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Supporting information for

A new, simple, and efficient strategy for the preparation of active antifungal biodegradable materials *via* ring-opening polymerization of L-lactide with zinc aryloxides

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Crystallographic Data for Compounds 1-3.

Table S1. Crystal and data collection parameters for compounds **1-3**.

Crystal	**1**·*o*-XenOH	**2**·0.5(C_6H_{14})	**2**·C_7H_8	**3**
Chemical formula	$C_{42}H_{44}N_2O_3Zn$	$C_{33}H_{41}N_2O_2Zn$	$C_{37}H_{42}N_2O_2Zn$	$C_{30}H_{34}N_2O_2Zn$
Formula Mass	690.16	563.05	612.09	519.96
Crystal system	Triclinic	Triclinic	Triclinic	Monoclinic
Space group	$P\bar{1}$	$P\bar{1}$	$P\bar{1}$	$P2_1$
a/Å	13.948 (3)	9.552 (3)	9.541 (4)	9.182 (3)
b/Å	14.816 (4)	11.195 (5)	11.120 (4)	12.106 (4)
c/Å	19.468 (4)	15.144 (6)	16.528 (6)	12.576 (4)
α/°	88.54 (2)	79.46 (3)	78.21 (3)	
β/°	88.52 (2)	75.77 (3)	88.34 (3)	108.90 (3)
γ/°	62.46 (2)	69.23 (4)	69.47 (4)	
Unit cell volume/Å^3	3565.7 (15)	1459.5 (11)	1605.8 (11)	1322.5 (8)
Temperature/K	100(2)	100(2)	100(2)	100(2)
Z	4	2	2	2
Radiation type	CuKα	MoKα	MoKα	MoKα
Absorption coefficient, μ/mm^{-1}	1.274	0.873	0.799	0.957
No. of reflections measured	15639	10823	10688	6429
No. of independent reflections	15639	5585	7105	3828
No. of observed reflections ($I > 2\sigma(I)$)	11054	4596	5895	3382
R_{int}	-	0.0429	0.0280	0.0258
Final R_1 values ($I > 2\sigma(I)$)	0.1102	0.0479	0.0437	0.0346
Final $wR(F^2)$ values ($I > 2\sigma(I)$)	0.2915	0.1076	0.0887	0.0888
Final R_1 values (all data)	0.1399	0.0630	0.0576	0.0410
Final $wR(F^2)$ values (all data)	0.3272	0.1166	0.0965	0.0912
Goodness of fit on F^2	1.271	1.062	1.050	1.011
Δρmax/eÅ^{-3}	2.09	0.50	0.54	0.30
Δρmin/eÅ^{-3}	-1.28	-0.58	-0.67	-0.27

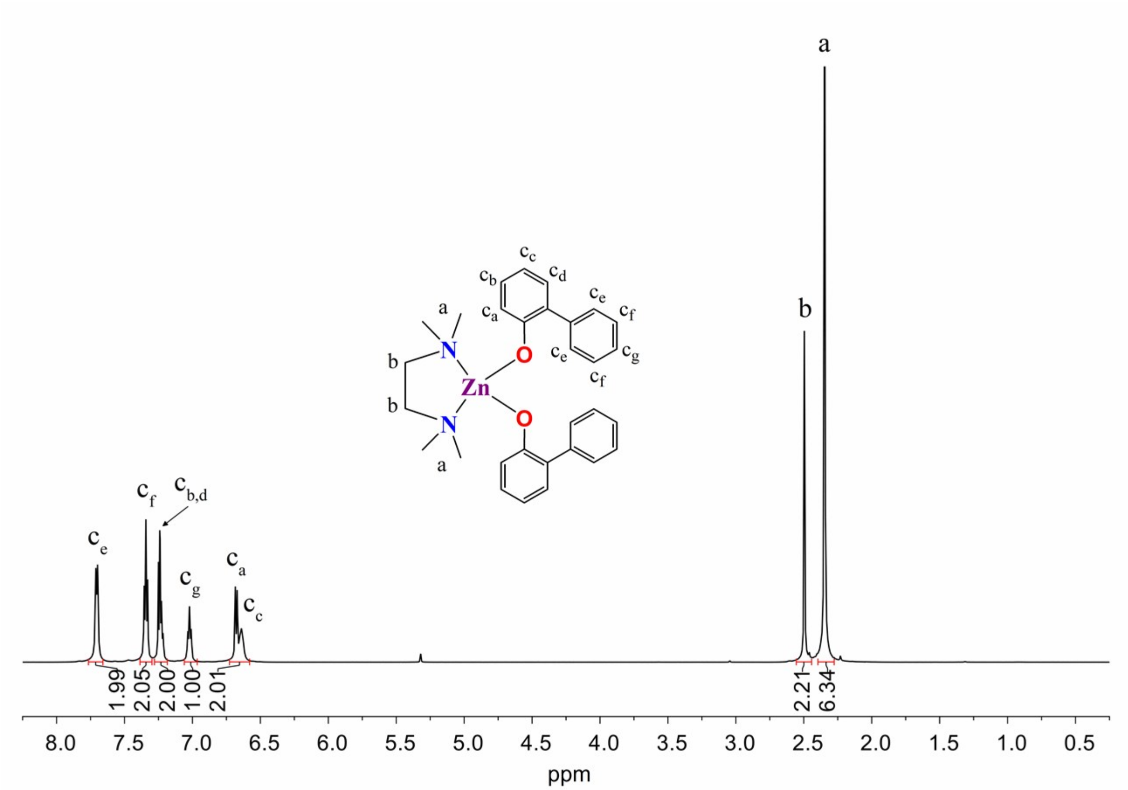

Fig. S1 ^1H NMR spectrum of **1** in CD_2Cl_2.

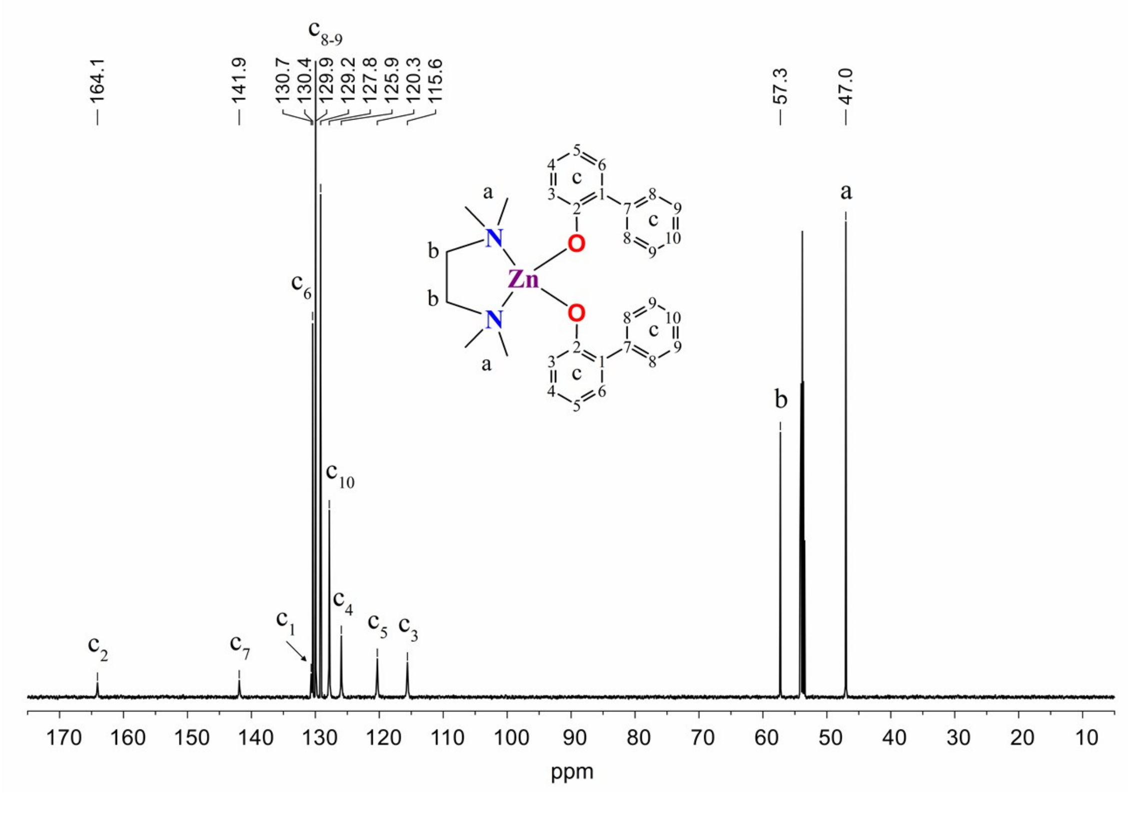

Fig. S2 ^{13}C NMR spectrum of **1** in CD_2Cl_2.

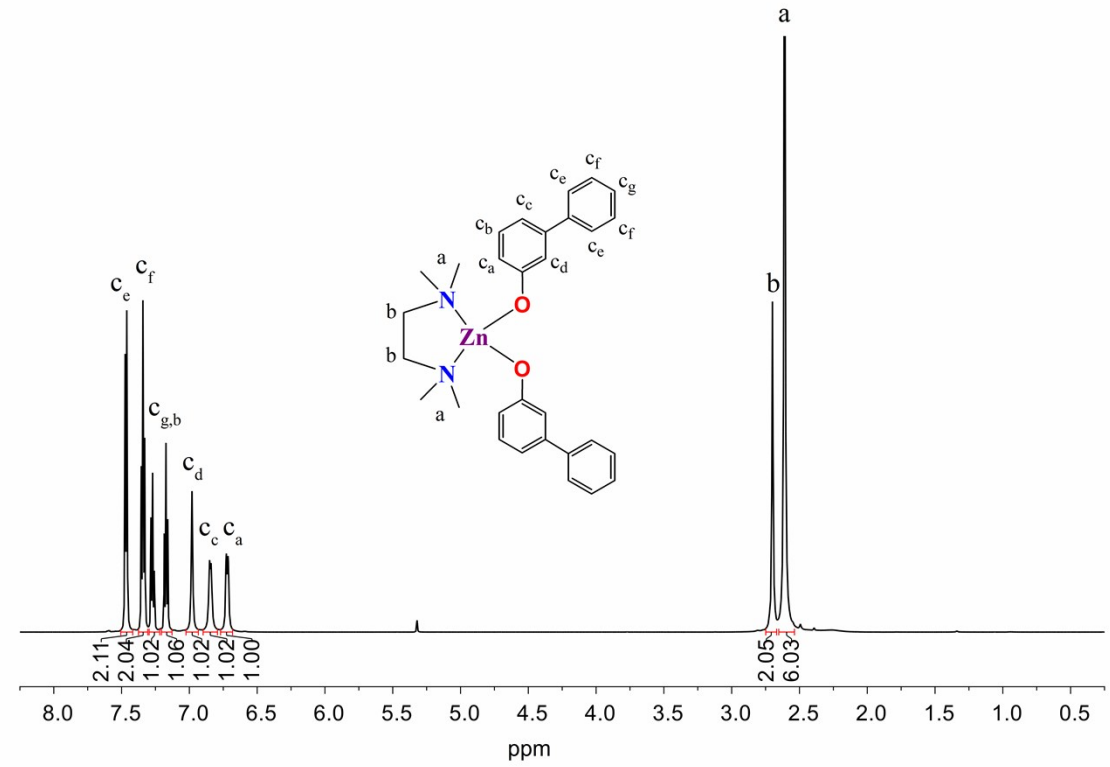

Fig. S3 ^{1}H NMR spectrum of **2** in CD_2Cl_2.

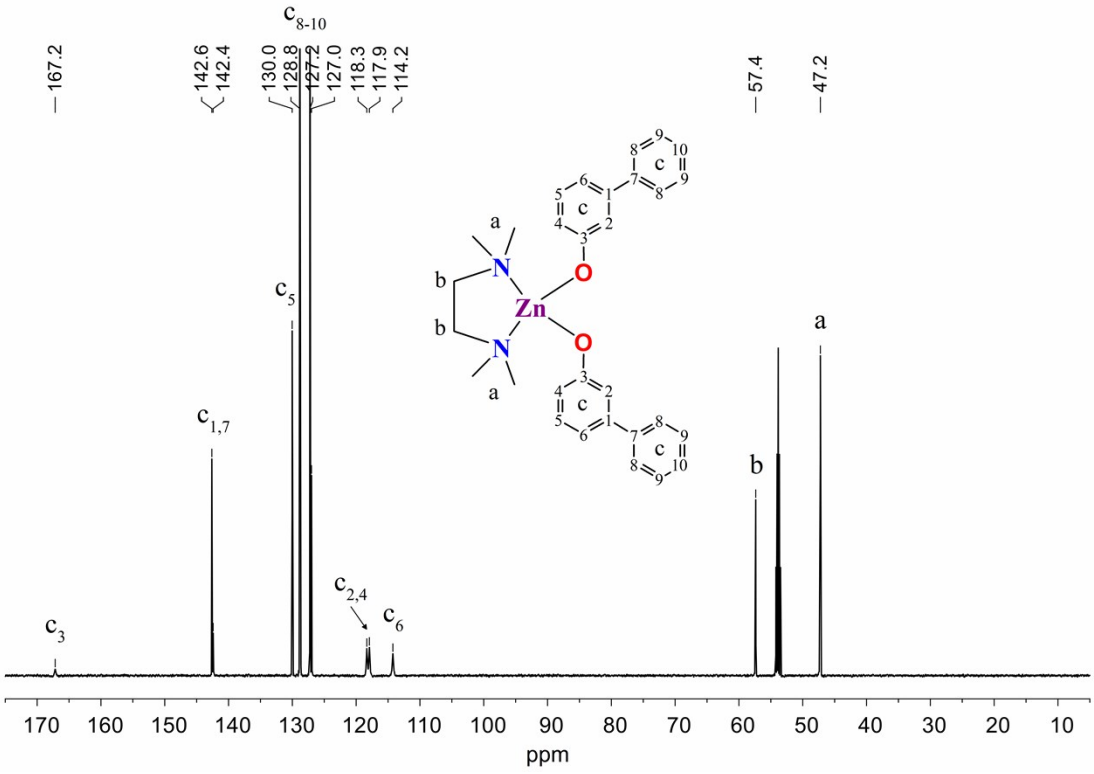

Fig. S4 ^{13}C NMR spectrum of **2** in CD_2Cl_2.

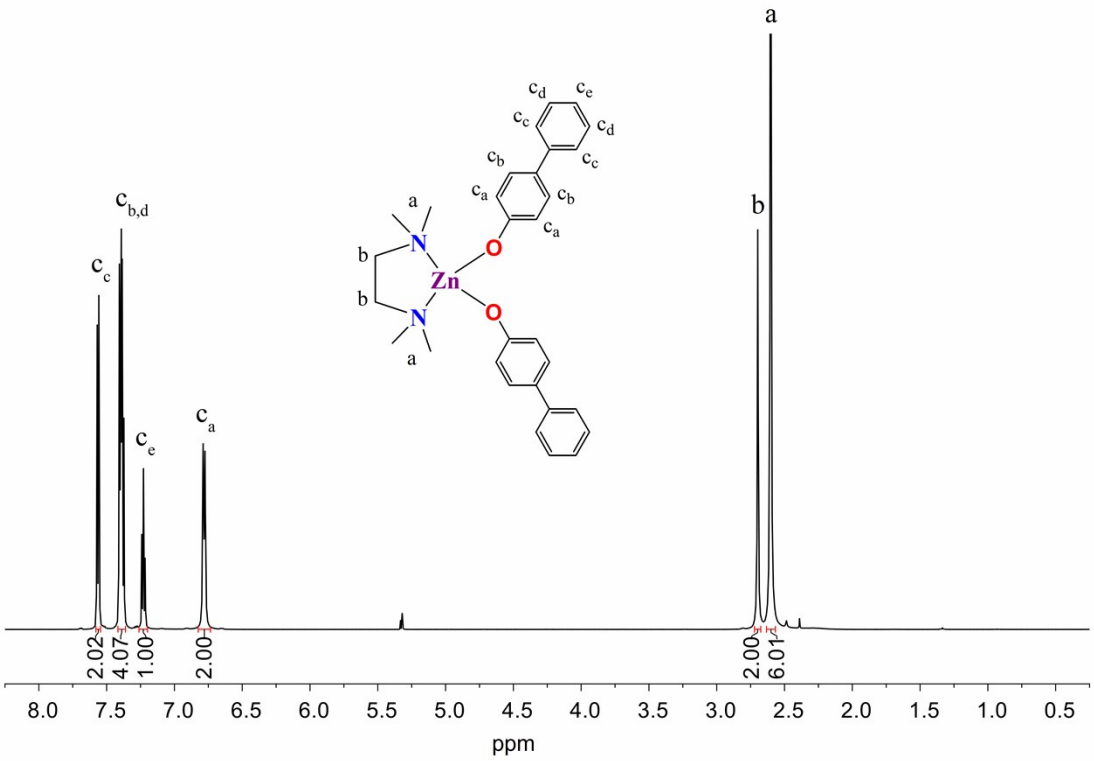

Fig. S5 ^{1}H NMR spectrum of **3** in CD_2Cl_2.

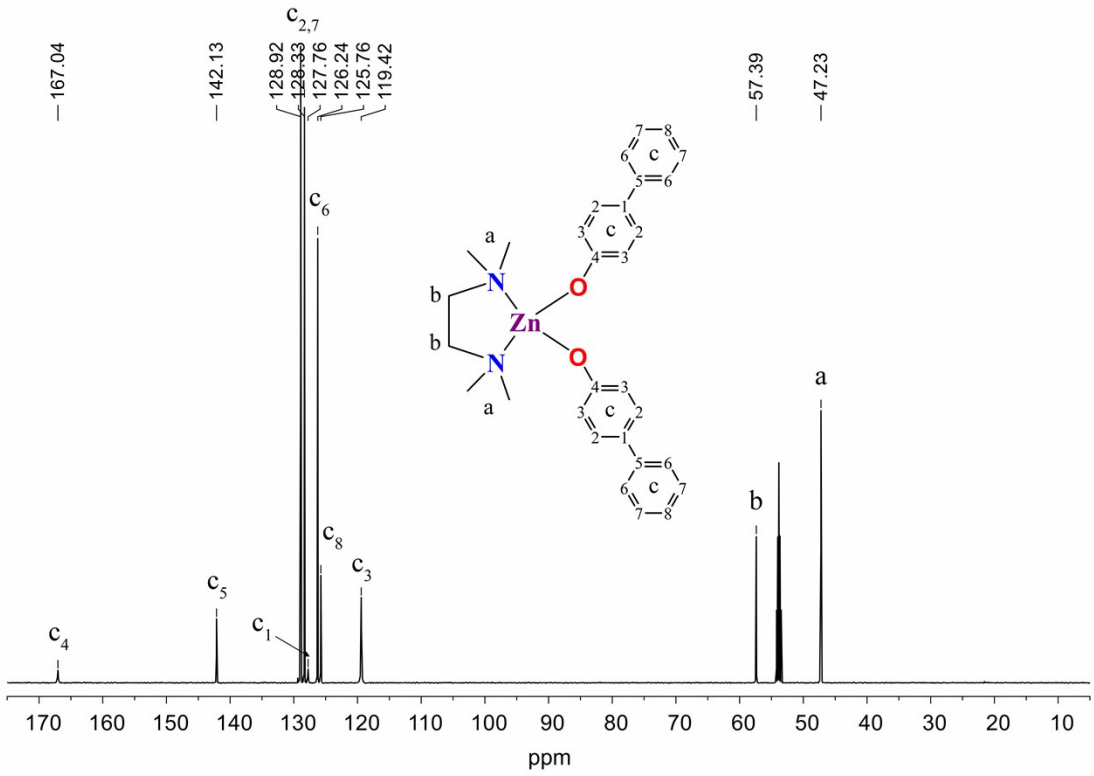

Fig. S6 ^{13}C NMR spectrum of **3** in CD_2Cl_2.

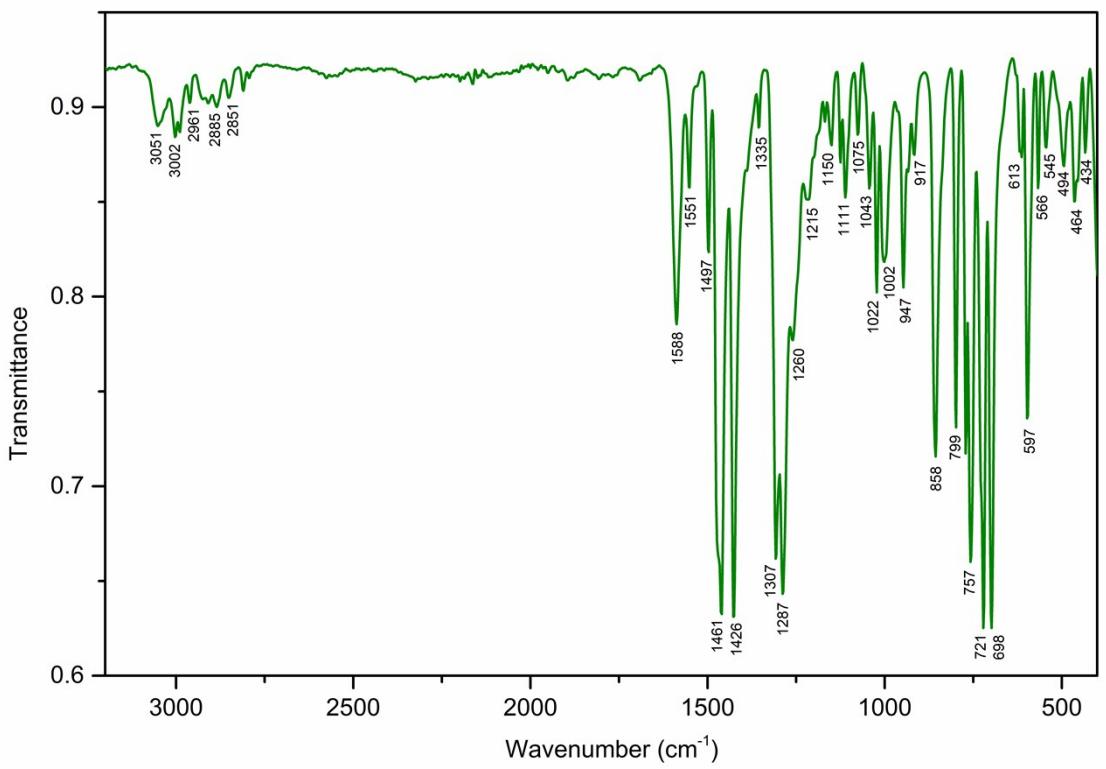

Fig. S7 FTIR-ATR spectra of **1**.

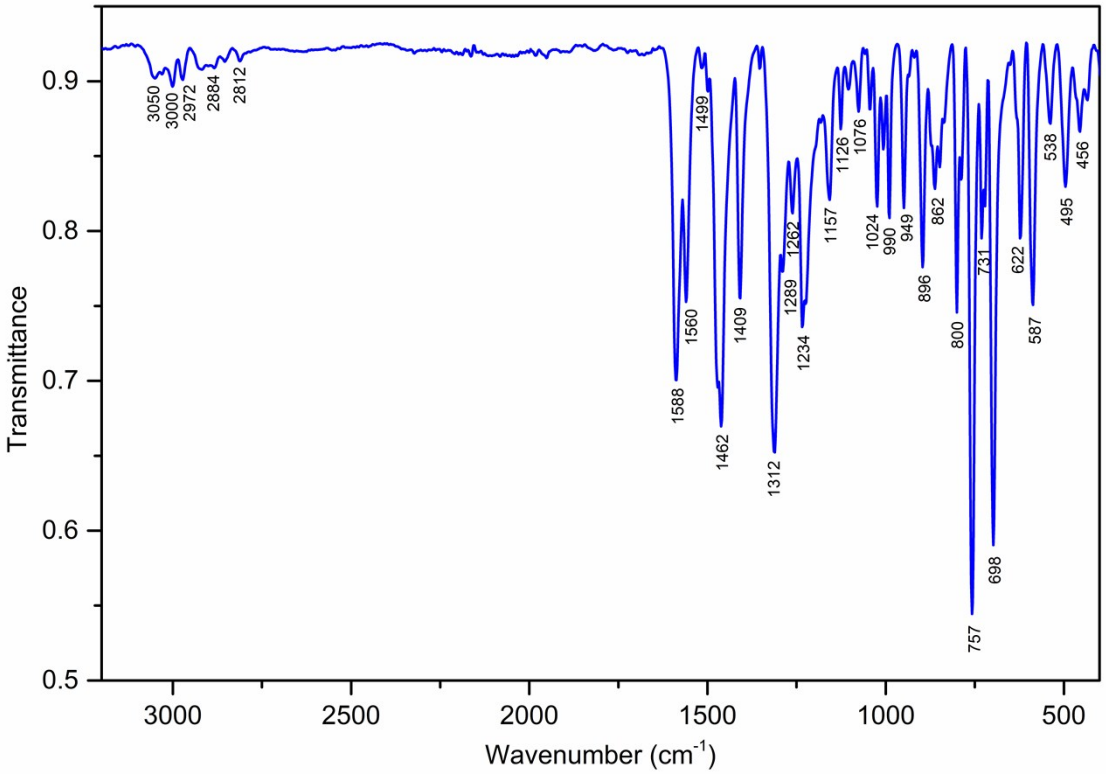

Fig. S8 FTIR-ATR spectra of **2**.

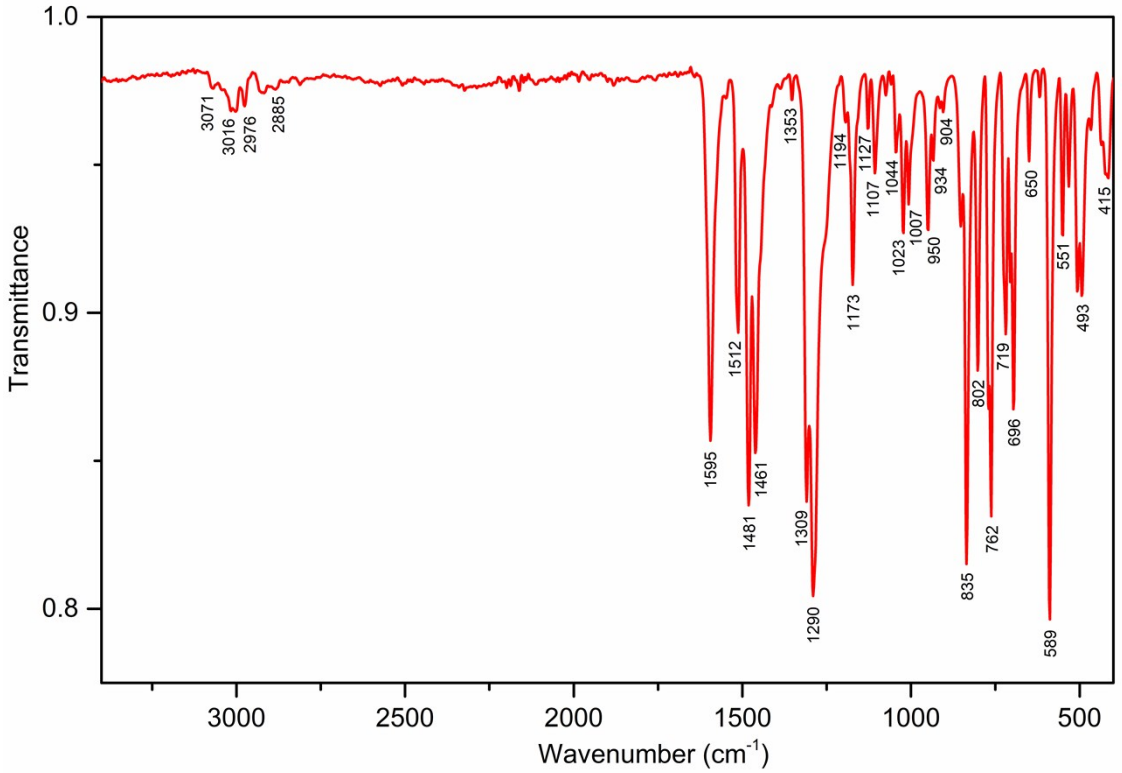

Fig. S9 FTIR-ATR spectra of **3**.

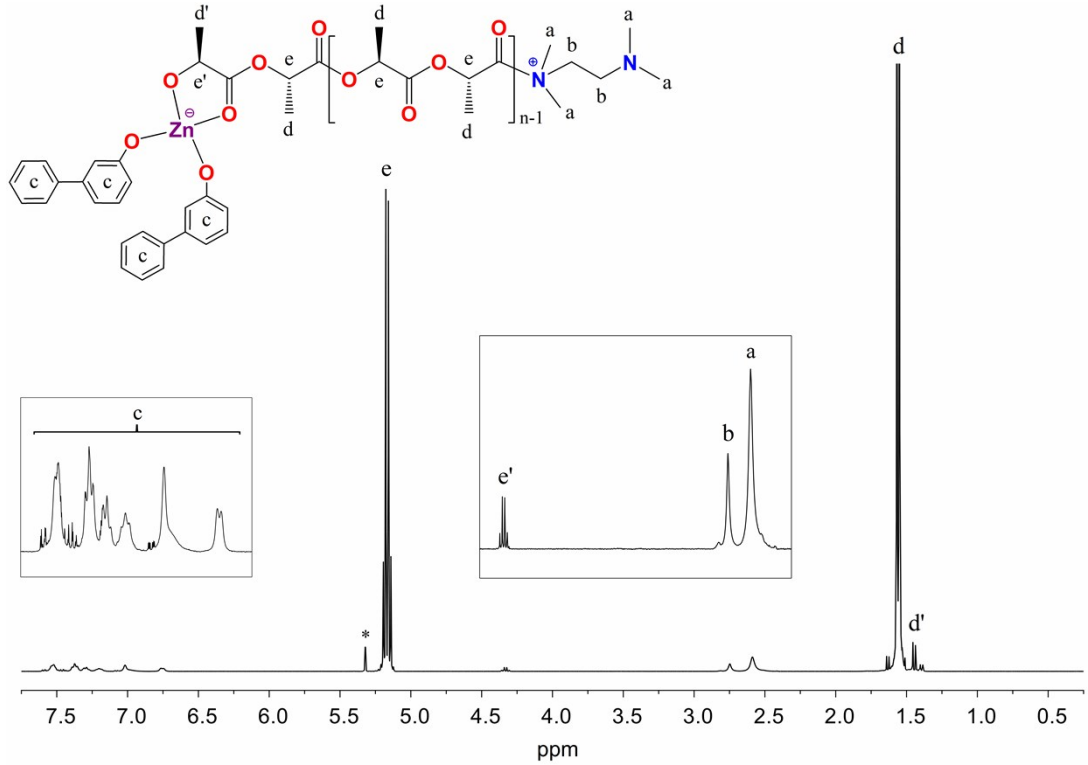

Fig. S10 ^{1}H NMR spectrum in CD_2Cl_2 of TMEDA-PLLA-Zn(*m*-XenO)$_2$.
* assigned to signal of solvent CH_2Cl_2.

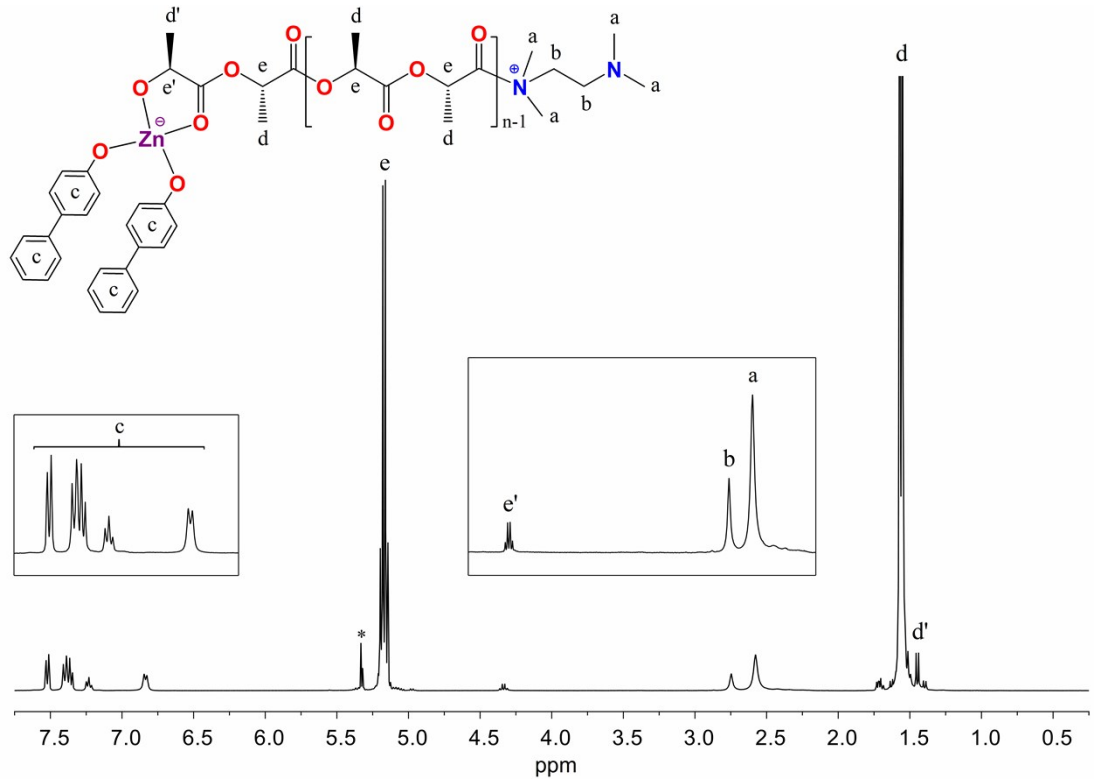

Fig. S11 ^{1}H NMR spectrum in CD_2Cl_2 of TMEDA-PLLA-Zn(*p*-XenO)$_2$.
* assigned to signal of solvent CH_2Cl_2.

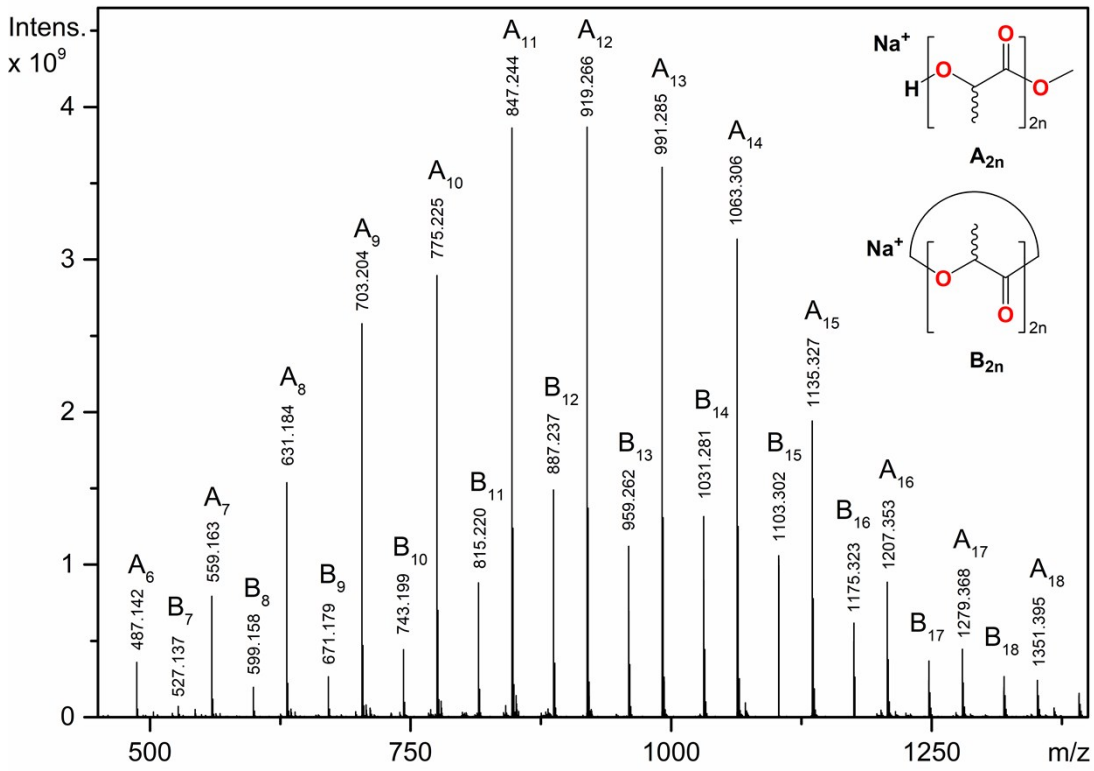

Fig. S12 ESI-MS spectrum of sodium cationized MeO-PLLA and cPLLA.

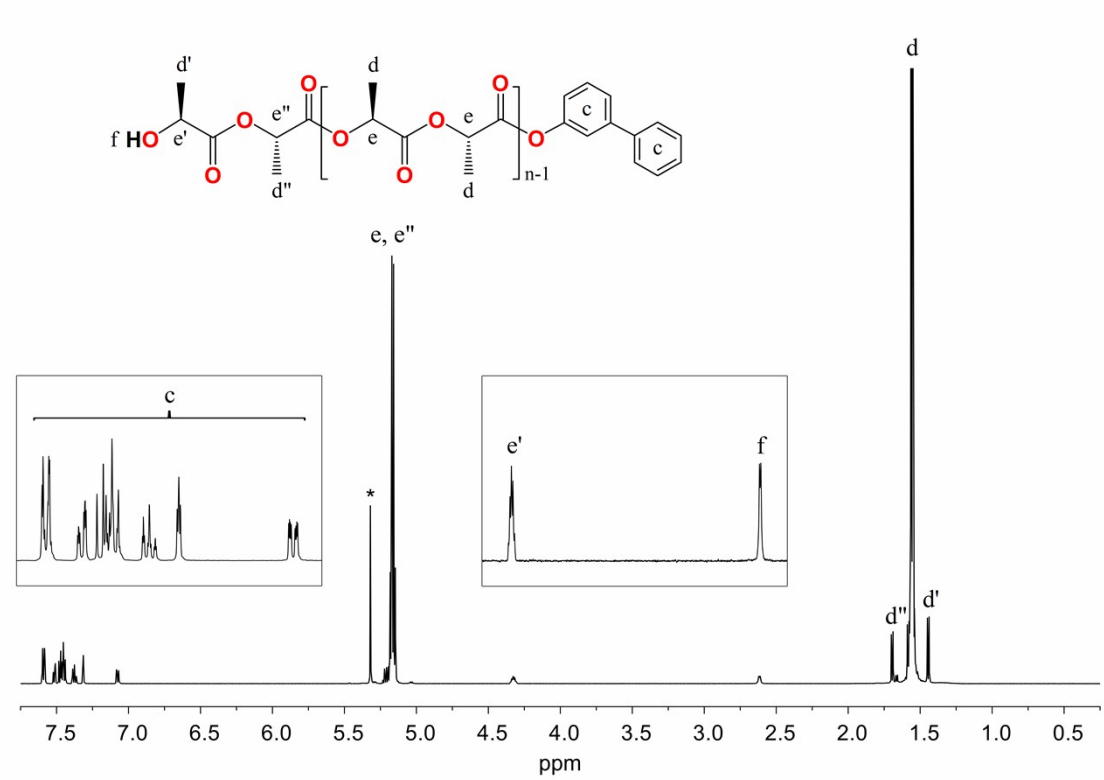

Fig. S13 ^{1}H NMR spectrum in CD_2Cl_2 of *m*-XenO-PLLA. * assigned to signal of solvent CH_2Cl_2.

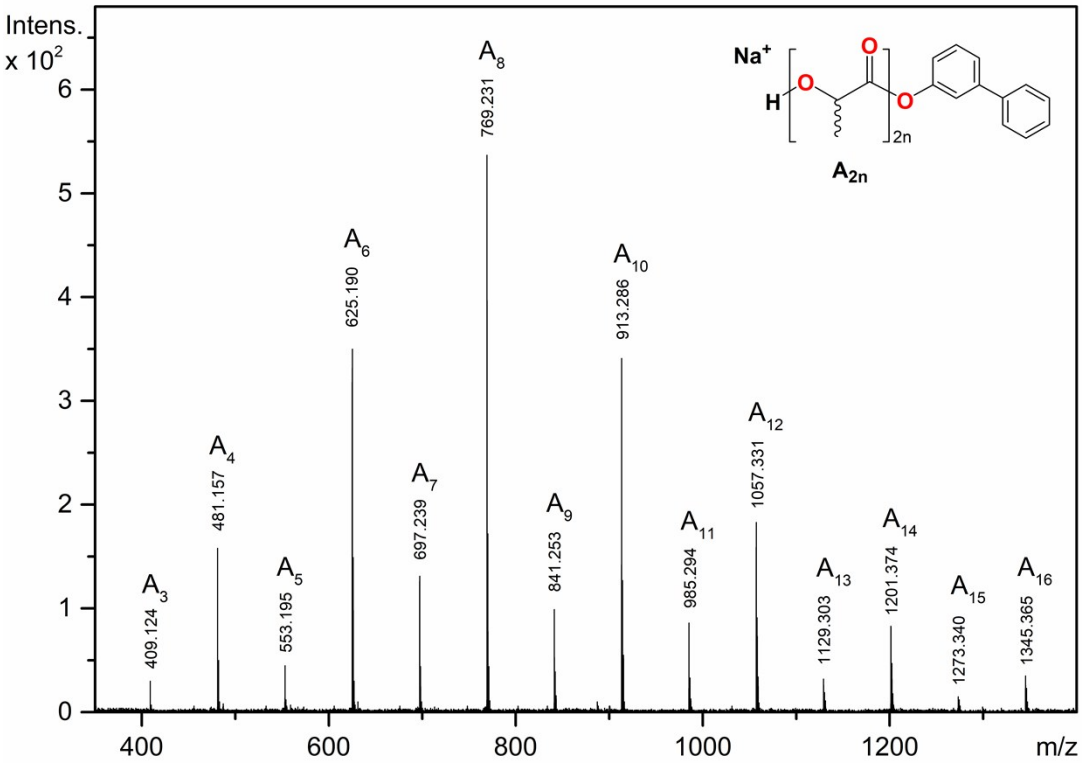

Fig. S14 ESI-MS spectrum of sodium cationized *m*-XenO-PLLA.

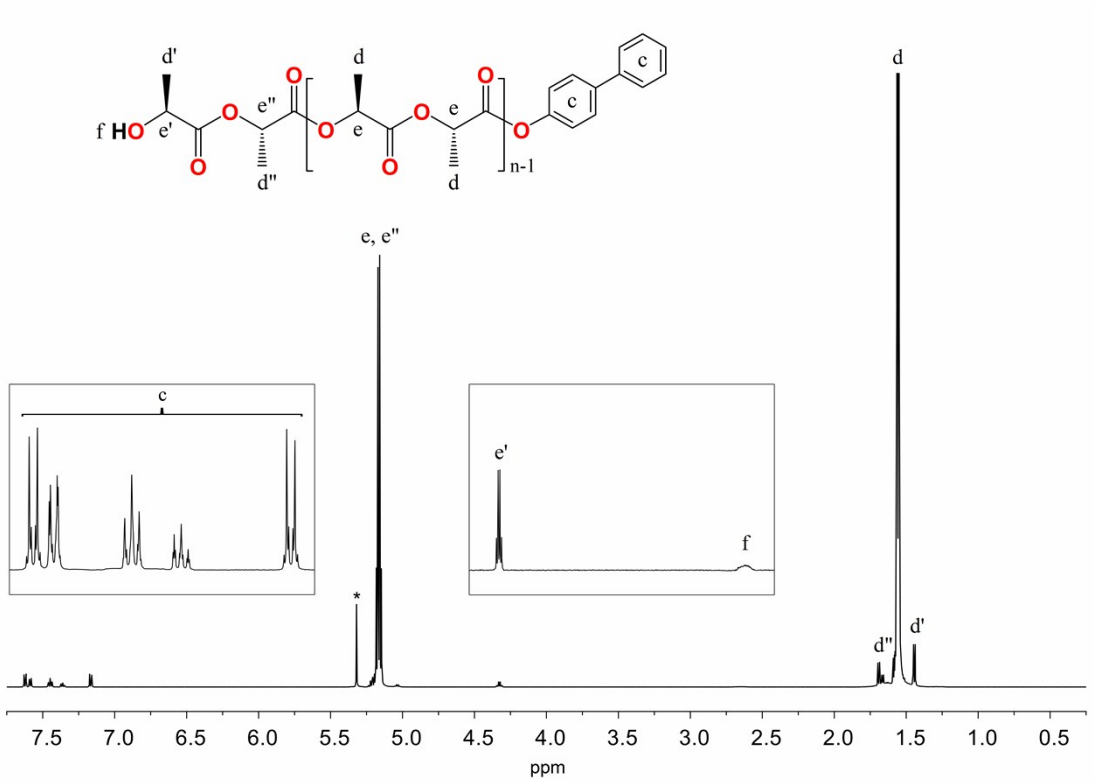

Fig. S15 ^{1}H NMR spectrum in CD_2Cl_2 of *p*-XenO-PLLA. * assigned to signal of solvent CH_2Cl_2.

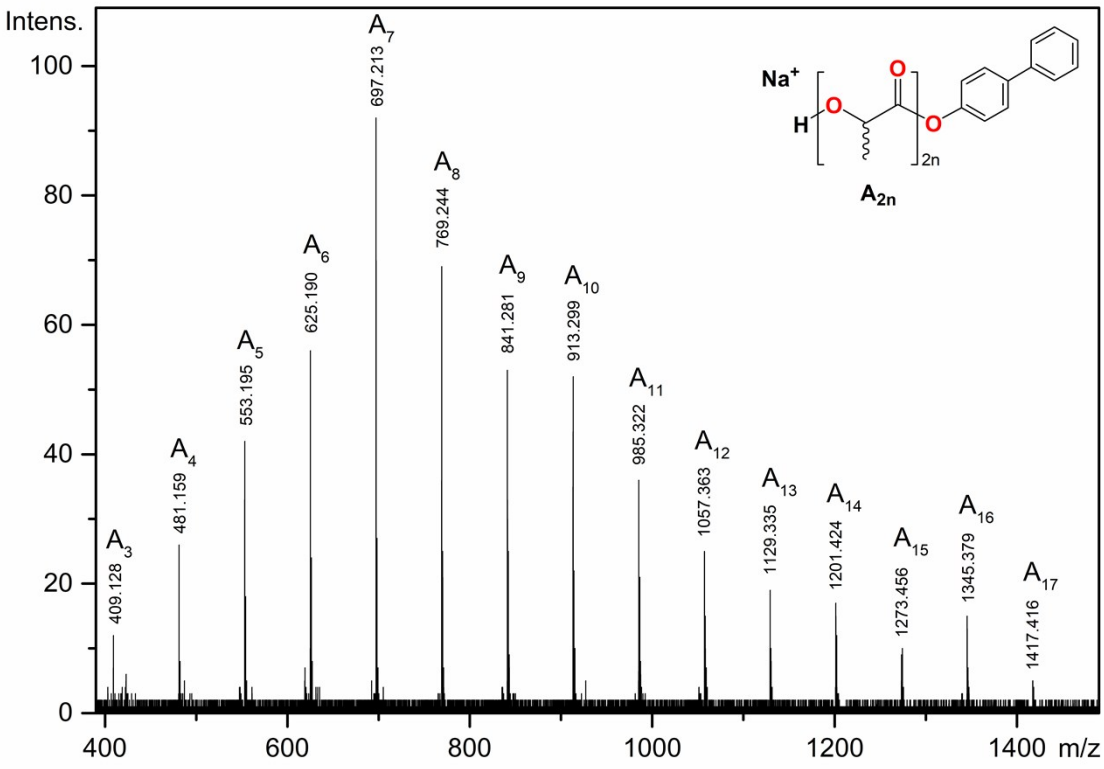

Fig. S16 ESI-MS spectrum of sodium cationized *p*-XenO-PLLA.

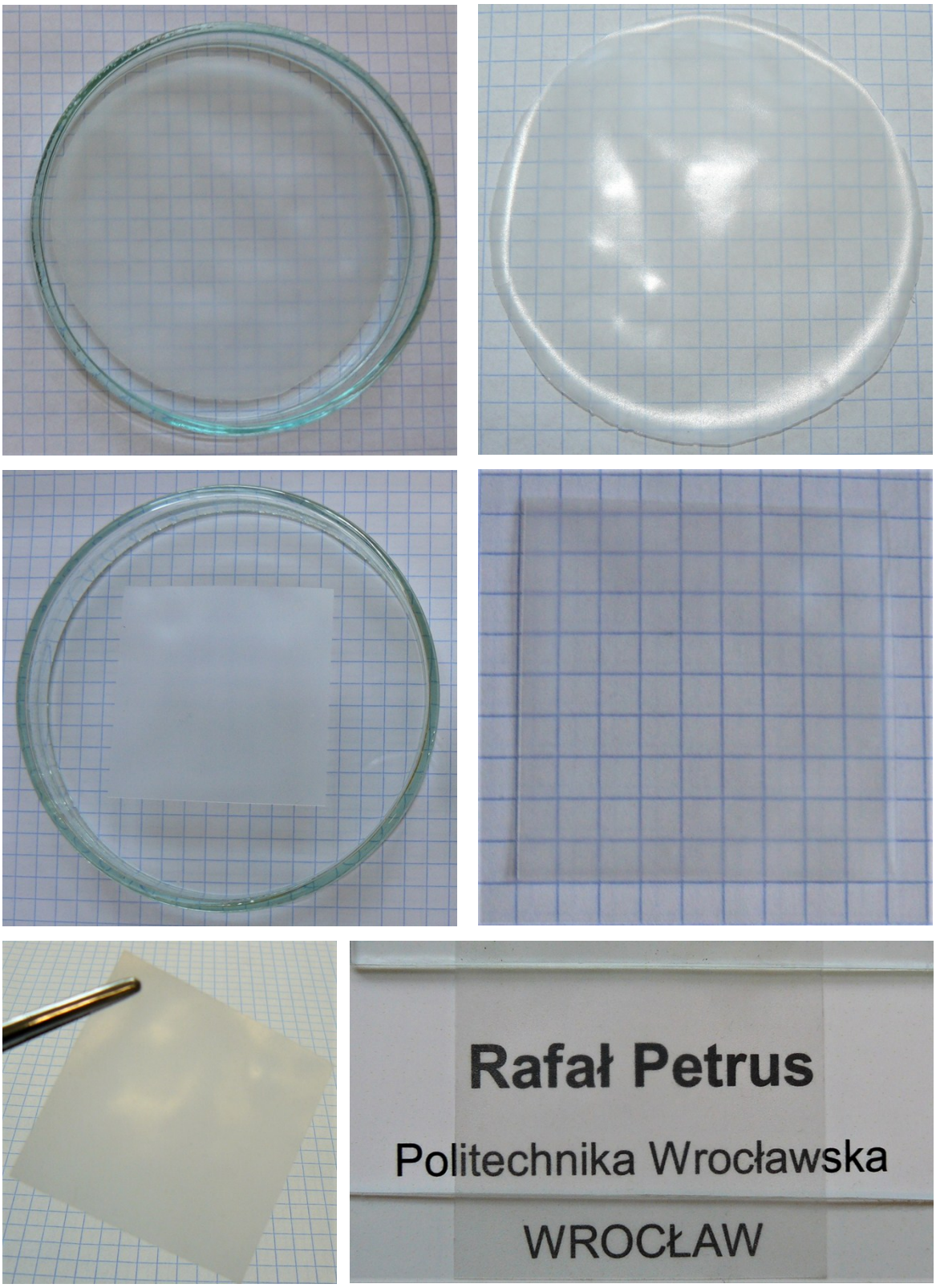

Fig. S17 The example polymeric films prepared by solution casting technique from synthesized PLLAs.

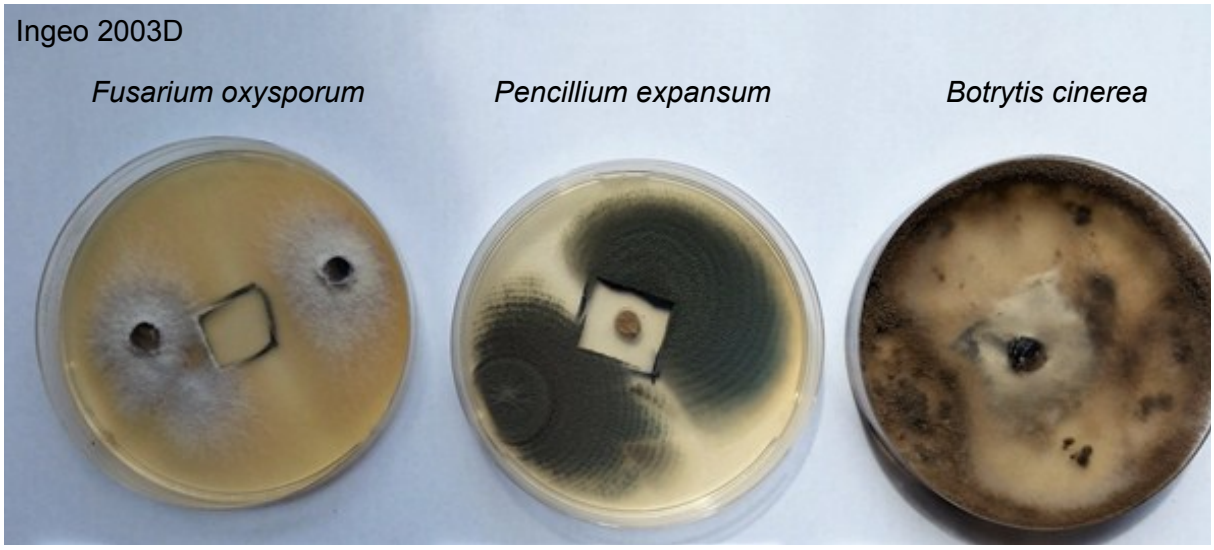

Fig. S18 The growth of the selected fungal strains after 7 days in the presence of control polymeric film of Ingeo 2003D. The films marked by black frame were laid on agar plates together with discs of fungal strains.

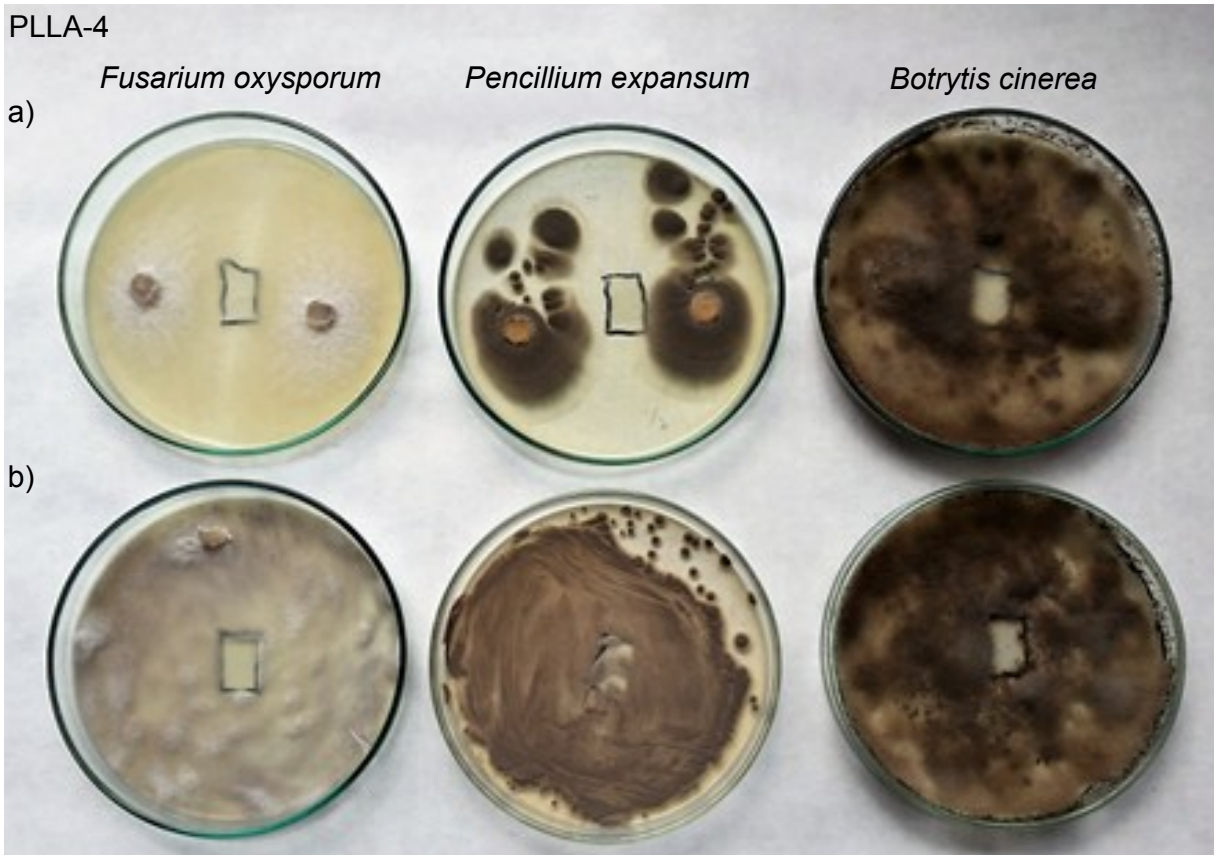

Fig. S19 The growth of the selected fungal strains after 28 days in the presence of polymeric film of PLLA-4 marked by black frame; a) films were laid on agar plates together with discs of fungal strains; b) films were placed on the agar plates with grown fungal colonies.

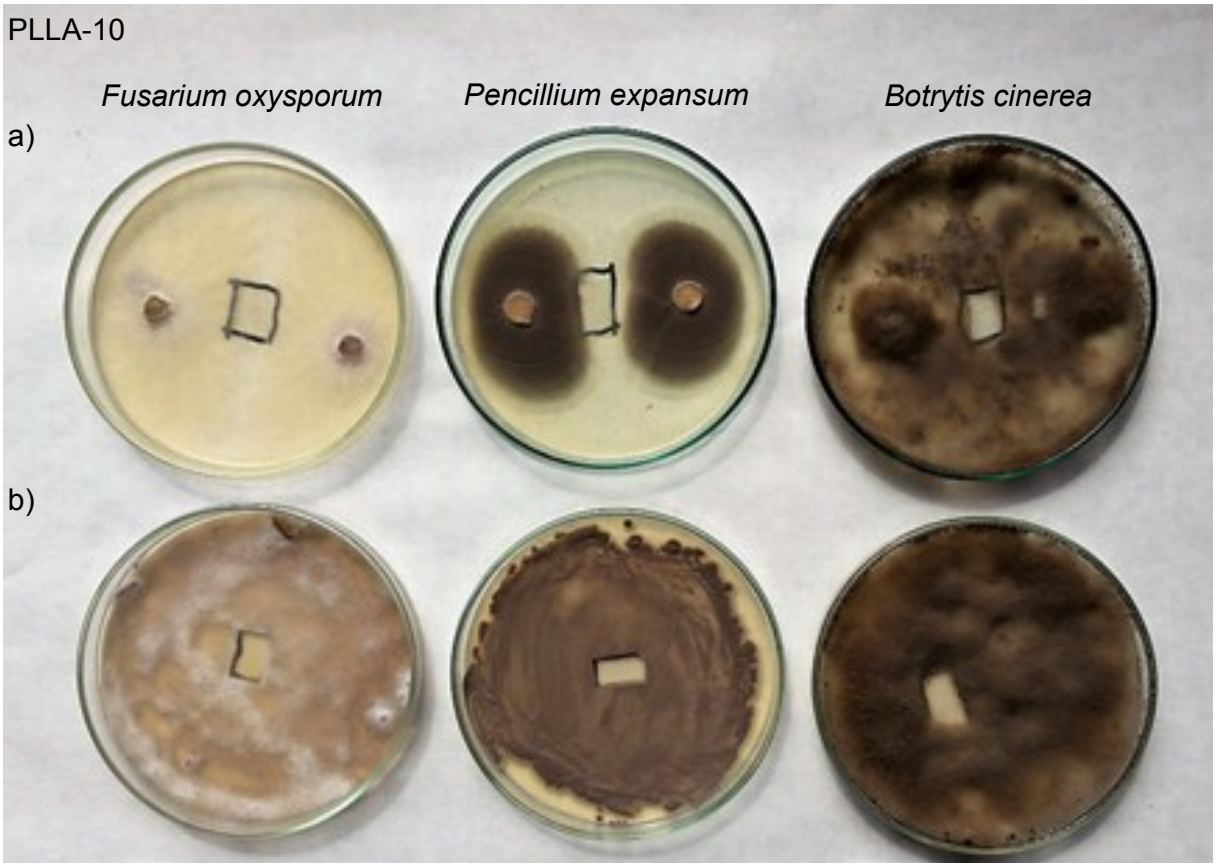

Fig. S20 The growth of the selected fungal strains after 28 days in the presence of polymeric film of PLLA-10 marked by black frame; a) films were laid on agar plates together with discs of fungal strains; b) films were placed on the agar plates with grown fungal colonies.