Supporting information for

Polyaniline-Supported Zinc Oxide Nanocomposites-Catalyzed Condensation of Lactic Acid to Lactide with High Yield and Optical Purity

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1. Experimental photos and SEM images

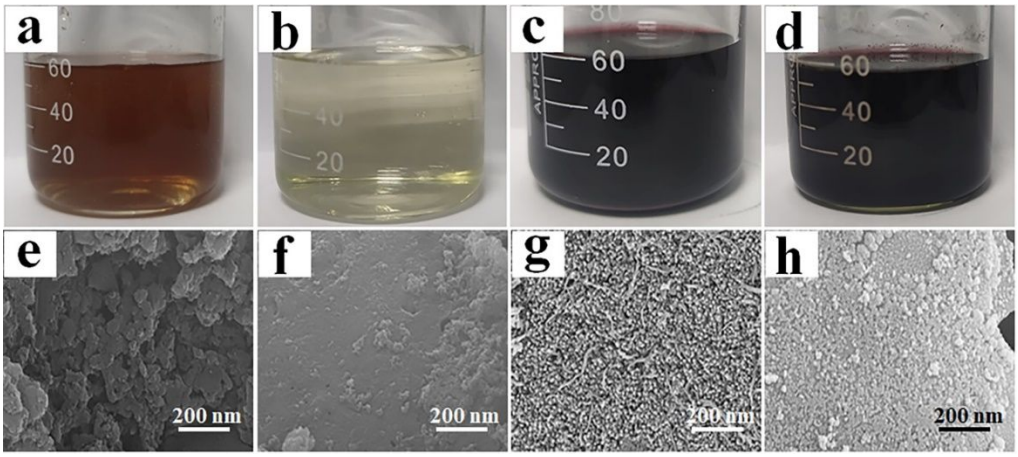

Figure S1. Experimental photos (reaction within 1 min, images a−d) and the SEM images (images e−h) of PANI-H (images a and e), Zn@PANI-H (images b and f), PANI-OMe (images c and g) and Zn@PANI-OMe (images d and h).

2. FT-IR spectra and XRD patterns of the materials

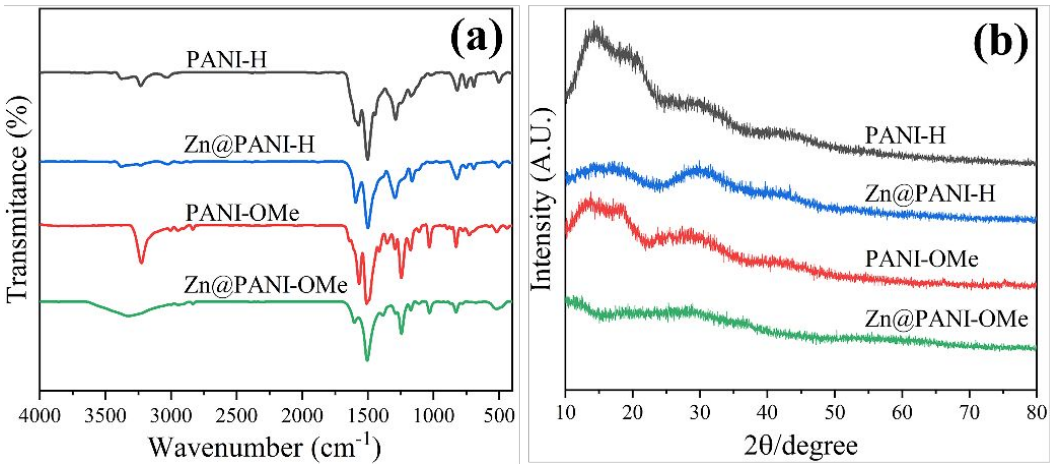

Figure S2. FT-IR spectra and the XRD pattern of the as-prepared materials.

3. Composition analysis of Zn@PANI-OMe

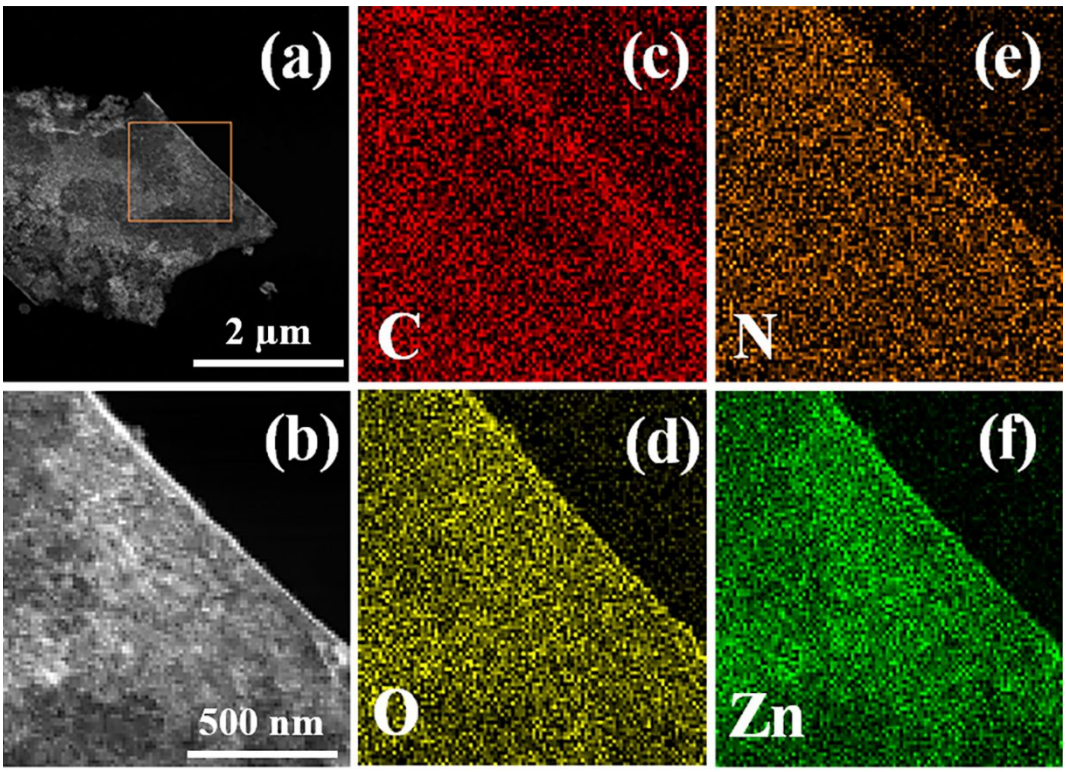

Figure S3. Composition analysis of Zn@PANI-OMe: (a,b) HAADF-STEM images; (c–f) elemental mapping images.

4. XPS spectra of the materials

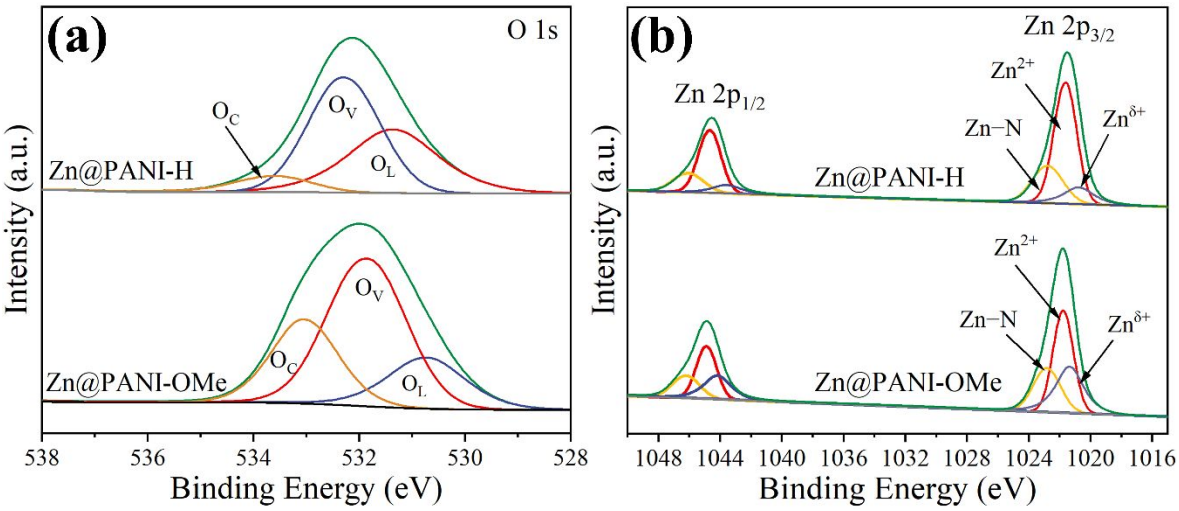

Figure S4. XPS spectra of the materials.

Table S1. Details of the XPS peak information of O 1s

O type	Zn@PANI-H		Zn@PANI-OMe	
	Peak position	Area %	Peak position	Area %
O_L	531.36	38.42	530.73	19.45
O_V	532.28	52.63	531.85	55.03
O_C	533.59	8.95	533.03	25.52

Table S2. Details of the XPS peak information of Zn 2p

Zn type	Zn@PANI-H			Zn@PANI-OMe		
	Peak position		Area %	Peak position		Area %
	Zn 2p$_{3/2}$	Zn 2p$_{1/2}$		Zn 2p$_{3/2}$	Zn 2p$_{1/2}$	
$Zn^{\delta+}$	1020.73	1043.55	15.14	1021.35	1044.17	34.34
Zn^{2+}	1021.60	1044.65	60.16	1021.77	1044.89	41.76
Zn−N	1022.78	1046.06	24.70	1022.82	1046.20	23.90

5. The leaching amounts of Zn

Table S3. The leaching amounts of Zn during the oligomer splitting reaction process

Time (h)	0.5	1	1.5	2	2.5	3
Zn leaching (%)	0.05	0.07	0.10	0.13	0.17	0.21

6. IR spectra of *L*-lactide

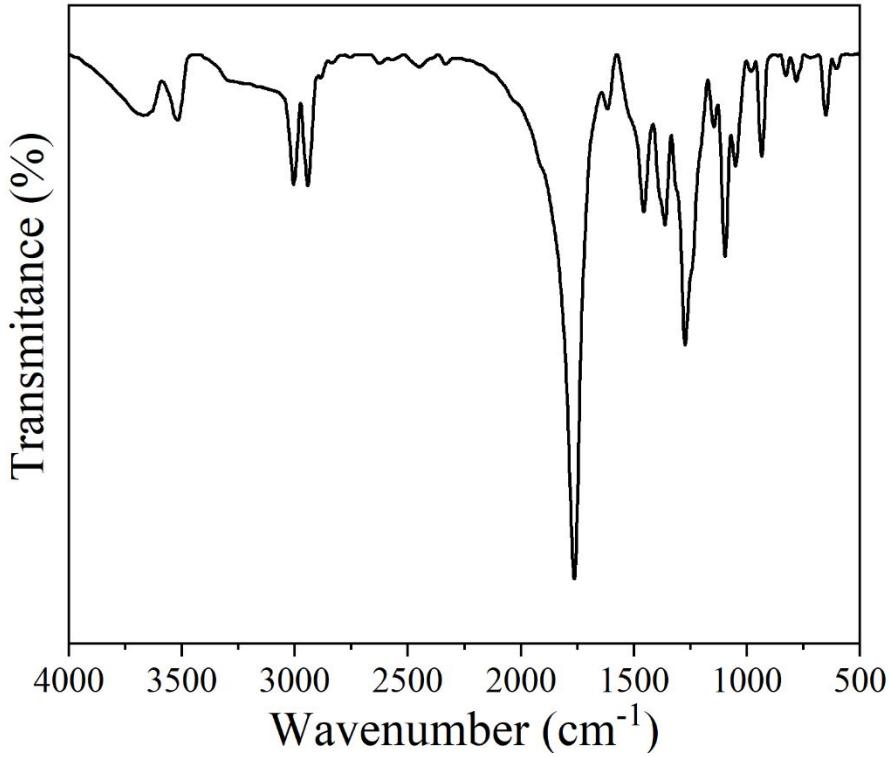

Figure S5. IR spectra of *L*-lactide.

7. Chiral HPLC spectrum of the product

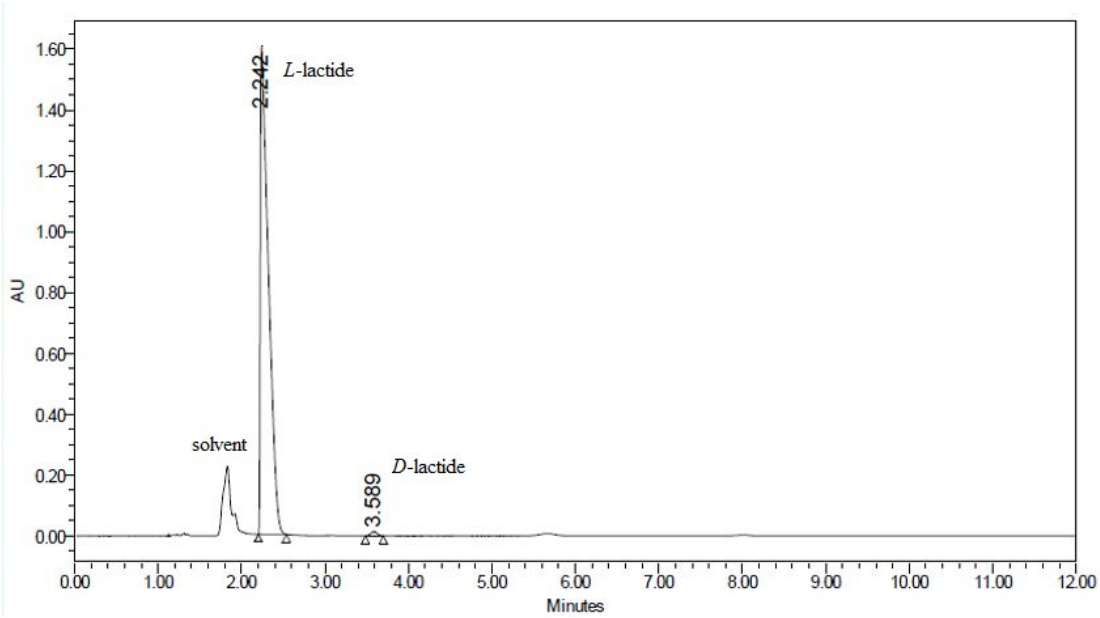

Figure S6. Chiral HPLC spectrum of the product

8. Photograph of the product

Figure S7. Photos of the produced lactide: (a) product of the reaction catalyzed by Zn@PANI-H; (b) product of the reaction catalyzed by Zn@PANI-OMe

9. NMR spectra of *L*-lactide

L-Lactide , ^{1}H NMR, $CDCl_3$, 400 MHz

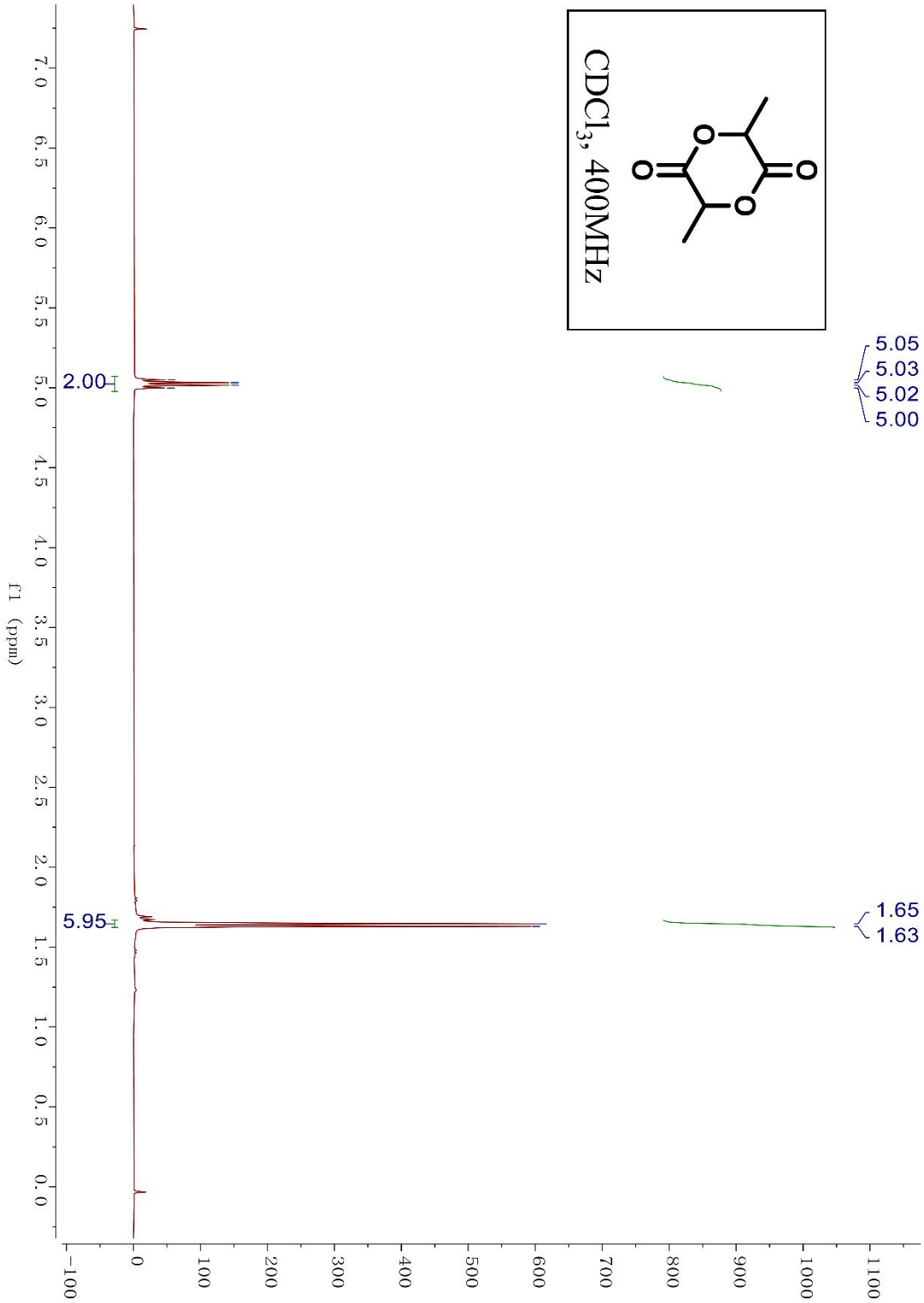

Figure S8. ^{1}H NMR spectra of *L*-lactide

L-Lactide , ^{13}C NMR, $CDCl_3$, 100 MHz

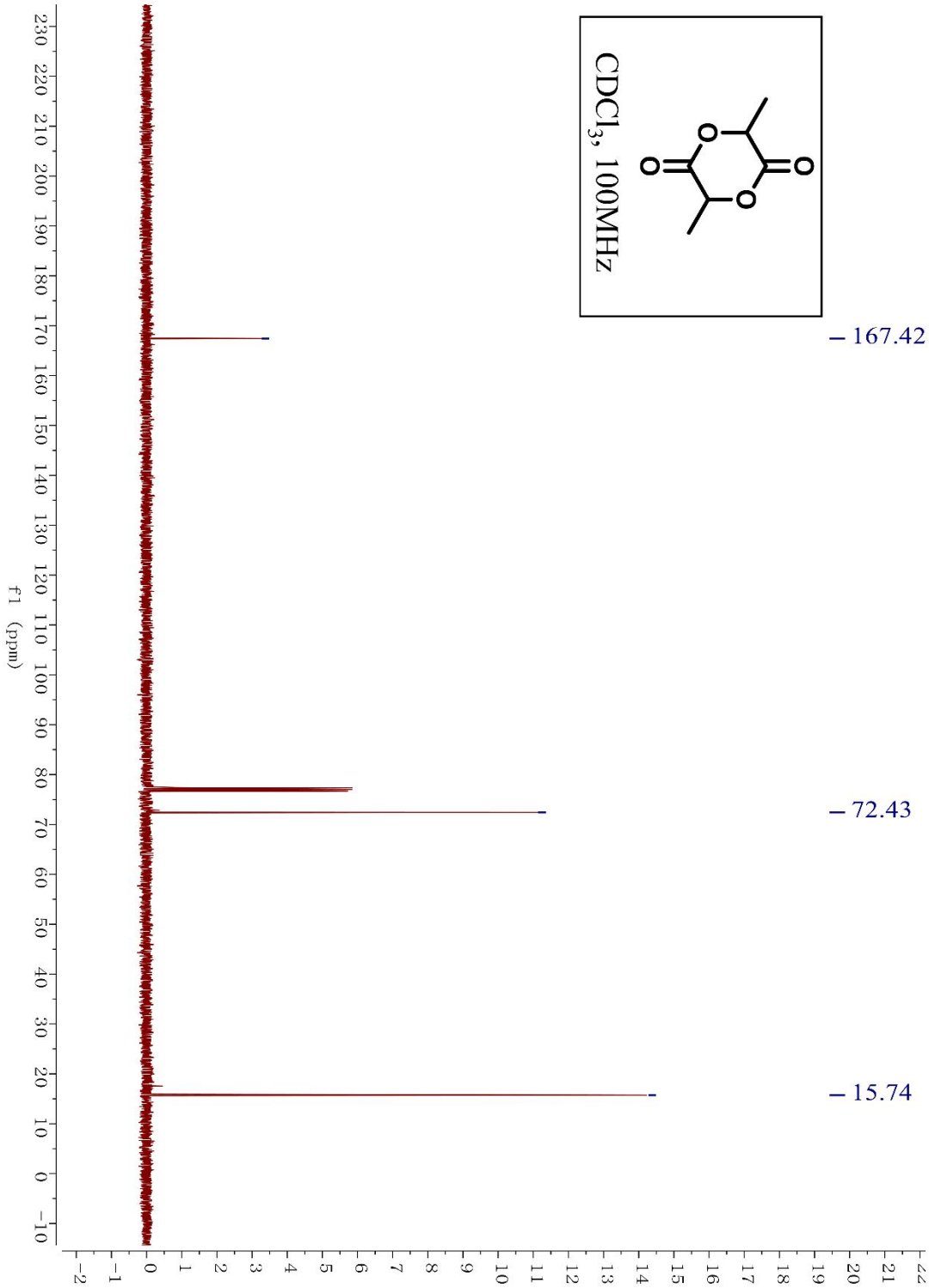

Figure S9. ^{13}C NMR spectra of *L*-lactide