Minimizing acylation of peptides in PLGA microspheres

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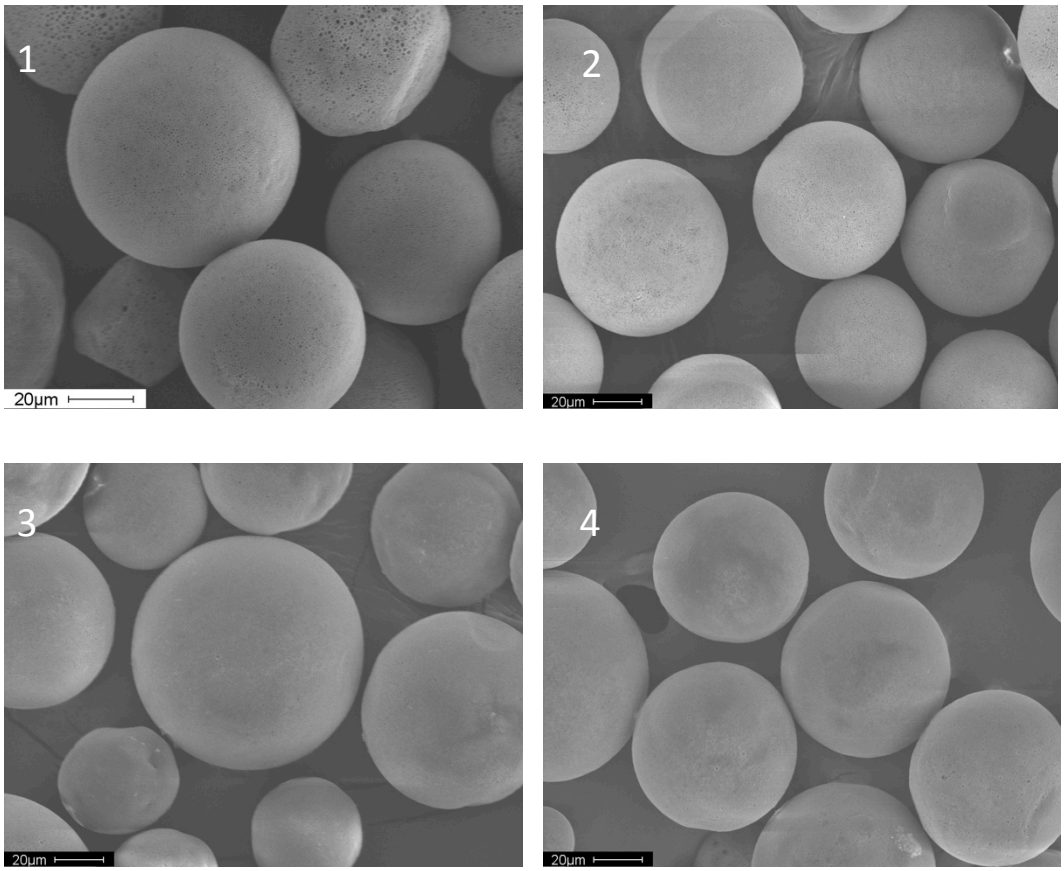
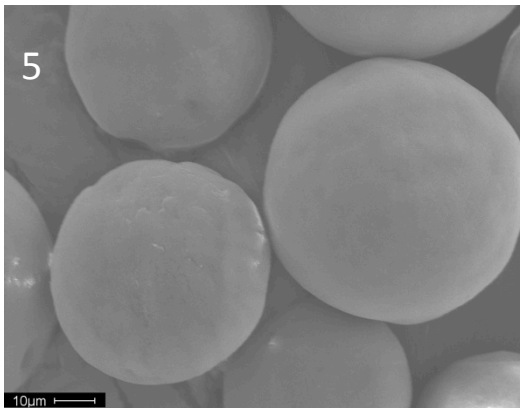
Supporting information

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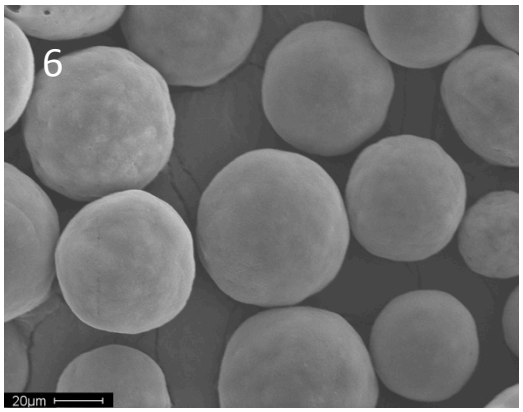
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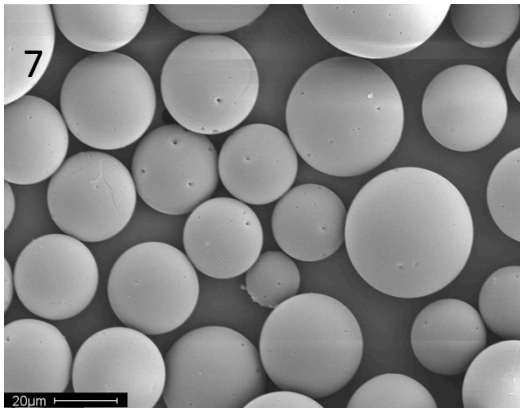
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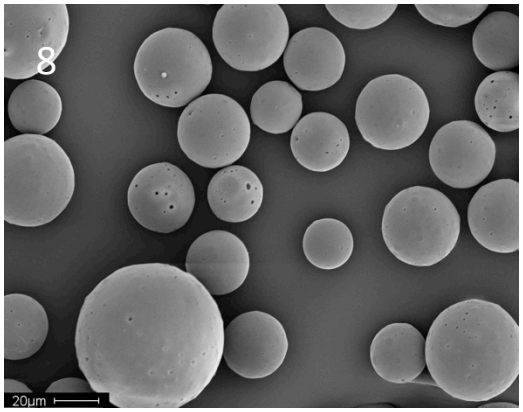
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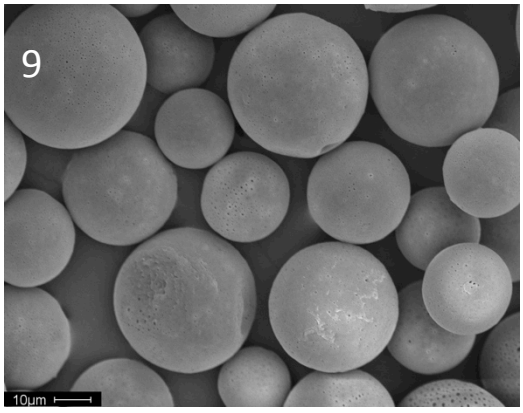
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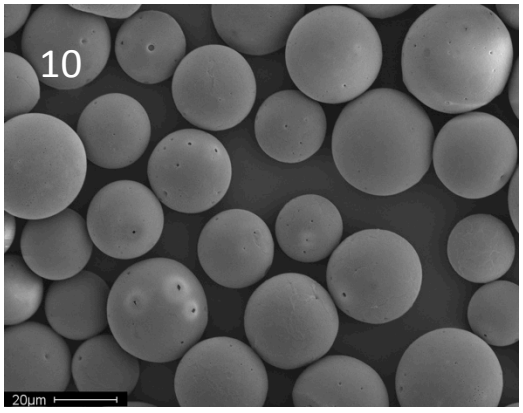
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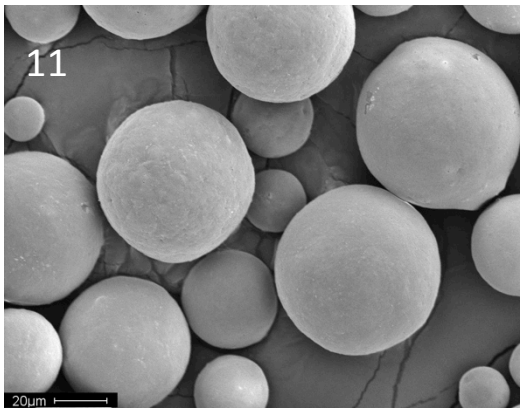
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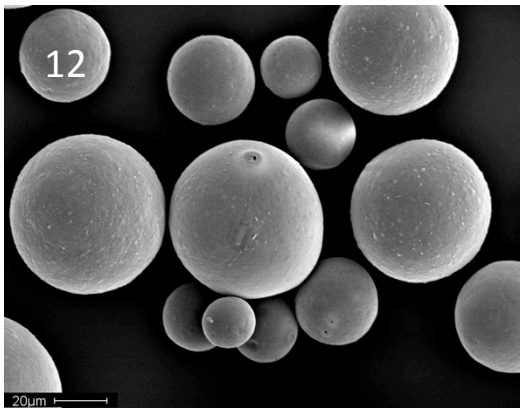
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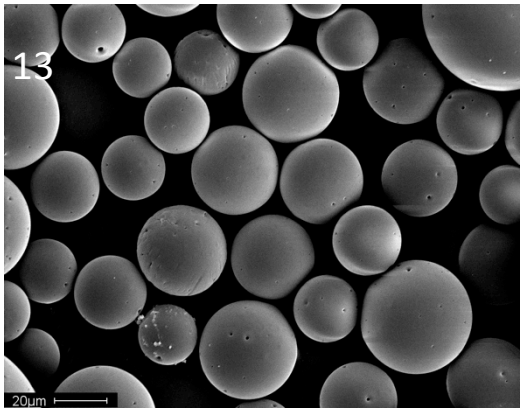
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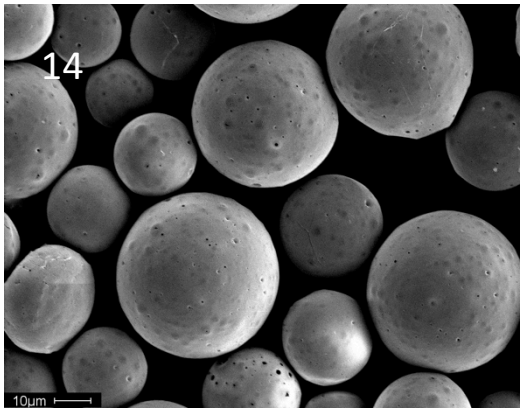
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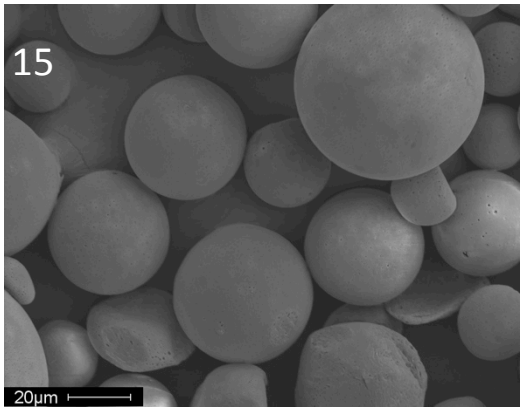
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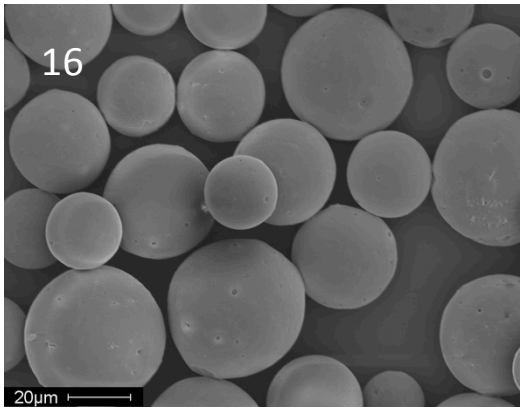
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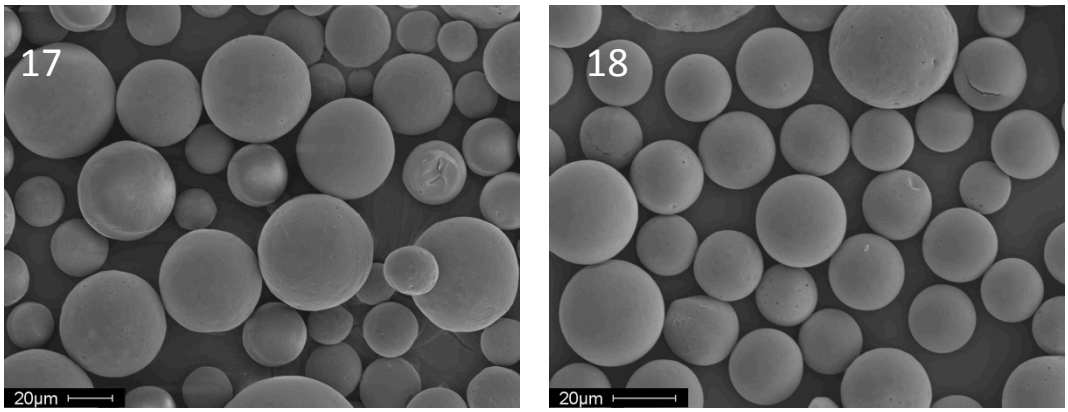


Figure S1. Morphology of peptide-PLGA microspheres with or without excipients, formulation 1-18, as recorded by scanning electron microscopy.

Table S1. Observed molecular masses by MALTI-TOF analysis of salmon calcitonin (sCT) and human parathyroid hormone (hPTH) and their impurities recovered from PLGA millicylinders incubated in 97% RH and 37 °C for 21 days.

Observed mass (Da)	Expected Peptide
3434.0	sCT
3456.1	sCT-Na^+
3492.6	sCT-GA
3506.1	sCT-LA
3550.0	sCT-2GA
3564.4	sCT-LA-GA
3578.9	sCT-2LA
4118.9, 4118.3	$hPTH_{1-34}$
4139.0	$hPTH_{1-34}$-Na^+
4177.2	$hPTH_{1-34}$-GA
4191.1	$hPTH_{1-34}$-LA
4249.6	$hPTH_{1-34}$-LA-GA

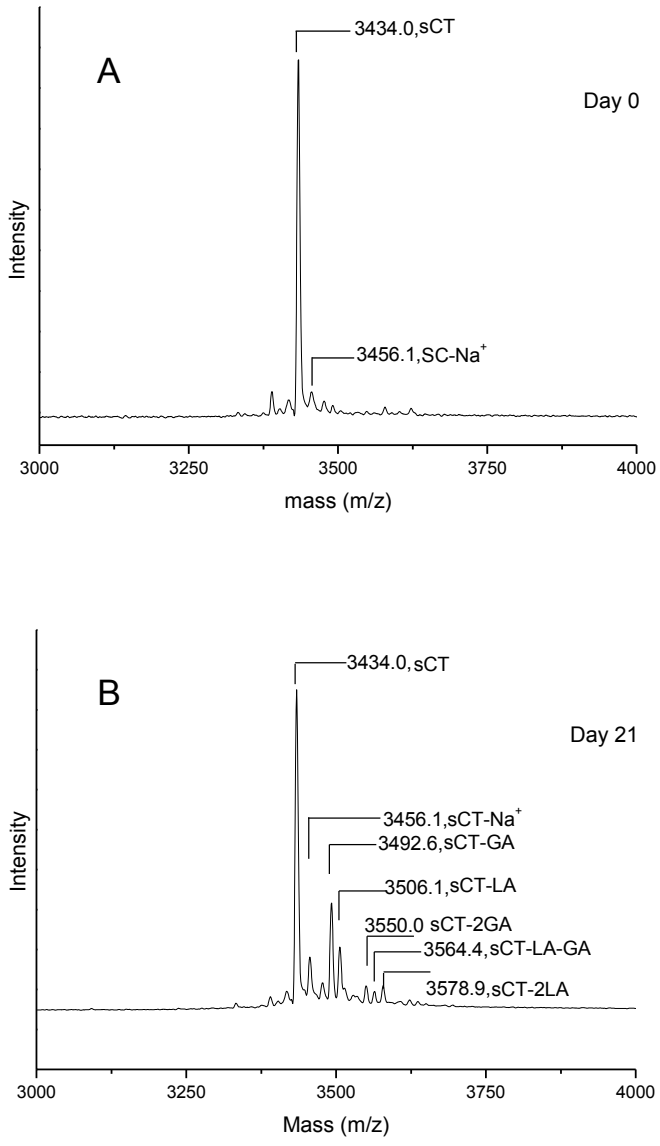
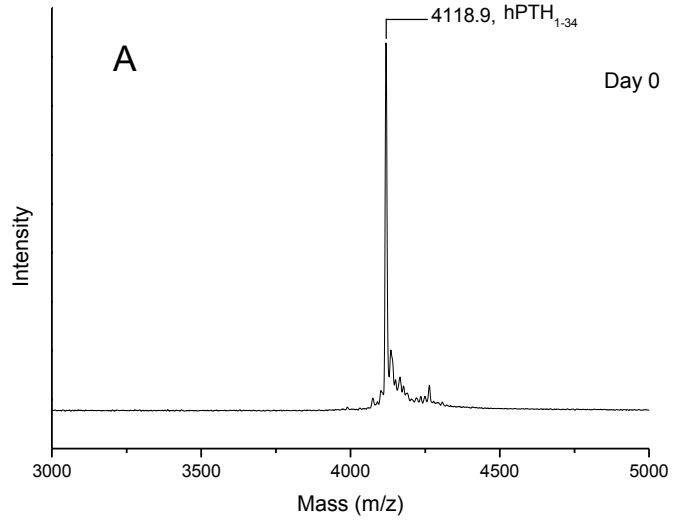
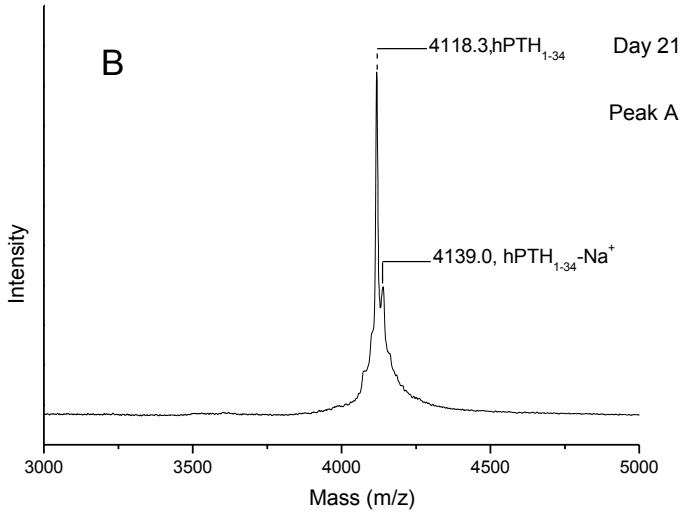


Figure S2. MALDI-TOF MS of sCT and its acylation products inside millicylinders incubated for 0 (A) and 21 days (B) at 97% RH and 37 °C


A
Day 0
4118.9, hPTH1-34
Intensity
3000
3500
4000
4500
5000
Mass (m/z)


B
Day 21
Peak A
4118.3,hPTH1-34
4139.0, hPTH1-34-Na+
Intensity
3000
3500
4000
4500
5000
Mass (m/z)

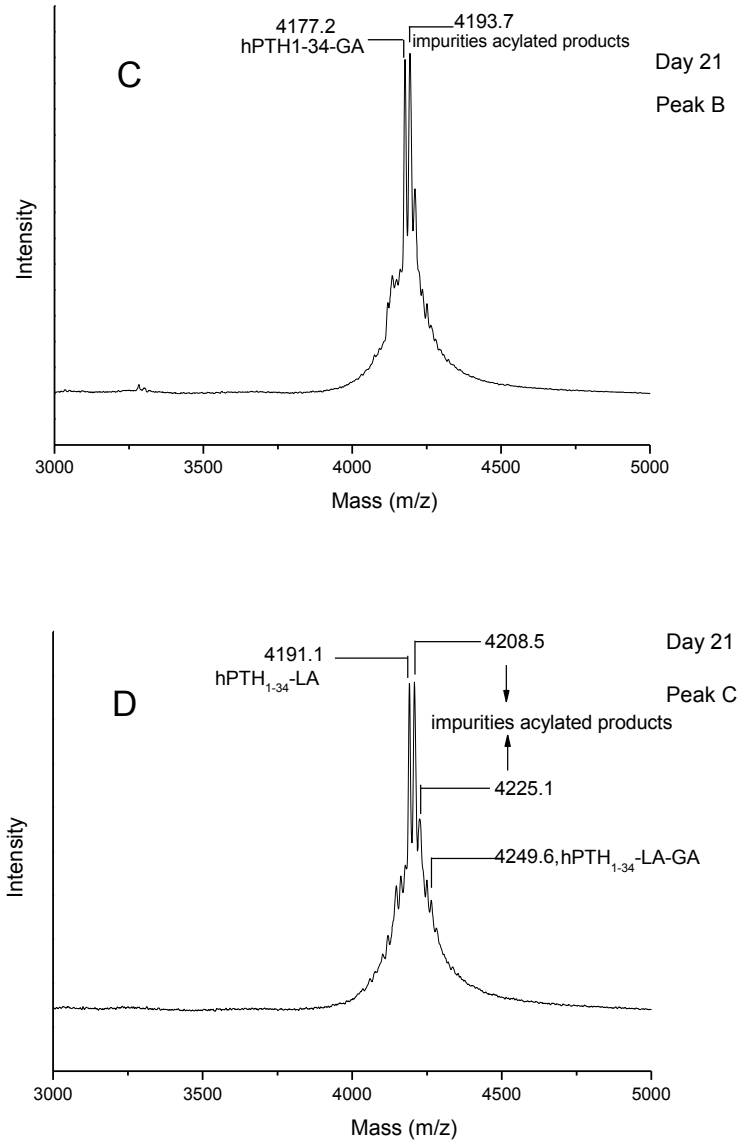


Figure S3. MALDI-TOF MS of hPTH and its acylation products inside millicylinders incubated for 0 (A) and 21 days (B, C and D) at 97% RH and 37 °C

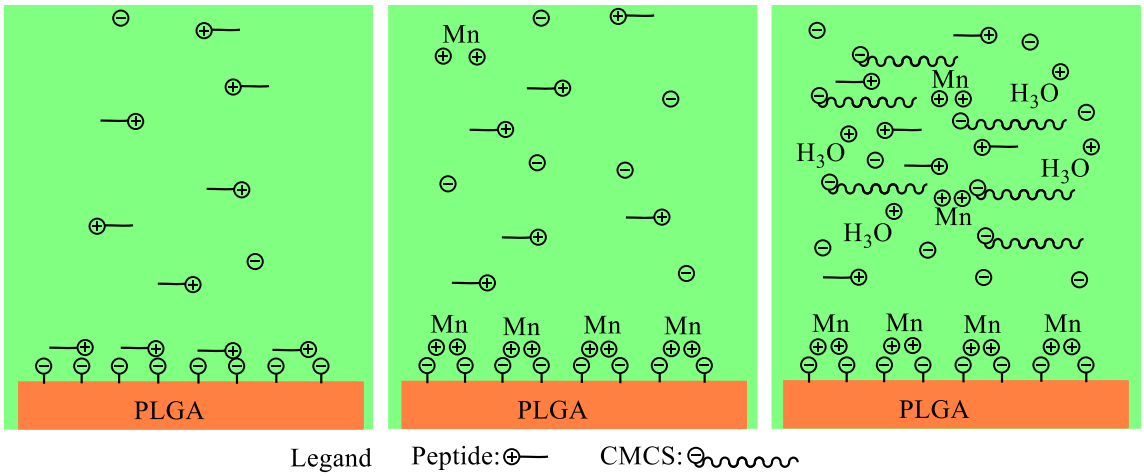


Figure S4. Proposed potential mechanisms to explain stabilization of peptide by divalent cations and CMCS. Peptide adsorption and acylation (A); acylation is inhibited by blocking peptide from combining with negative sites in PLGA (B); acylation is inhibited by increasing peptide partitioning in a swollen CMCS/divalent cation phase(C)