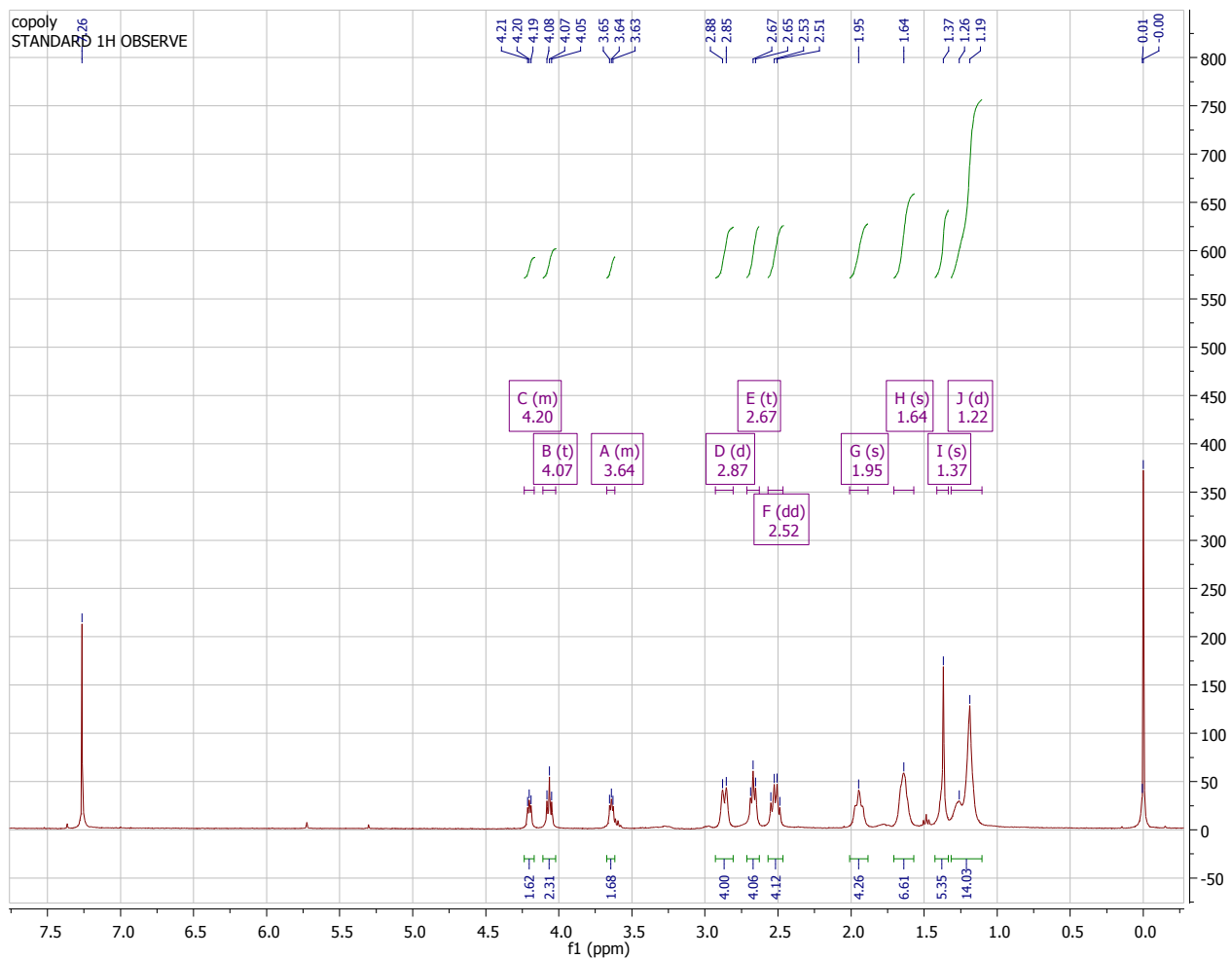


# Multi-response strategies to modulate burst degradation and release from nanoparticles

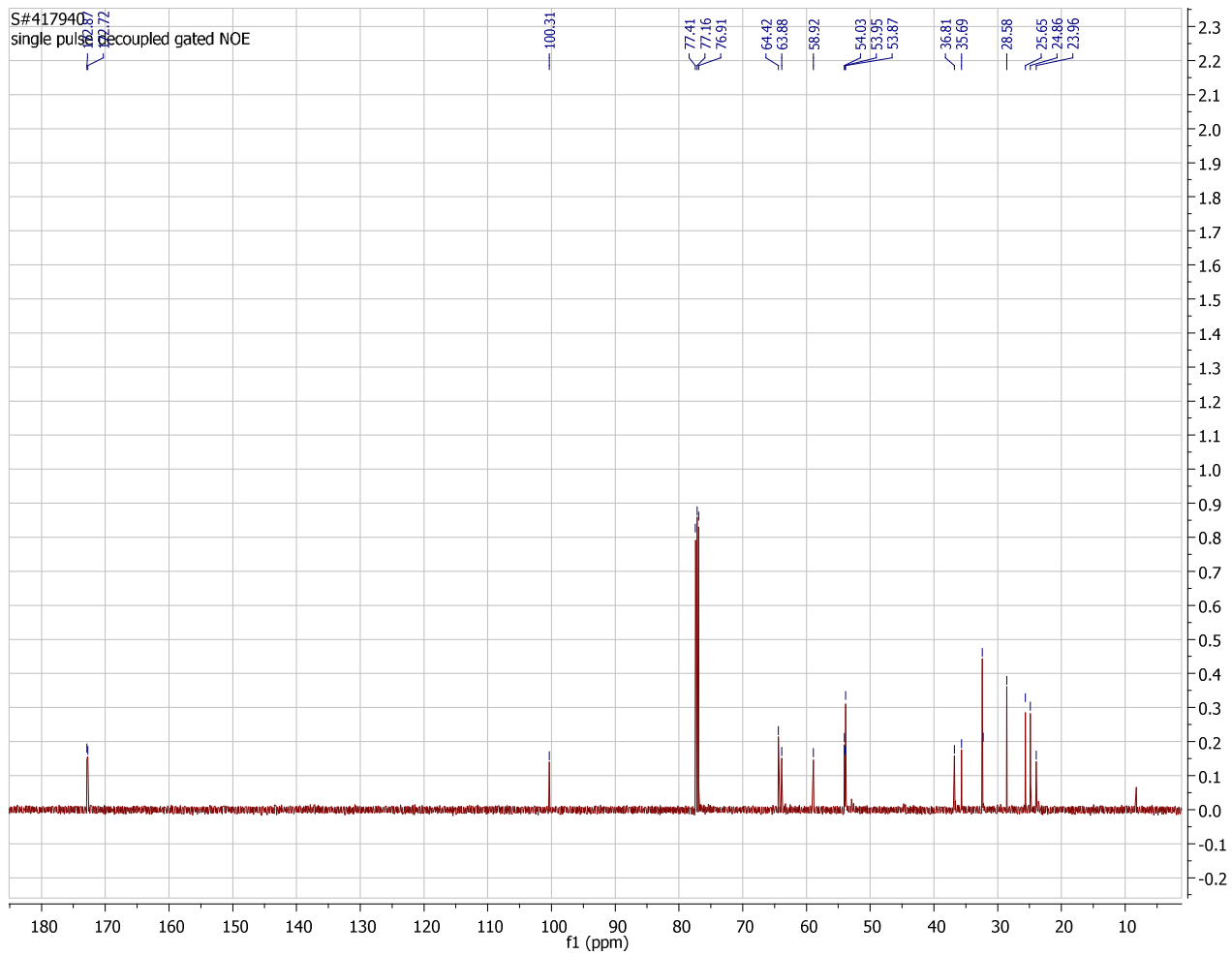
*Jagadis Sankaranarayanan,<sup>1</sup> Enas A. Mahmoud,<sup>1</sup> Gloria Kim,<sup>1</sup> José M. Morachis,<sup>1</sup> and Adah  
Almutairi,<sup>1,2\*</sup>*

<sup>1</sup>Pharmaceutical Sciences, <sup>2</sup>Materials Science and Engineering, University of California at San Diego,  
La Jolla, CA 92093-0657

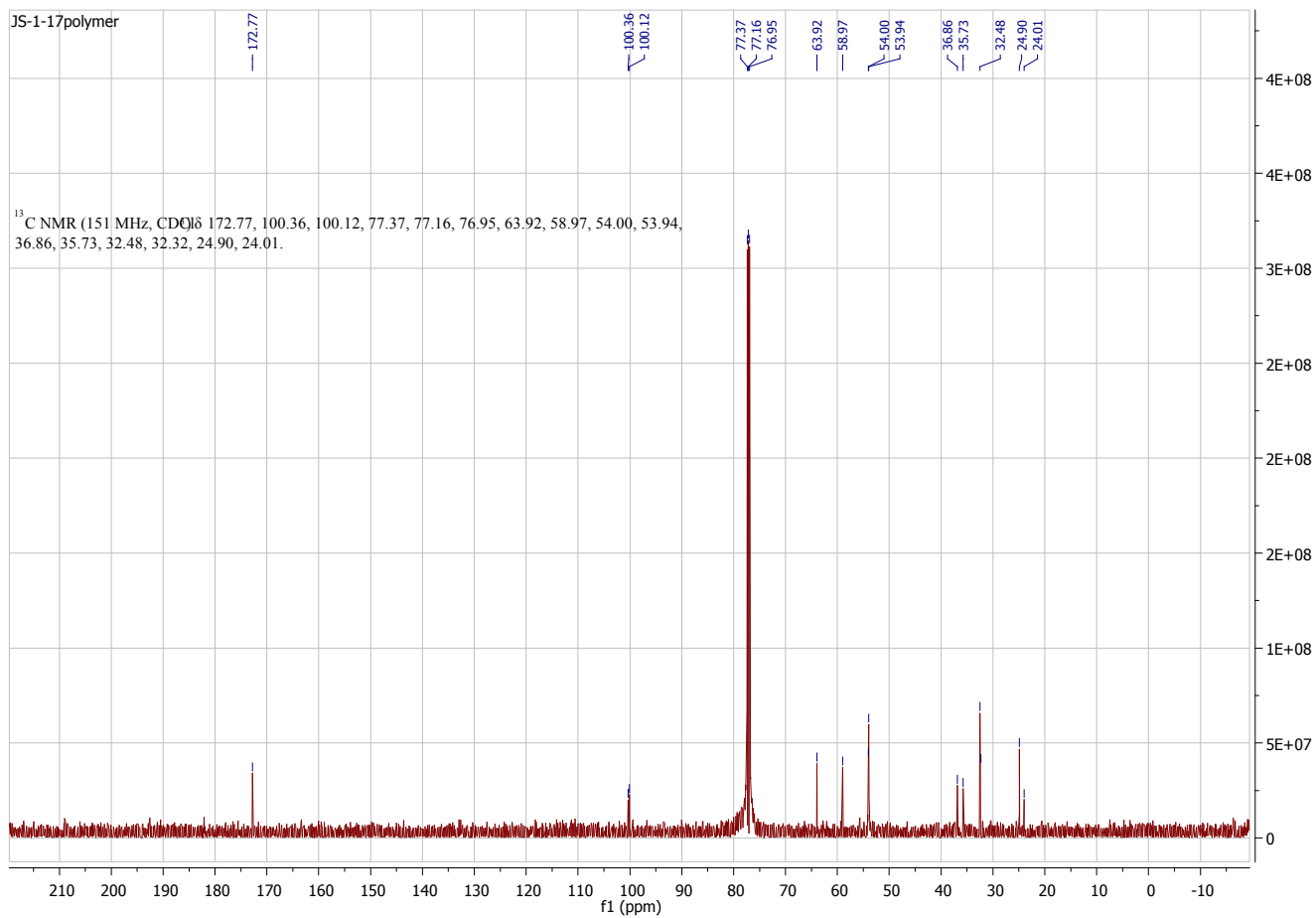
aalmutairi@ucsd.edu



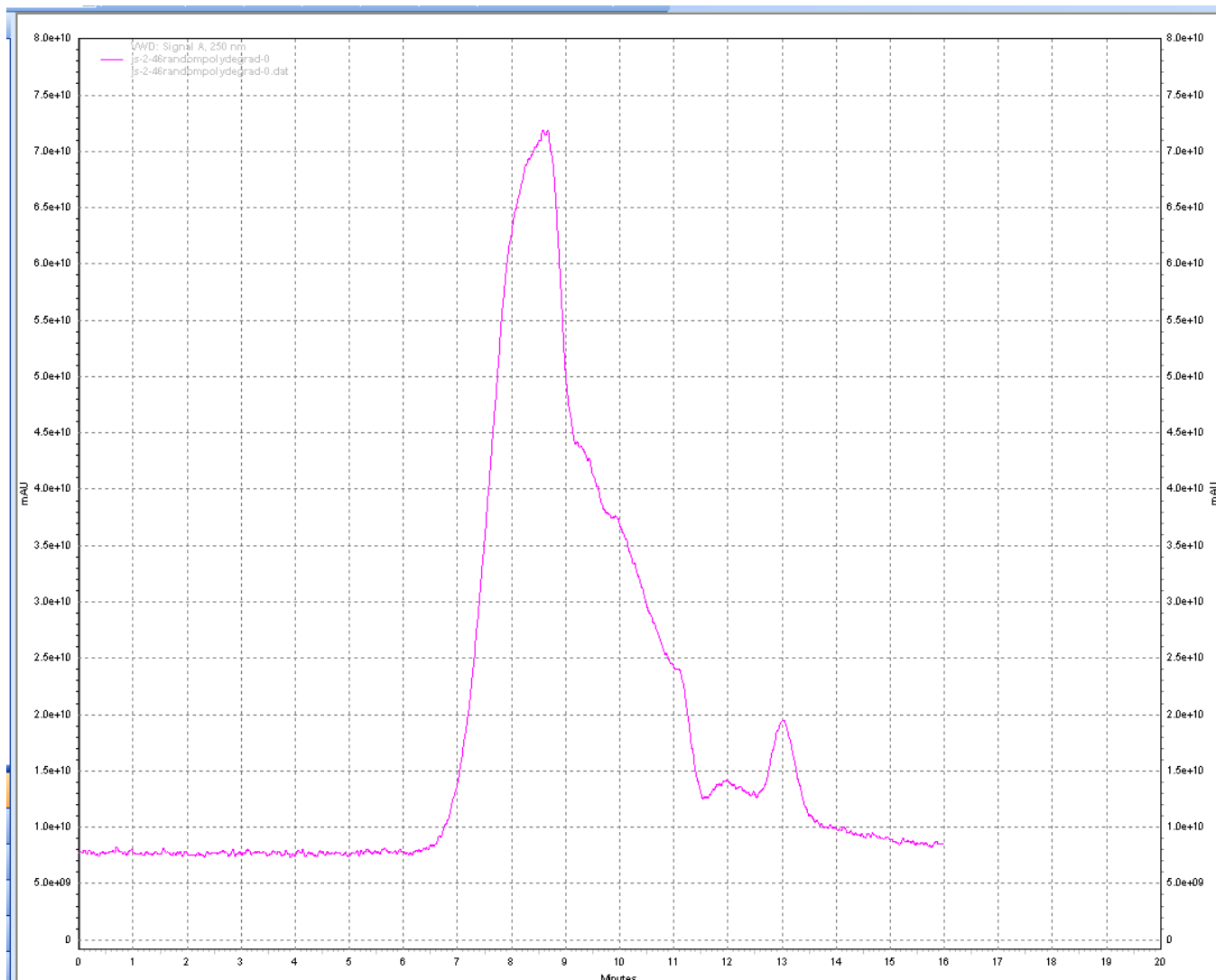
SI-Figure 1:  $^1\text{H}$ NMR of poly  $\beta$ -aminoester ketal-2



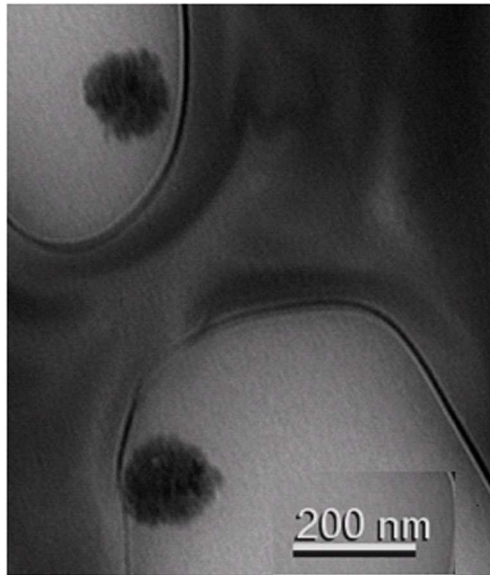
SI-Figure 2:  $^{13}\text{C}$ NMR of poly  $\beta$ -aminoester ketal-2



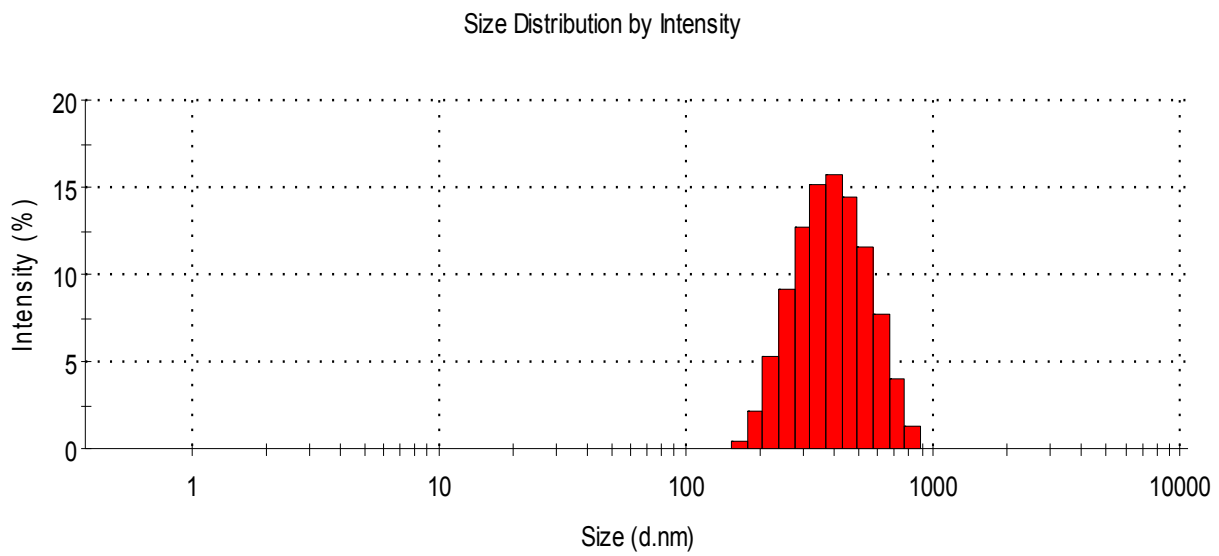
SI-figure 3:  $^{13}\text{C}$ NMR of poly  $\beta$ -aminoester ketal-1



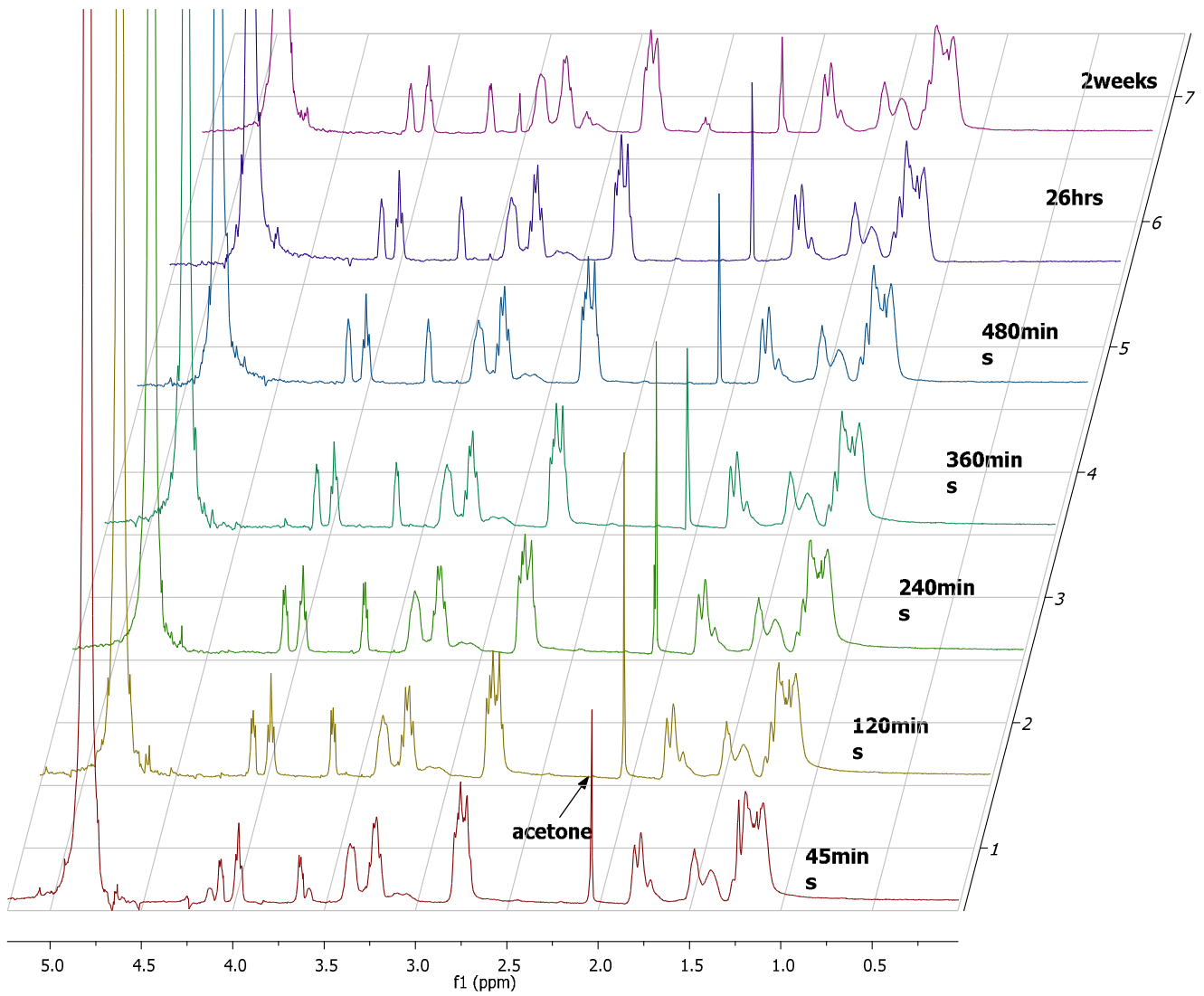
SI-Figure 4: GPC trace of **poly  $\beta$ -aminoester ketal-2** in DMF/0.01LiBr Solvent (Mw-6300)



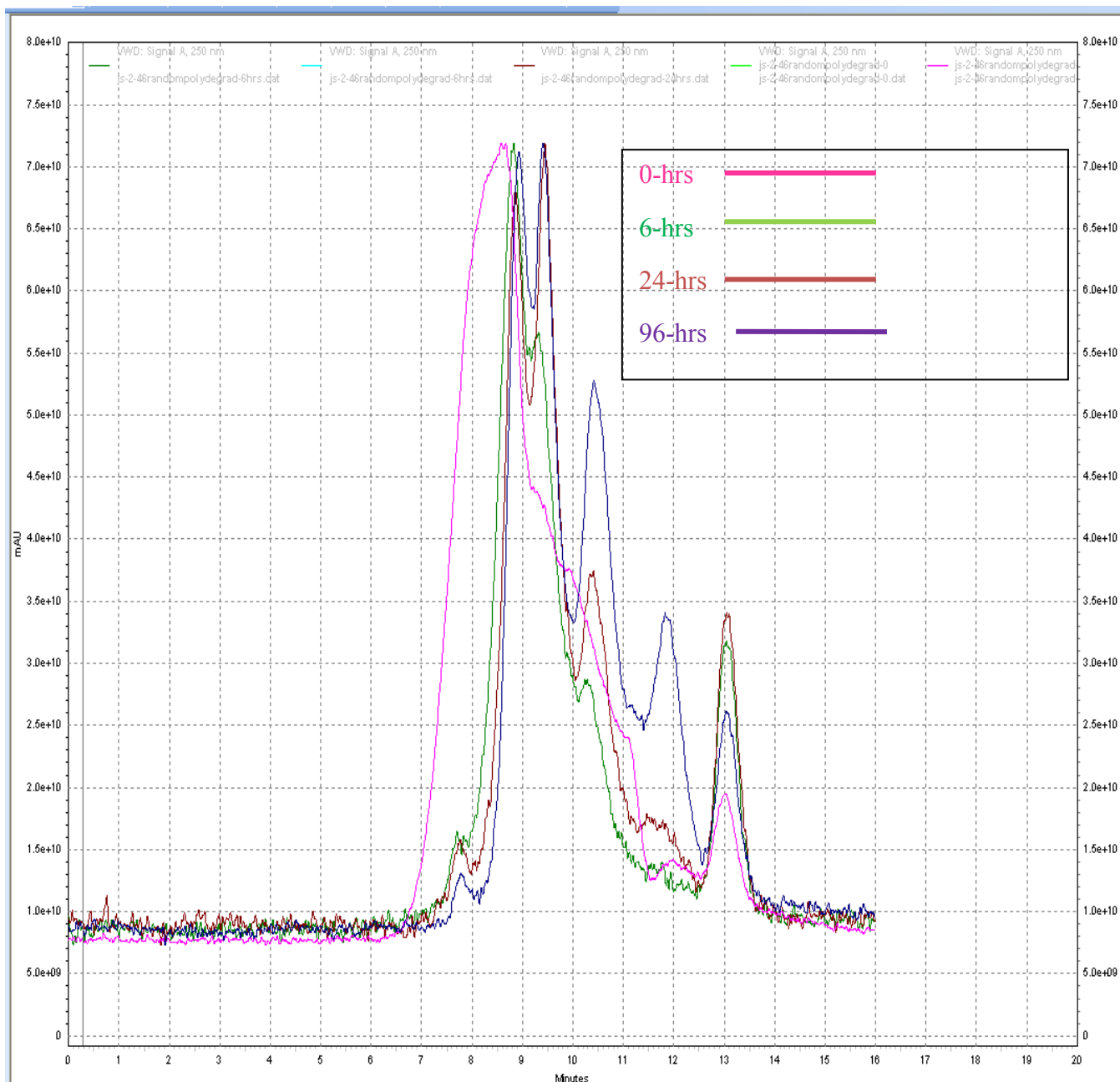
SI-Figure 5 - TEM image of formulated nanoparticles from poly  $\beta$ -aminoester ketal-2



SI-Figure 6 : Size distribution of prepared nanoparticles at pH7.4 from poly  $\beta$ -aminoester ketal-2



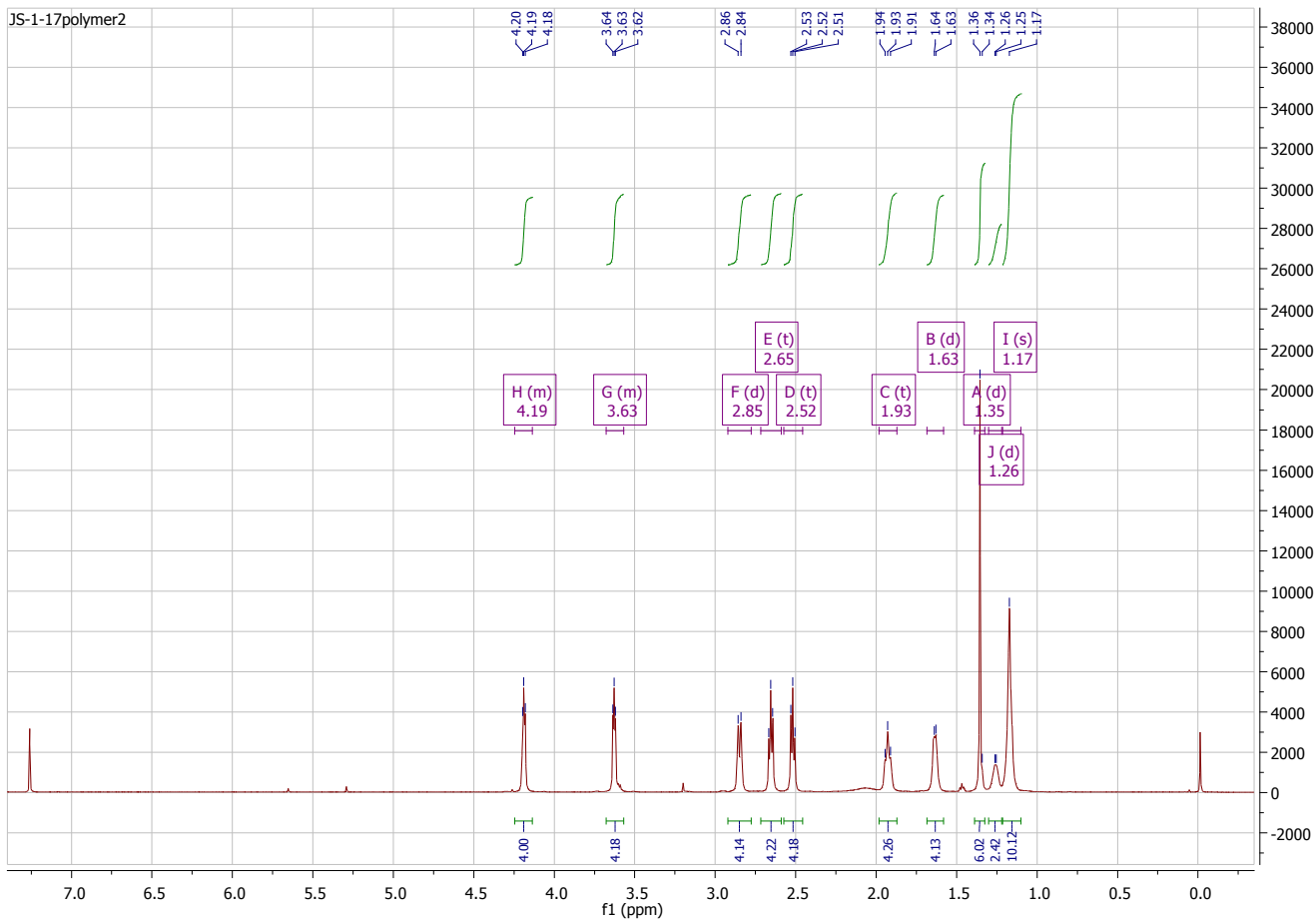
SI-Figure 7: NMR spectra of degradation of poly β-aminoester ketal-2 at various times



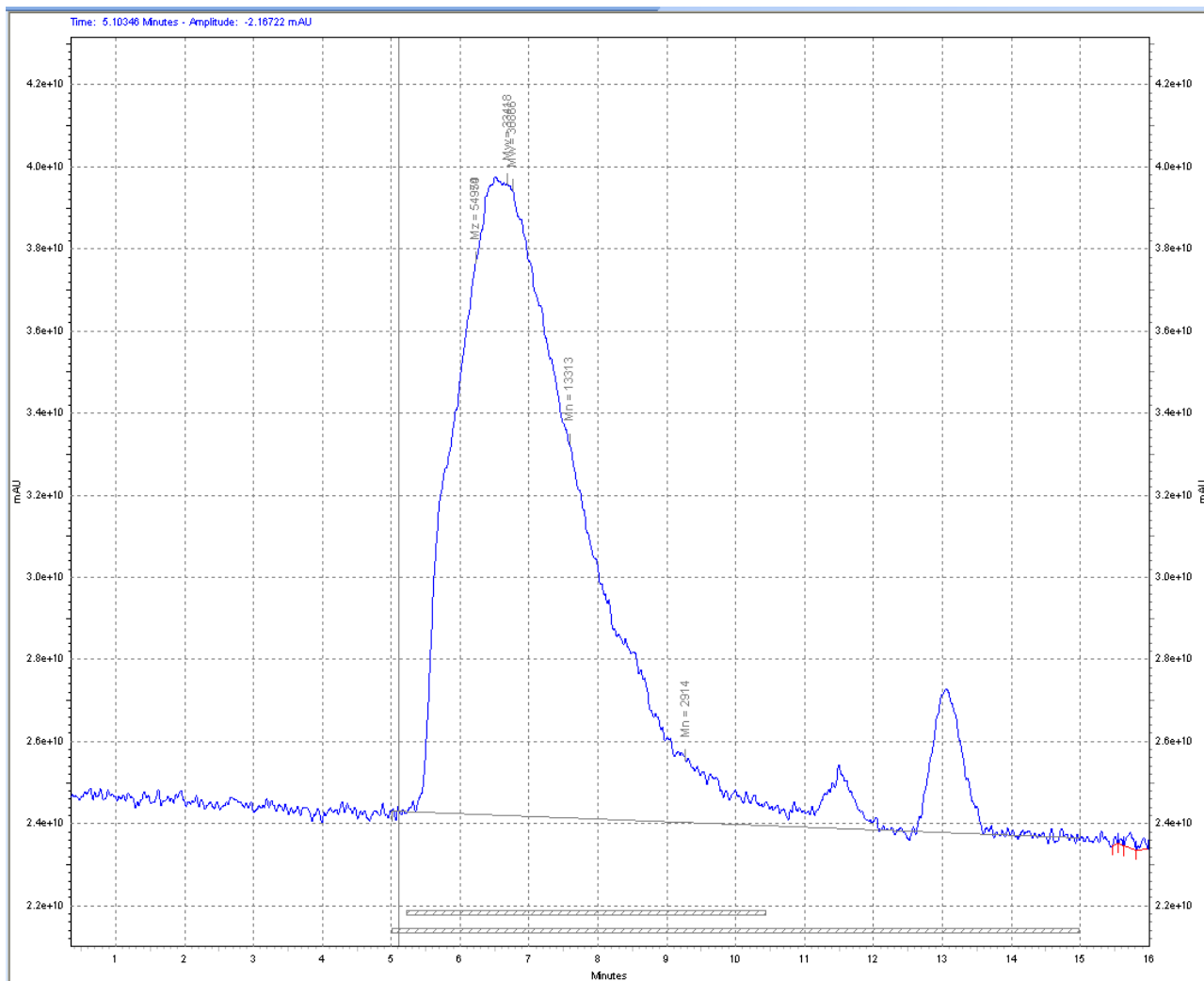
SI-Figure 8: GPC trace of degradation of poly  $\beta$ -aminoester ketal-2 in DMF/0.01LiBr Solvent

100mg of polymer was incubated in 3 ml of buffer pH=5 at 37<sup>o</sup>C. Samples were withdrawn at various intervals of time and lyophilized dissolved in DMF and injected in the GPC.





SI-figure 9:  $^1\text{H}$ NMR of poly  $\beta$ -aminoester ketal-1



SI-Figure 10: GPC trace of poly  $\beta$ -aminoester ketal-1 in DMF/0.01LiBr Solvent (Mw-33000)