

## Supporting Information

### Enzymatically Degradable, Starch-Based Layer-by-Layer Films: Application to Cytocompatible Single-Cell Nanoencapsulation

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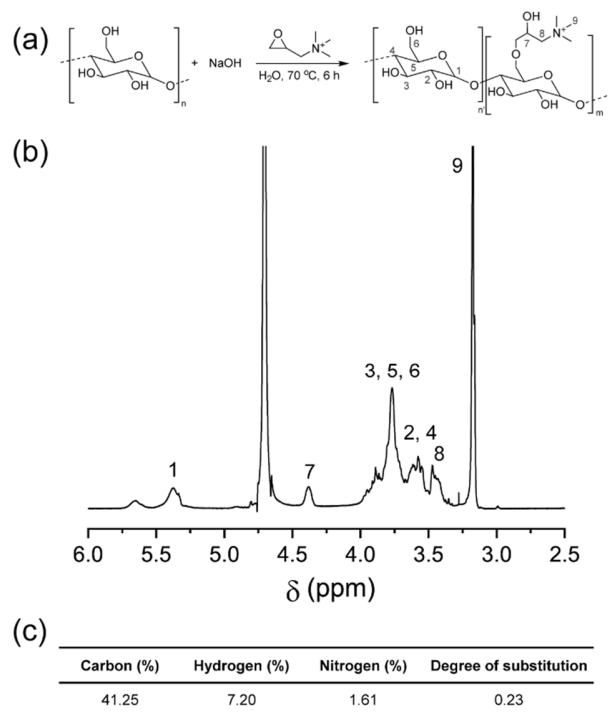


Fig S1. (a) Synthesis scheme for the synthesis of *c*-ST from ST. (b)  $^1\text{H}$ -NMR spectrum of *c*-ST with peak assignments. (c) Elemental-analysis data of *c*-ST.



Fig S2. Digital photographs of the water droplets on bare gold, and  $[c\text{-ST}]_5[\text{ALG}]_4$  and  $[c\text{-ST}]_5[\text{ALG}]_5$  multilayer films.

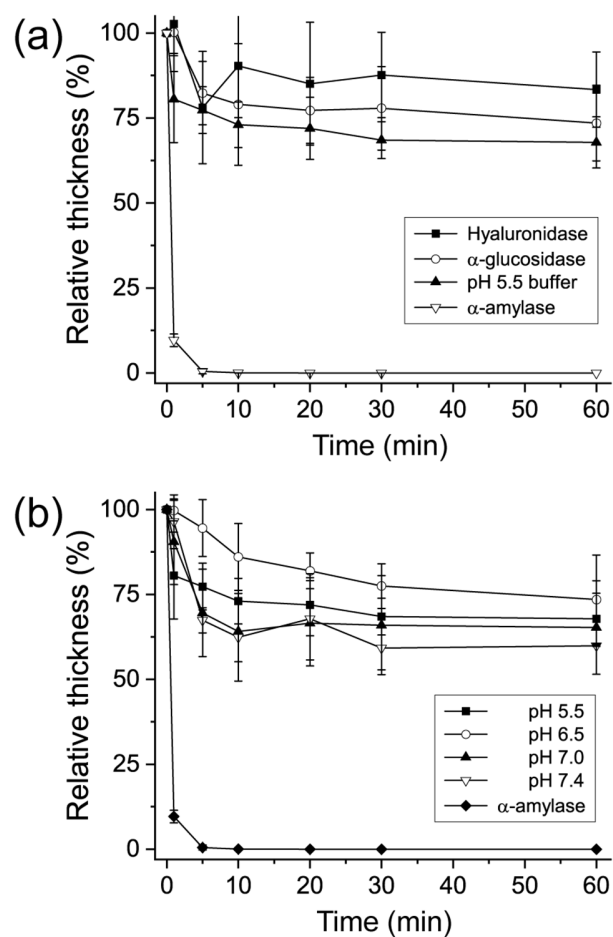


Fig S3. Graphs of ellipsometric-thickness vs. reaction time: (a) various enzymes (concentration:  $500 \mu\text{g mL}^{-1}$ ) and (b) various pH values.

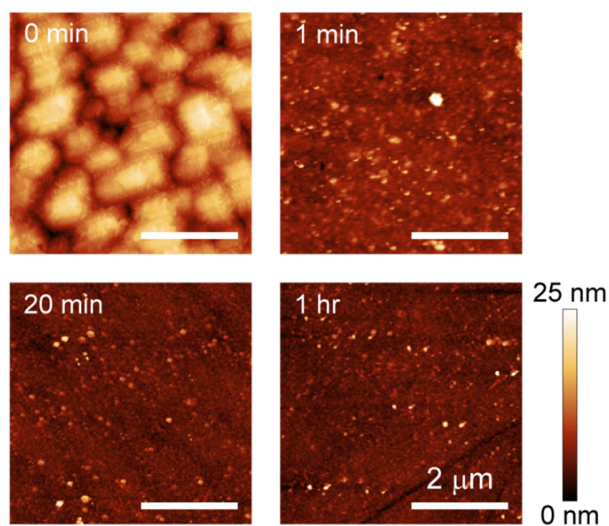


Fig S4. AFM images of the  $[c\text{-ST/ALG}]_5$  multilayer films after treatment with  $\alpha$ -amylase ( $500 \mu\text{g mL}^{-1}$ ).

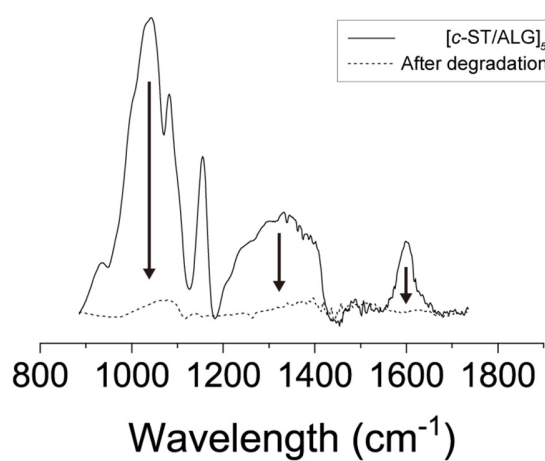


Fig S5. FT-IR spectrum of the  $[c\text{-ST/ALG}]_5$  multilayer films after 1 h of treatment with  $\alpha$ -amylase ( $500 \mu\text{g mL}^{-1}$ ).