

1 Article

2 **Amine Responsive Poly(lactic acid) (PLA) and**
 3 **Succinic Anhydride (SAh) Graft-Polymer: Synthesis**
 4 **and Characterization - Supplementary Information**

5 **Adrián Lopera-Valle¹, Anastasia Elias^{1,*}**

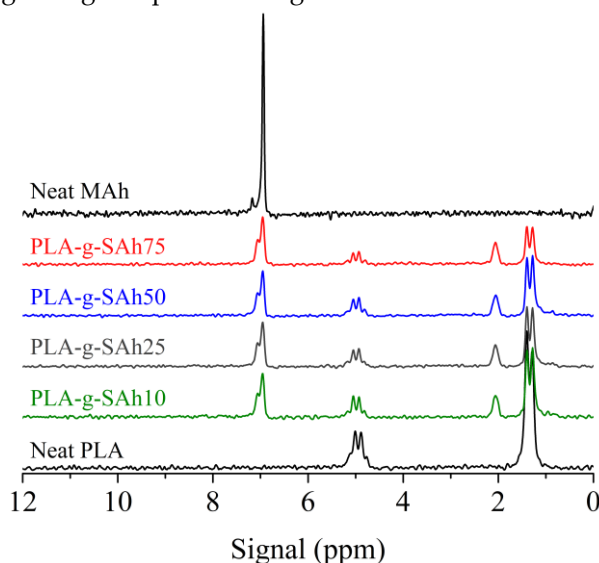
6 ¹ Department of Chemical and Materials Engineering, University of Alberta, Donadeo Innovation Centre for
 7 Engineering, Edmonton, Alberta, T6G 1H9, Canada; lopera@ualberta.ca (A.L-V); aelias@ualberta.ca (A.E.)

8 * Correspondence: aelias@ualberta.ca

9 Received: date; Accepted: date; Published: date

10 **1. Proton nuclear magnetic resonance (¹H-NMR)**

11 The ¹H-NMR spectra, Figure S1, were used to estimate the degree of grafting on SAh into PLA.
 12 The spectra for neat PLA shows the representative signals at 1.2-1.5 and 5.0-5.2 ppm corresponded to
 13 -CH³ and -H respectively. Neat MAh shows a signal at around 7 ppm, corresponding to -H. After
 14 grafting, the signal for the succinic anhydride (SAh) group was found in the region of 2-2.2 ppm [1,
 15 2]. The estimation of the degree of grafting by comparing the area of the peaks associated to MAh
 16 and SAh. The degree of grafting is reported in Figure 5.



17

18 Figure S1. ¹H-NMR spectra of neat PLA, neat MAh, and other graft polymer samples

19 **7. Reference**

- 20 1. Khankrua, R.; Pivsa-Art, S.; Hiroyuki, H.; Suttiruengwong, S. Grafting of poly (lactic acid) with maleic
 21 anhydride using supercritical carbon dioxide, *IOP Conf. Ser. Mater. Sci. Eng.*, **2015**, vol. 87, no. 1, p. 012066.
 22 DOI: 10.1088/1757-899X/87/1/012066.
 23 2. Hwang, S. W. *et al.* Grafting of maleic anhydride on poly(L-lactic acid). Effects on physical and mechanical
 24 properties, *Polym. Test.*, **2012**, vol. 31, no. 2, pp. 333–344. DOI: 10.1016/j.polymertesting.2011.12.005.



© 2019 by the authors. Submitted for possible open access publication under the terms
 and conditions of the Creative Commons Attribution (CC BY) license
 (<http://creativecommons.org/licenses/by/4.0/>).

25