

SUPPLEMENTARY MATERIALS

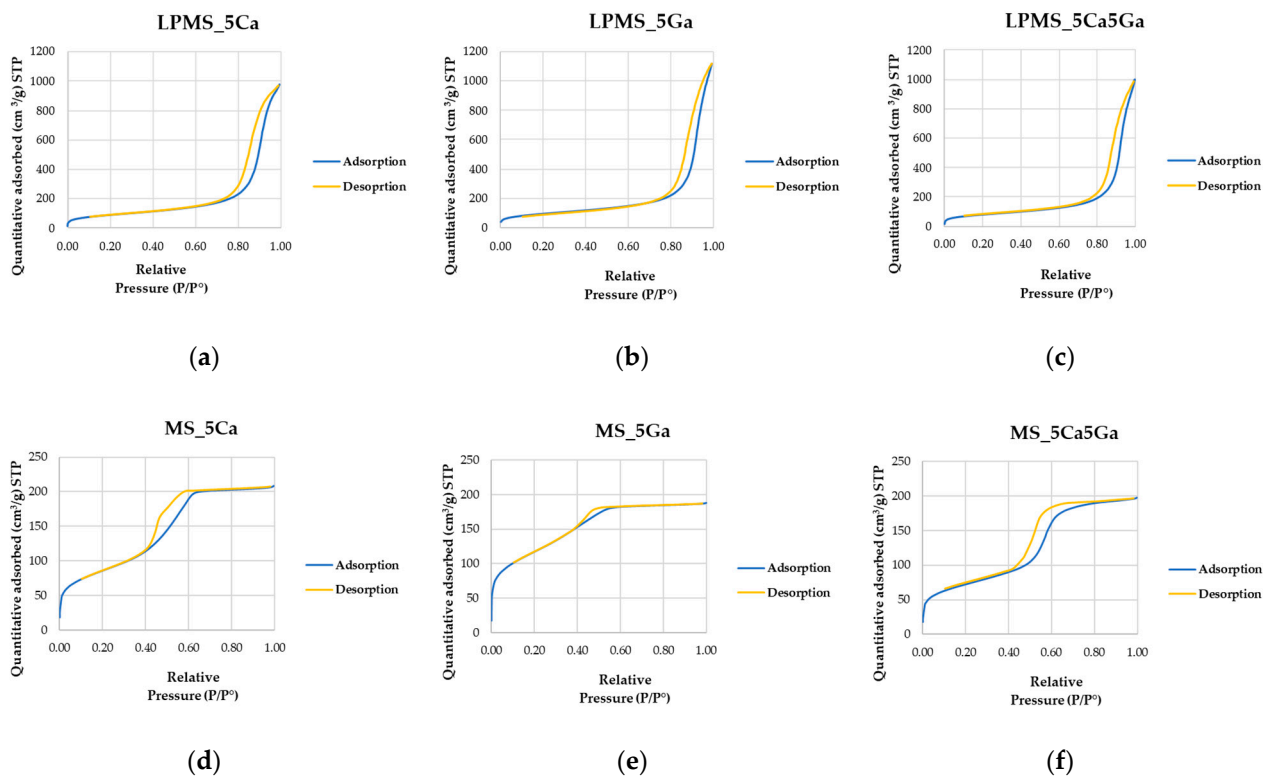


Figure S1. BET surface area analysis results: N₂-adsorption-desorption isotherm plots of samples (a) LPMS_5Ca, (b) LPMS_5Ga, (c) LPMS_5Ca5Ga, (d) MS_5Ca, (e) MS_5Ga, (f) MS_5Ca5Ga.

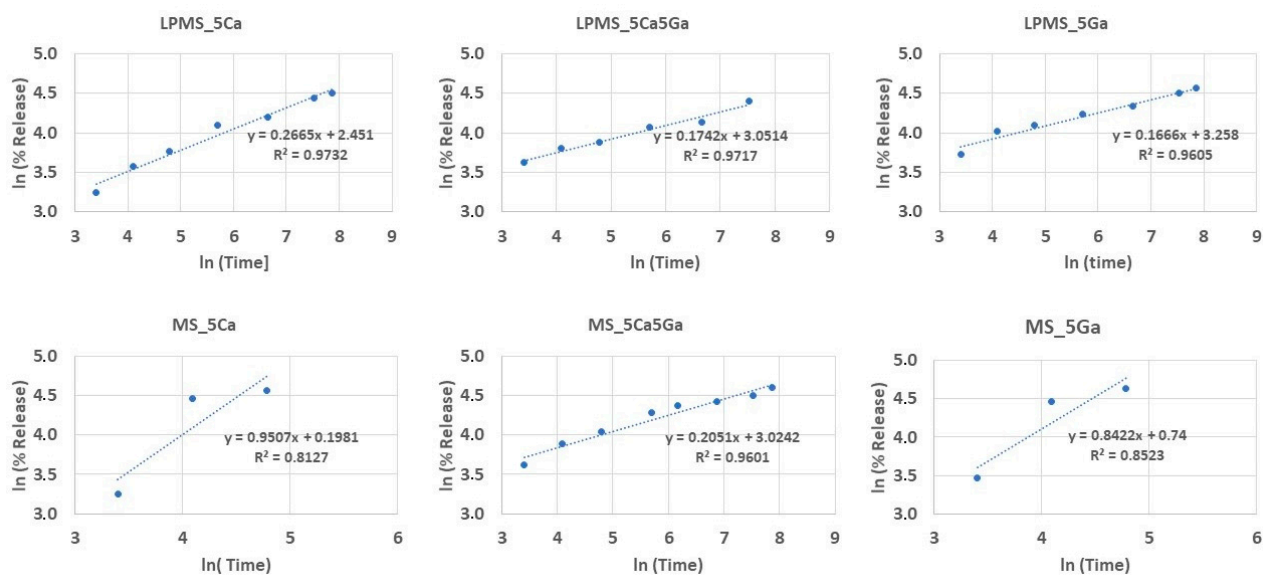


Figure S2. Korsmeyer-Peppas model release kinetics of nisin aspirin obtained for LPMS and MS samples.

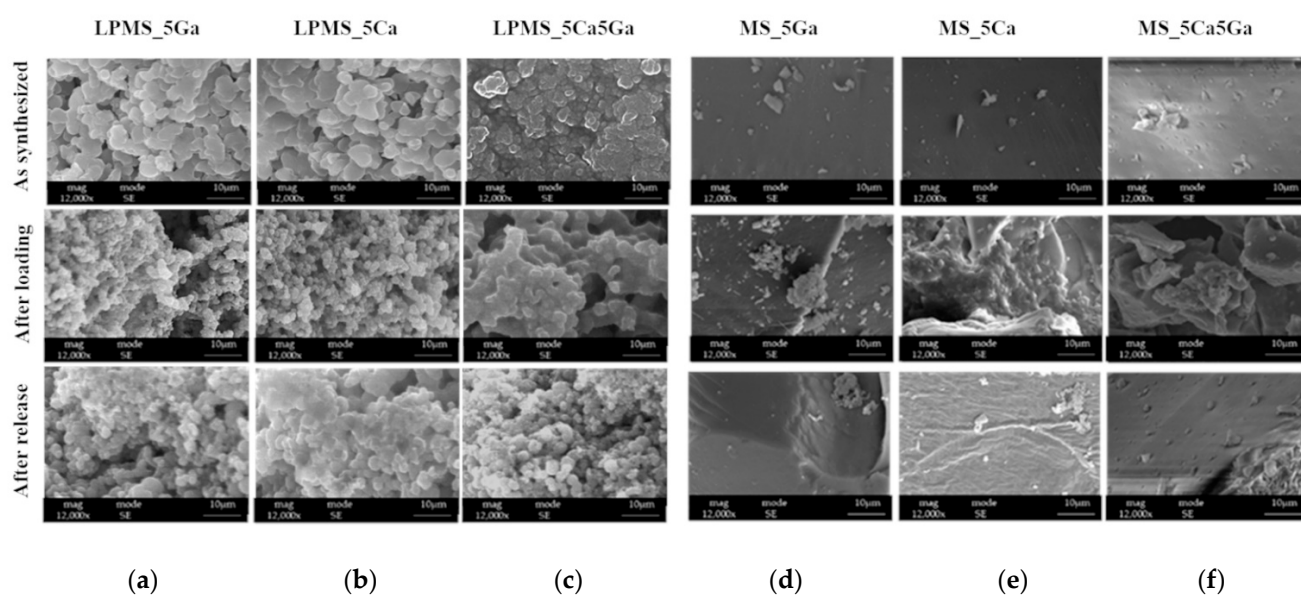


Figure S3. SEM-FEG images of (a) LPMS_5Ga, (b) LPMS_5Ca, (c) LPMS_5Ca5Ga, (d) MS_5Ga, (e) MS_5Ca, (f) MS_5Ca5Ga. In the first row are reported images of as synthesized structures, in the second are reported loaded structures, and in the last row are reported structures after nisin release.

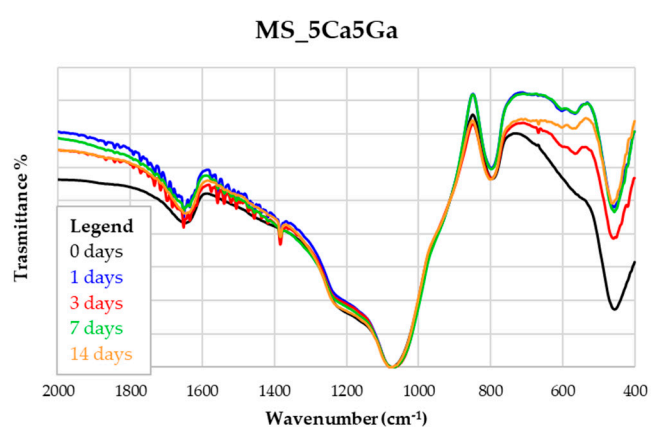
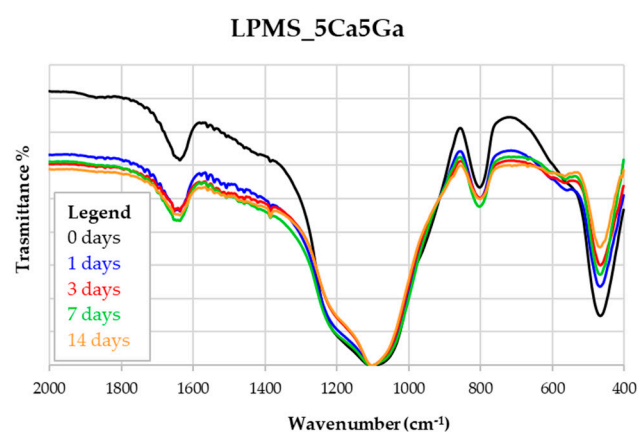
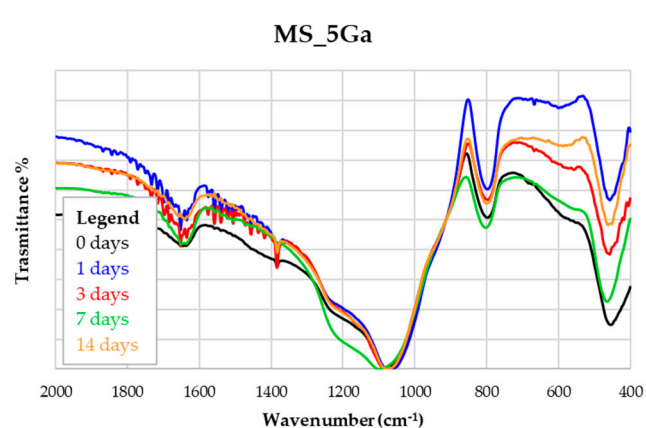
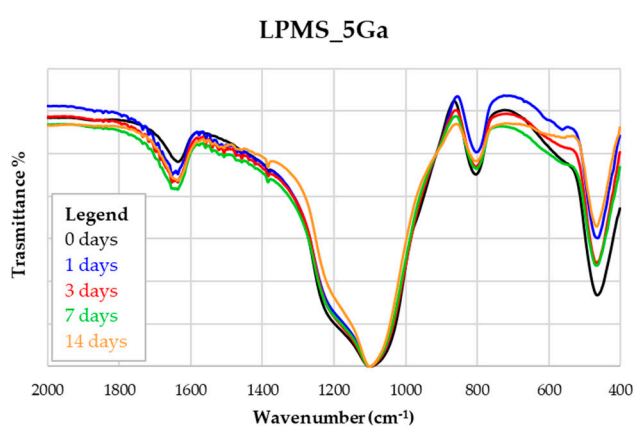
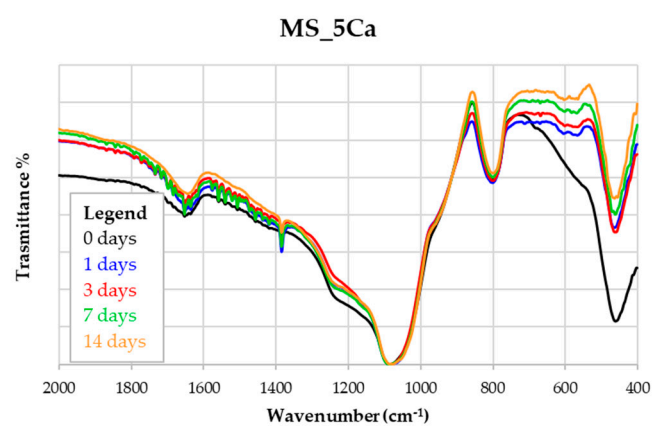
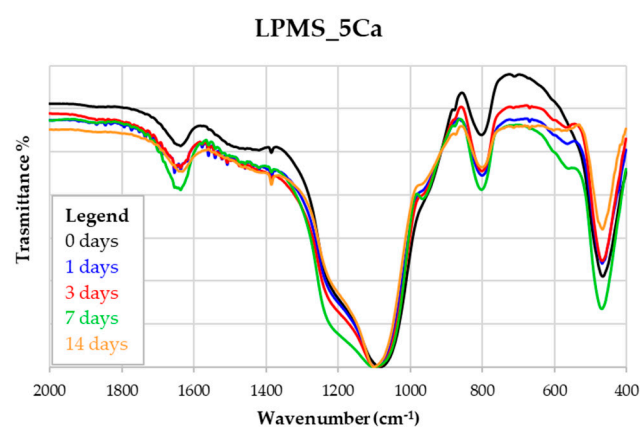


Figure S4. FT-IR spectra of all samples were acquired at 1, 3, 7, and 14 days for samples prepared as KBr pads. In order: (a) LPMS_5Ca, (b) MS_5Ca, (c) LPMS_5Ga, (d) MS_5Ga, (e) LPMS_5Ca5Ga and (f) MS_5Ca5Ga.

Table S1. SSA_{BET} and Total Pores Area determined respectively with N_2 adsorption/desorption and Hg-Porosimetry.

Sample	SSA_{BET} N_2 ads./des. (m^2/g)	Pore Size N_2 ads./des. (nm)	Pore Volume N_2 ads./des. (cm^3/g)	Total Pores Area Hg-Porosimetry (m^2/g)
LPMS_5Ca	323	16.3	1.56	392
LPMS_5Ga	324	19.2	1.77	376
LPMS_5Ca5Ga	283	19.1	1.56	344
MS_5Ca	306	4.0	0.31	73
MS_5Ga	417	3.0	0.23	53
MS_5Ca5Ga	252	4.8	0.29	179