Electronic Supplementary Material (ESI) for Polymer Chemistry

Supporting Information

Fully bio-based poly(L-lactide)-*b*-poly(ricinoleic acid)-*b*-poly(L-lactide) triblock copolyesters : investigation of solid-state morphology and thermo-mechanical properties.

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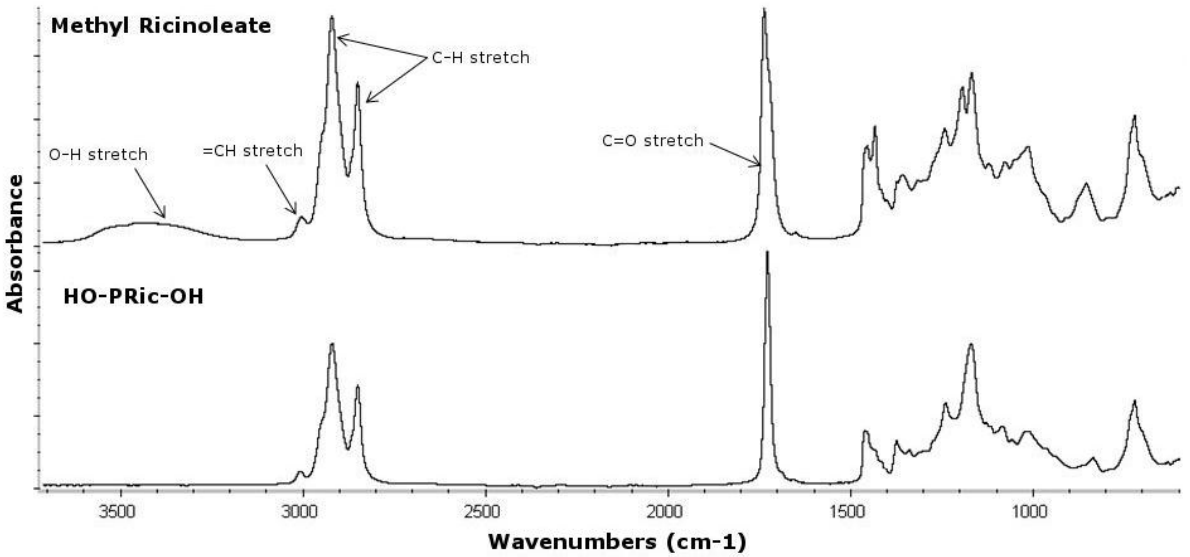

Figure S1 : FTIR-ATR spectra of methyl ricinoleate and HO-PRic-OH.

Table S1: Molecular characteristics of the synthesized HO-PRic-OH

	Methylricinoleate /Propanediol (mol)[a]	M_w(g/mol)[b]	M_n(g/mol)[c]	D[b]	%HO-PRic-OH[c]
HO-PRic-OH	100/6	19 050	10 800	1.7	96

(a) Molar ratio Methyl Ricinoleate/1,3-propanediol in feed (b) SEC, THF, PS calibration (c) 1H-NMR

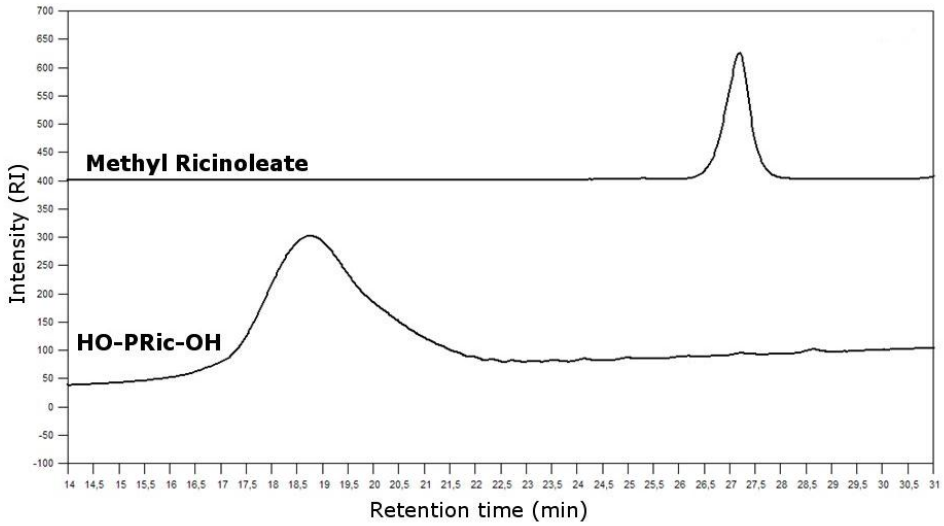

Figure S2 : SEC traces of Methyl Ricinoleate and HO-PRic-OH.

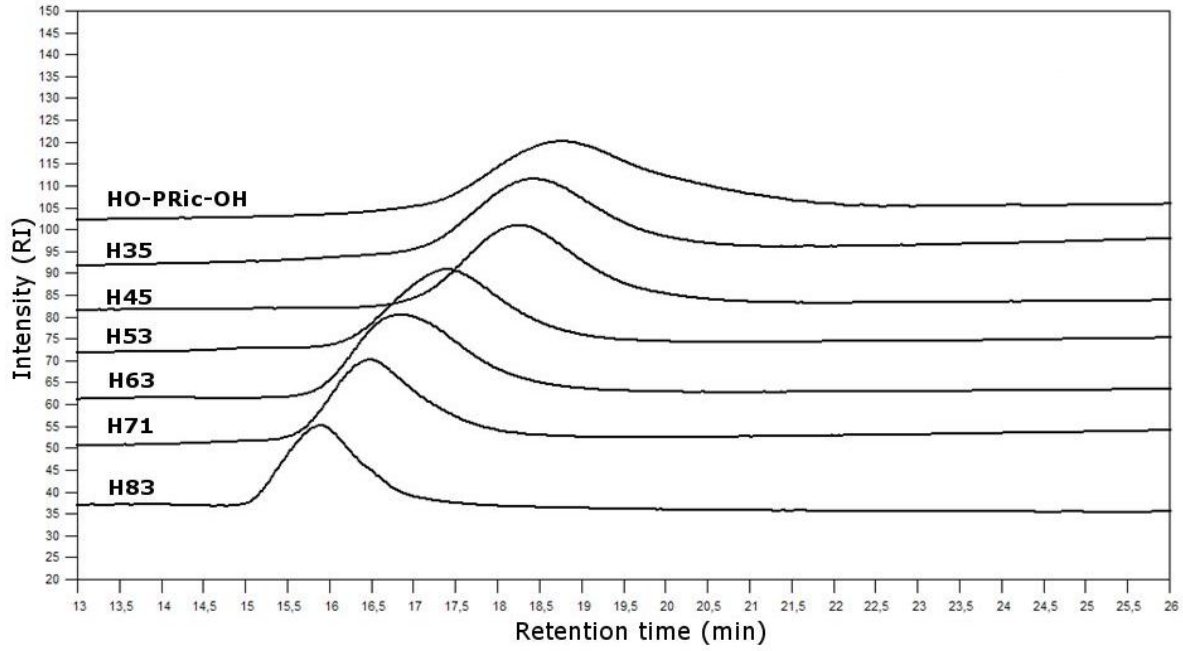

Figure S3 : SEC traces of HO-PRic-OH , H35, H45, H53, H63, H71 and H83.

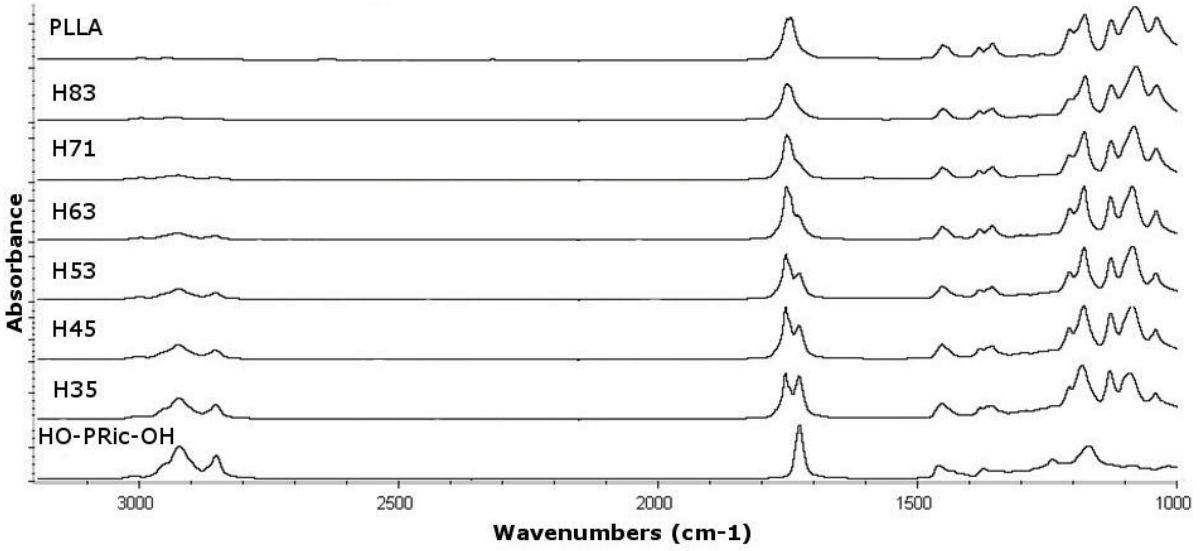

Figure S4 : Stacked FTIR-ATR spectra of HO-PRic-OH, PLLA and the copolymers.

Table S2 : Isothermal crystallization parameters.

	n	$k.10^{-3}$ (min-n)	$t_{1/2}$ (min)	R^2
H83	1.93	41.5	4.29	0.9993
H71	1.98	45.7	3.94	0.9994

H63	2.26	7.1	7.59	0.9999
H53	3.11	0.012	33.81	0.9998
H45	4.02	0.0007	31.04	0.9983
H35	-	-	-	-

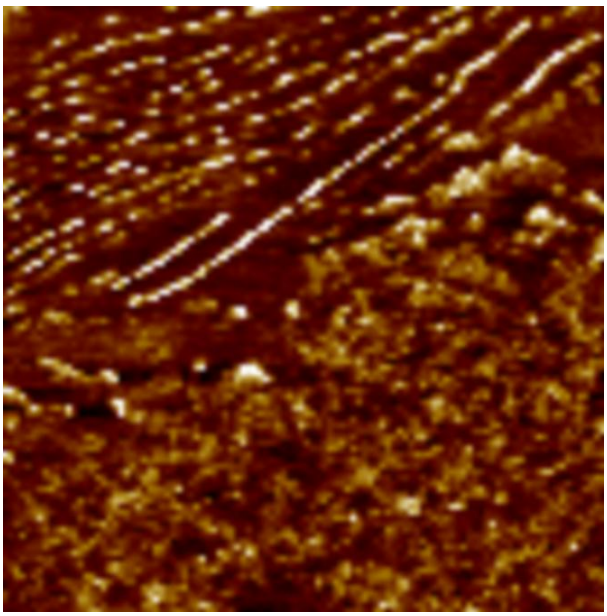

Figure S5 : AFM image of annealed H45 (1µm*1µm).

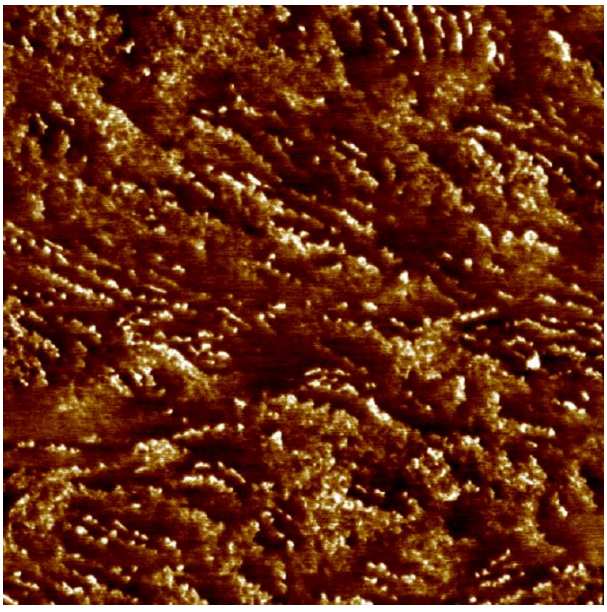

Figure S6 : AFM image of annealed H35 (3µm*3µm).

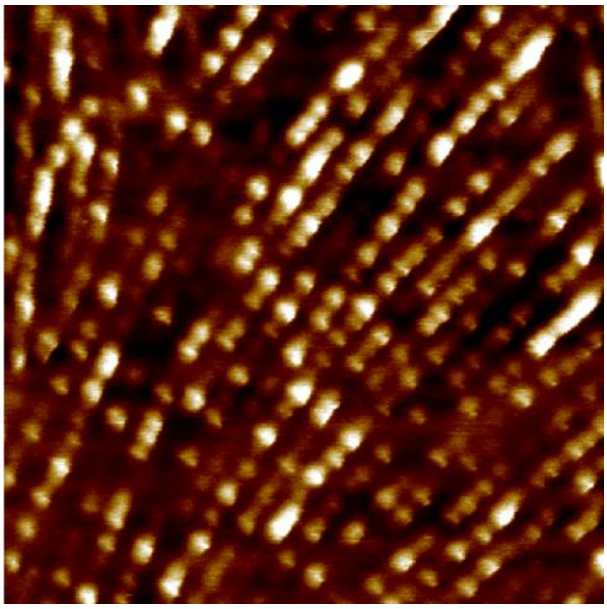

Figure S7 : AFM image of annealed H53 (500nm*500nm).

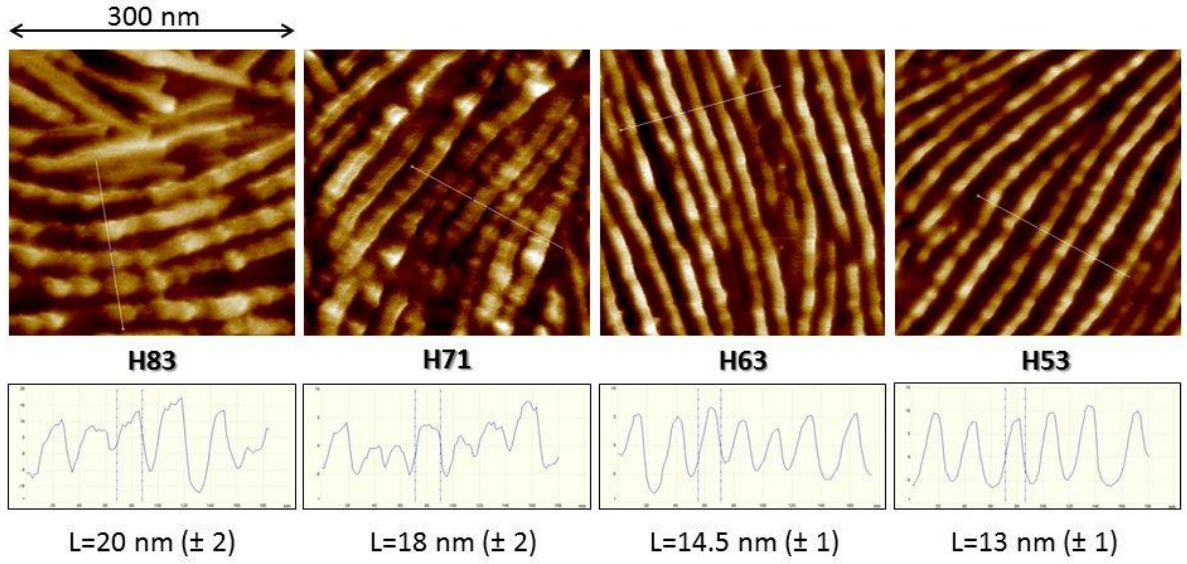

Figure S8 : Phase profiles and AFM images of annealed H83, H71, H63 and H53.

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