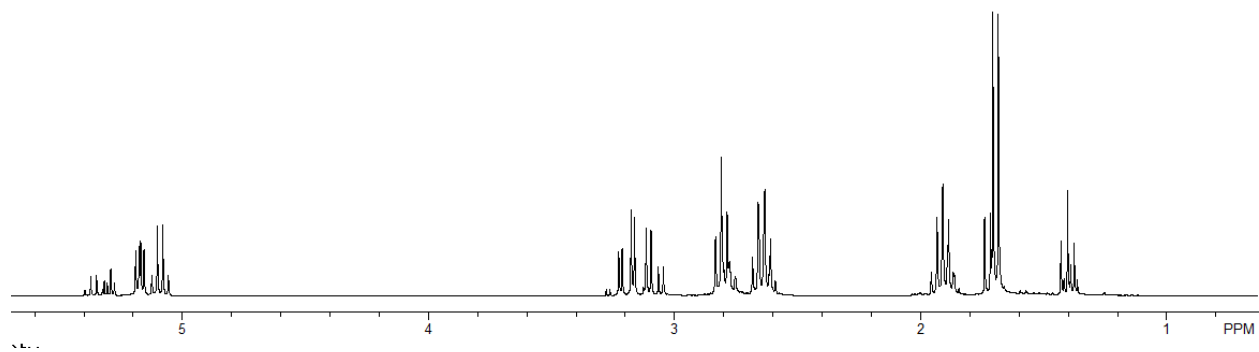
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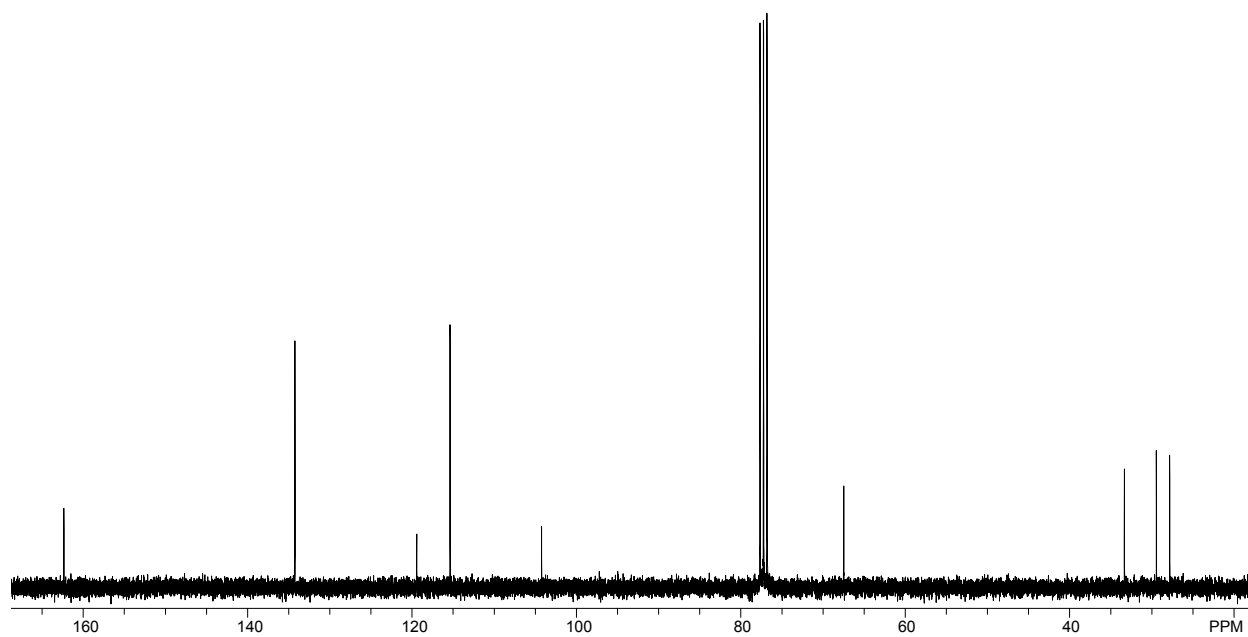
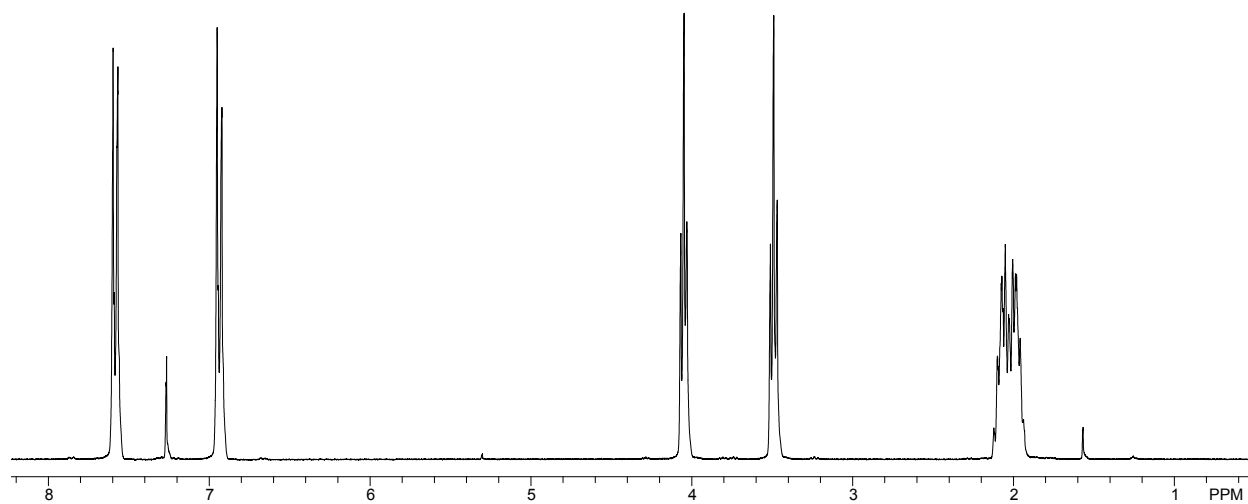
**Figure S1.**  $^{13}\text{C}$  NMR spectrum of the major diastereomer of molecule 3.



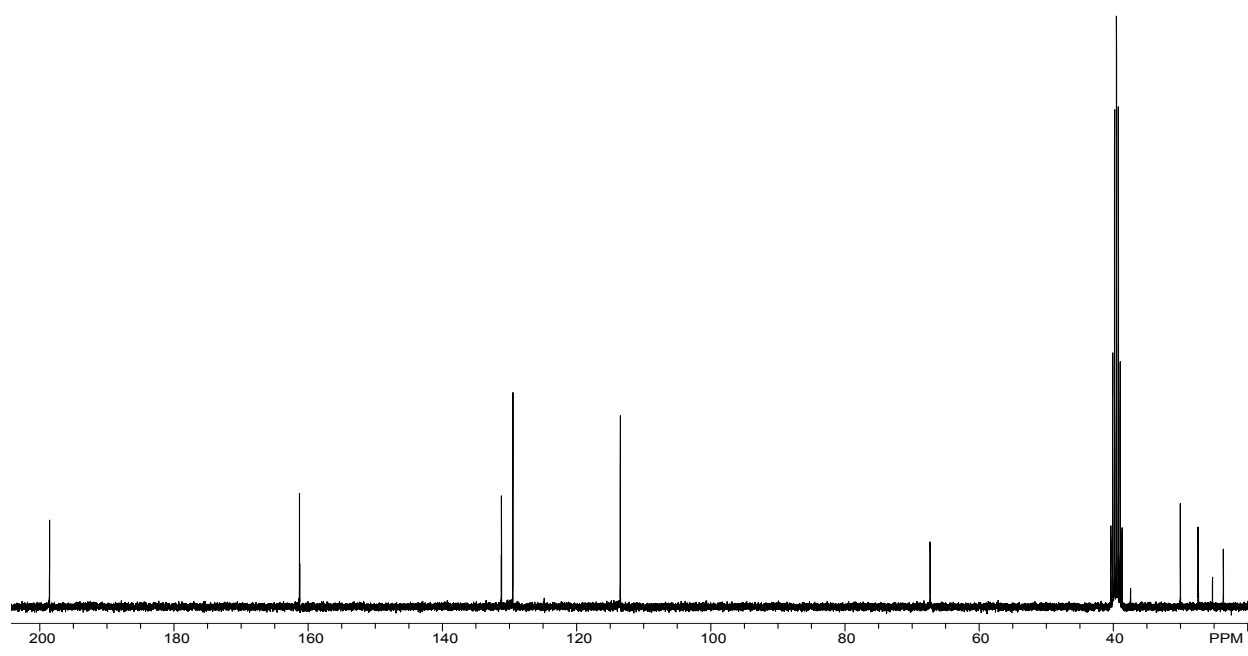
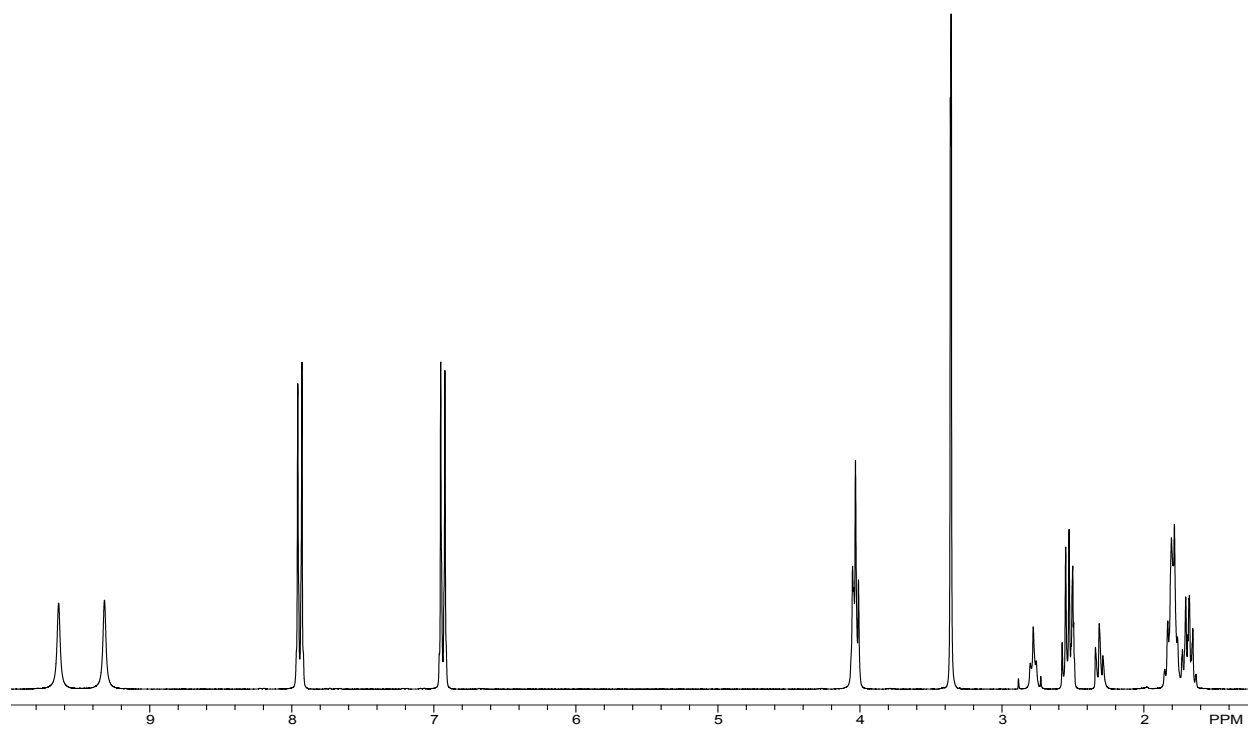
**Figure S2.**  $^{13}\text{C}$  NMR spectrum of the minor diastereomer of molecule 3.



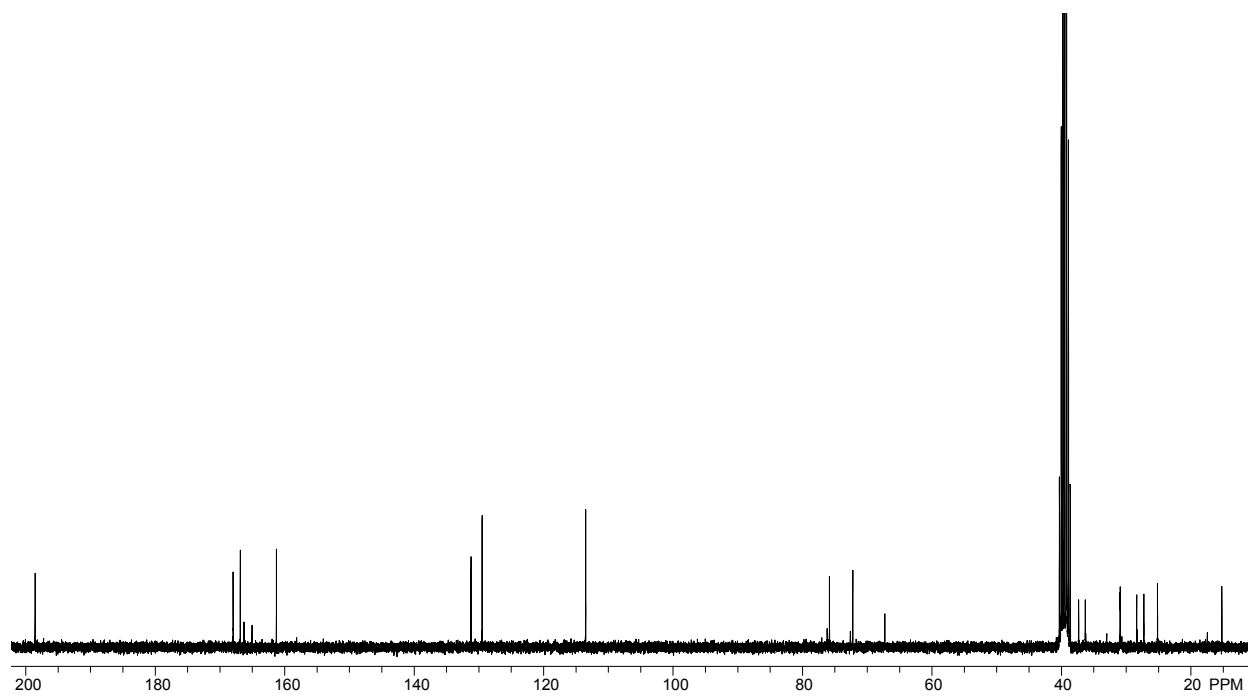
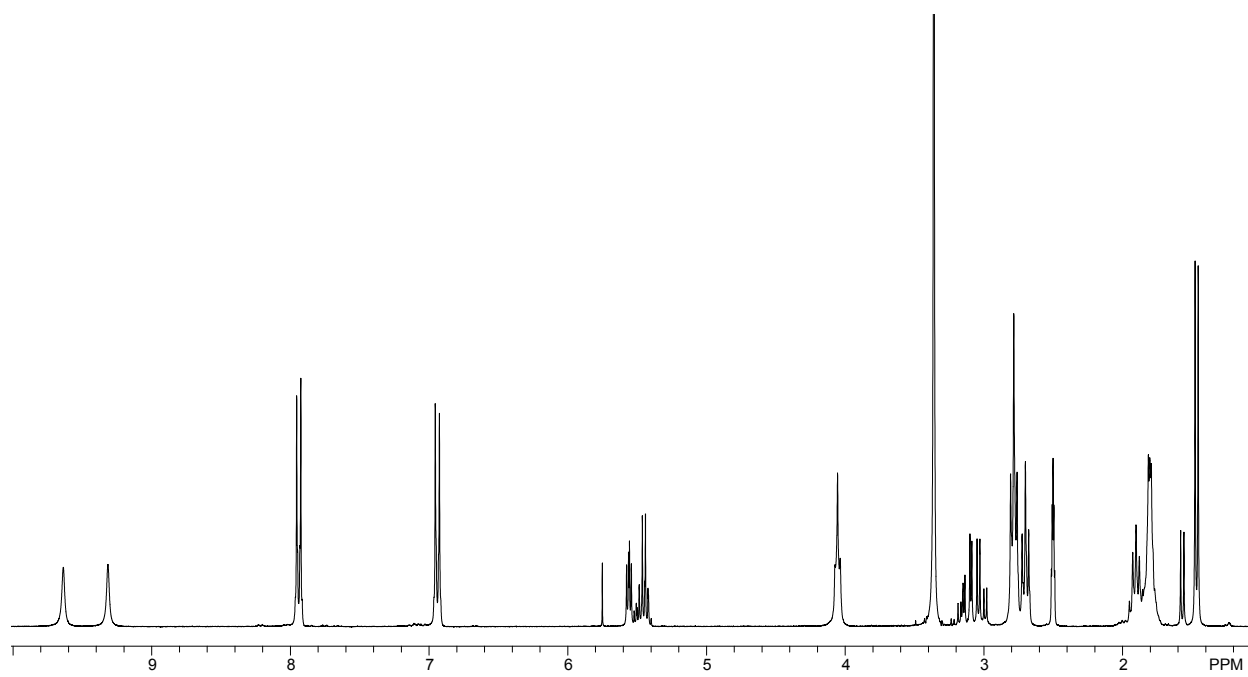
**Figure S3.**  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of molecule 3.



**Figure S4.**  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of molecule 5.



**Figure S5.**  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of molecule 6.

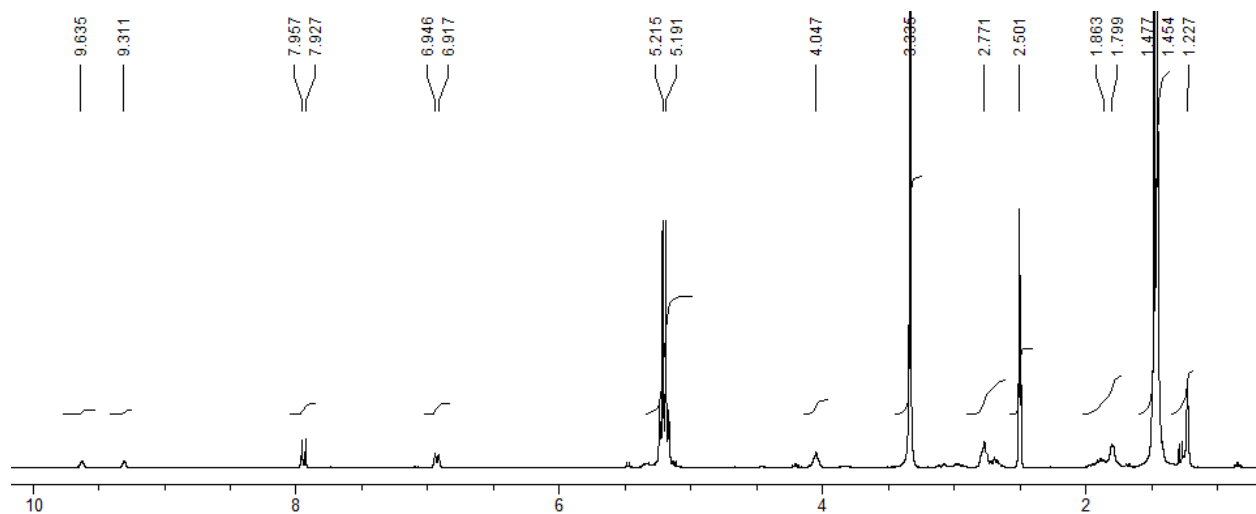


**Figure S6.**  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectra of molecule 7.

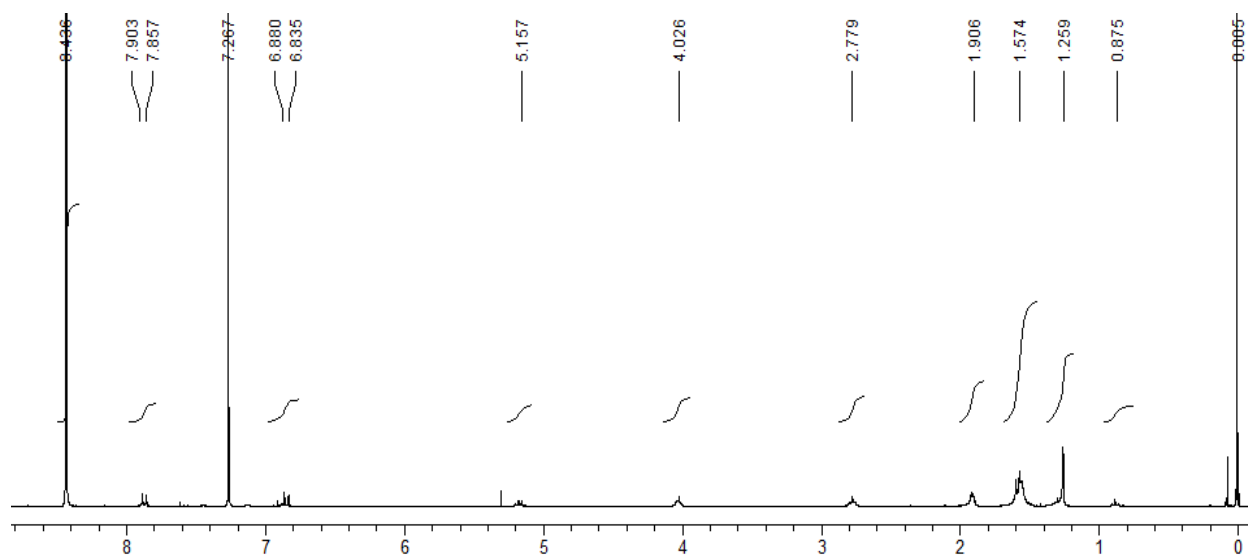
**Degradation of microparticles.** The particles were degraded as described in the paper. The small molecules that were released from the polymer were collected in MeOH, the MeOH was removed by evaporation, and the concentration of any small molecules with thiobenzamide were measured by  $^1\text{H}$  NMR spectroscopy. Because numerous ester groups along the poly(lactic acid) could degrade to release a thiobenzamide, we focused only on measuring the concentration of the distinctive thiobenzamide functional group.

We added a small amount of 1,4-dinitrobenzene as an internal standard for the  $^1\text{H}$  NMR spectroscopy analysis. This molecule has a high boiling point (183 °C at 34 mm Hg) and a peak at 8.44 ppm. The addition of a known amount of 1,4-dinitrobenzene to a sample of extracts from the degradation allowed the determination of the amount of thiobenzamides released.

In Figure S7 we show a representative  $^1\text{H}$  NMR spectrum of the extracts from the degradation of the particles after 2 weeks. The peaks for lactic acid are most intense. In Figure S8 we show a representative  $^1\text{H}$  NMR spectrum of 1,4-dinitrobenzene with the extracts from the degradation.



**Figure S7.**  $^1\text{H}$  NMR Spectrum of the degradation products from the microparticles at pH 7.4 for two weeks.



**Figure S8.** A representative <sup>1</sup>H NMR spectrum of 1,4-dinitrobenzene added to the extracts from a degradation of microparticles.