

Supporting Information for

**Enhanced mechanical and biological characteristics of PLLA
composites through surface grafting of oligolactide on magnesium
hydroxide nanoparticles**

*Eun Young Kang,^{1,2,†} Sung-Bin Park,^{1,†} Bogyu Choi,¹ Seung-Woon Baek^{1,3} Kyoung-Won Ko,¹,
Won-Kyu Rhim¹, Wooram Park¹, Ik-Hwan Kim,² and Dong Keun Han^{1,*}*

¹Department of Biomedical Science, CHA University, 335 Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi 13488, Korea

²Department of Biological Science, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul 02841, Korea

³Department of Biomedical Engineering, Sungkyunkwan University, 2066 Seobu-ro, Jangan-gu, Gyeonggi-do 16419, Korea

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*Corresponding Author: D. K. H. (dkhan@cha.ac.kr)

[†]These authors equally contributed to this work.

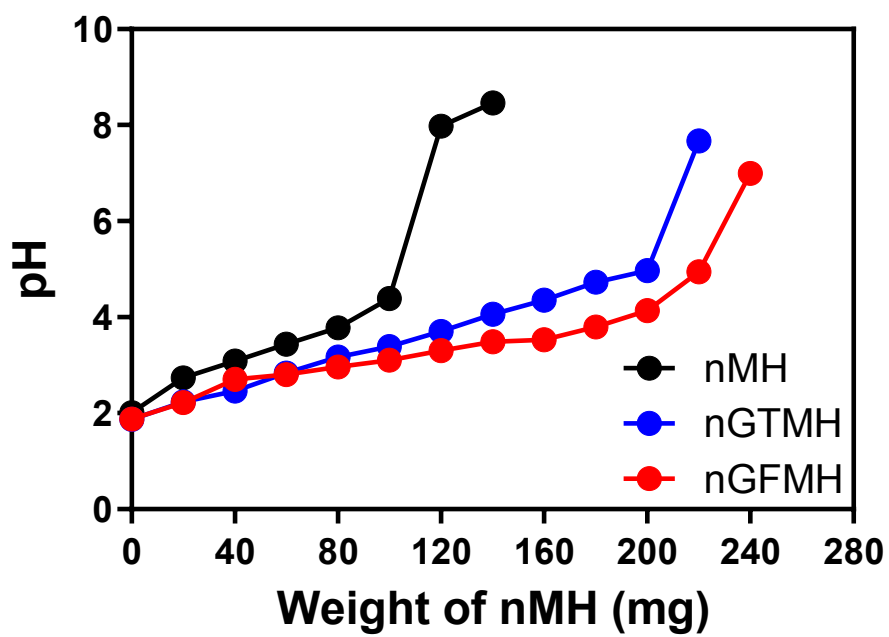


Fig. S1. Titration curve for 5 ml of 1M DL-lactic acid with nMH, nGTMH, and nGFMH.

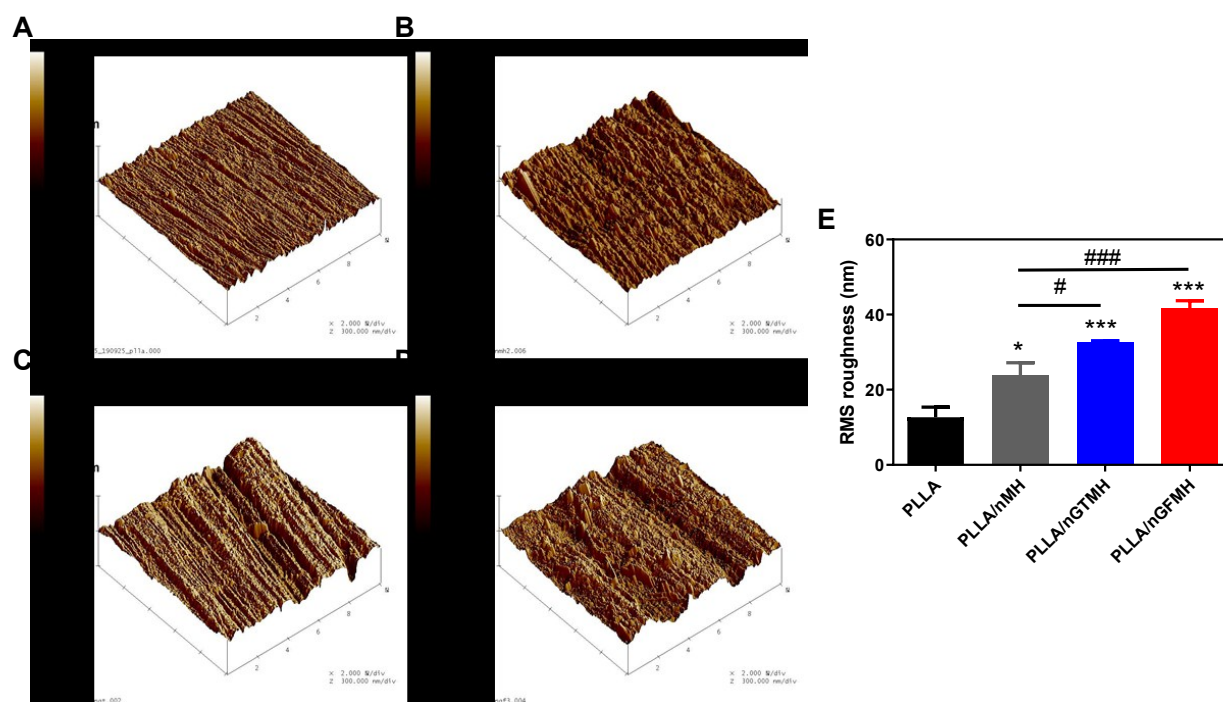


Fig. S2. (A-D) AFM images of each PLLA composite and (E) graphs of their root mean squared (RMS) surface roughness values from the $10 \times 10 \mu m^2$ scan size (* $p < 0.05$, *** $p < 0.001$ vs PLLA, # $p < 0.05$, and ### $p < 0.001$ vs. PLLA/nMH).

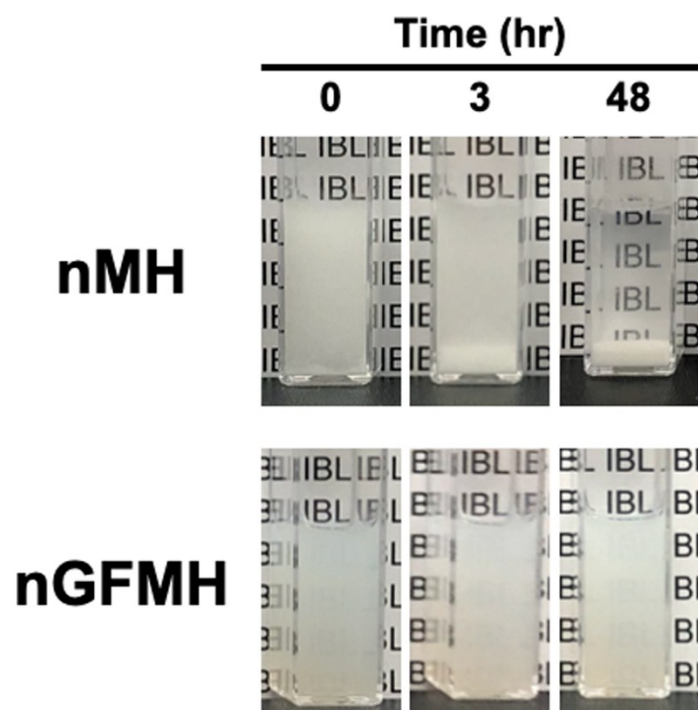


Fig. S3 Photographs of unmodified nMH and surface modified nMH in ethanol for different time, at 1% concentration.

Table S1. Thermal properties of PLLA-based composites at 20 phr

Sample	T _g (°C)	T _c (°C)	T _m (°C)
PLLA	52.1	104.2	172.9
nMH	53.4	85.3	173.6
nGTMH	54.8	85.4	175.2
nGFMH	57.1	85.3	174.8

*T_g, T_c and T_m represent the glass transition temperature, crystallization temperature and melting temperature by DSC, respectively.