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Electronic Supporting Information

Chitosan/Snail slime films as multifunctional platforms for potential biomedical and cosmetic applications: physical, and chemical characterization

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1. Profilometer analyses.

White light vertical scanning interferometry (WLVSI) was used to determine the topography of the chitosan-based films and estimate their route mean square (RMS) surface roughness. Analyses were carried out using a Bruker Contour GT-K0X 3D optical microscope equipped with a 50x Mirau-type interferometric objective and a 0.55x camera zoom (0.23×0.17 mm^2 field of view). The RMS roughness values are the mean of 30 measurements carried out over 0.17×0.23 mm^2 surface areas.

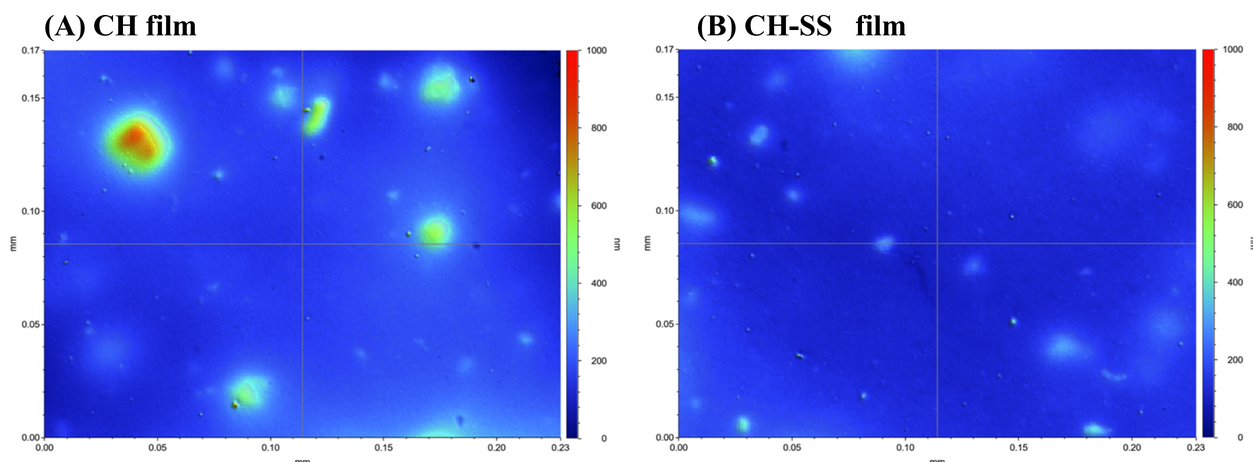

Figure S1. 2D white light vertical scanning interferometry (WLVSI) images of the CH (**A**) and CH-SS (**B**) films, containing 0% and 8% (v/v) of SS, respectively.

2. X-ray diffraction (XRD) analyses.

X-ray diffraction (XRD) data were collected at room temperature from a sample of Chitosan/Snail slime films by using a Bruker D8 Discover diffractometer (operating conditions 40 kV, 40 mA) equipped with a Goebel mirror for copper radiation ($\lambda_{K\alpha1}$ = 1.54056 Å, $\lambda_{K\alpha2}$ = 1.54439 Å), and a scintillator detector. Data were collected in a reflection geometry at a fixed incidence angle of $\omega = 1°$ while moving the detector between 10° and 70° with a step size of 0.05°.

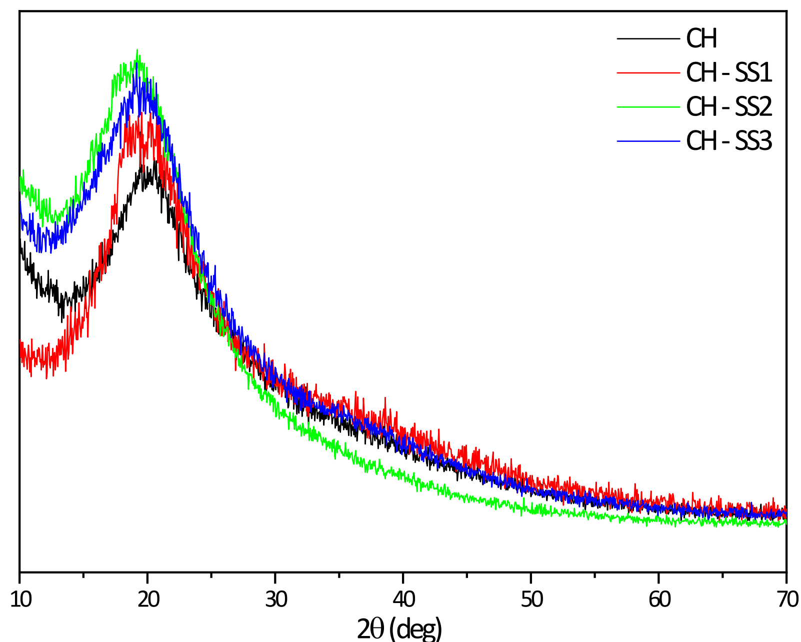

Figure S2: XRD diffraction patterns of CH, CH-SS1, CH-SS2, and CH-SS3 films, containing 0%, 4%, 8%, and 12 % (v/v) of SS, respectively.

3. Water Contact Angle (WCA) analyses.

Experimentally, in the present study, the wettability of the chitosan-based films was evaluated using a KSV CAM 200 optical contact angle meter by depositing on the samples 2 μL distilled water droplets.

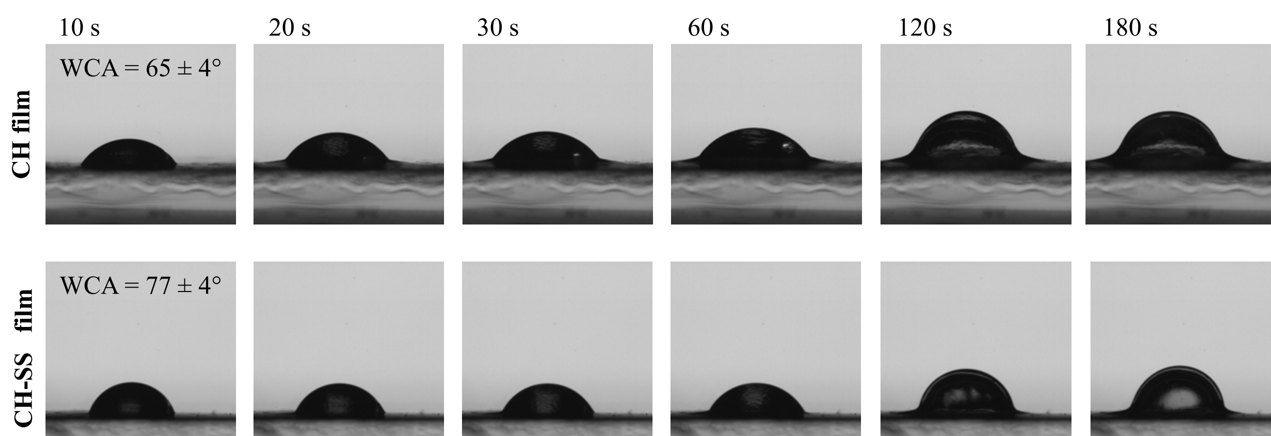

Figure S3. Time-lapse images acquired over time with an optical contact angle meter after depositing a 2 μL distilled water droplet on the CH and CH-SS films, containing 0% and 8% of SS, respectively.

	2θ amorphous peak position (deg)	FWHM (Gaussian fit of the peak)
CH	20.3	6.1
CH - SS1	20.3	4.3
CH - SS2	19.55	6.5
CH - SS3	19.80	8.7

Table S1: The FWHM of the diffraction patterns by the Gaussian fit of the amorphous peaks, reported in Figure S2.