

Table S1. The most prominent bands detected in ATR FT-IR spectra of chitosan, 1,3- β -D-glucan, and chitosan/1,3- β -D-glucan films cross-linked at 90°C and at intermediate temperatures.

Raman shift / cm^{-1}			Wavenumber / cm^{-1}		
chitosan/ 1,3- β -D- glucan 90°C	chitosan/ 1,3- β -D- glucan 70-80°C	The type of vibrations and assignment*	chitosan/ 1,3- β -D- glucan 90°C	chitosan/ 1,3- β -D- glucan 70-80°C	The type of vibrations and assignment*
293	293	$\delta(\text{C}-\text{C}-\text{C})$	889	889	$\delta(\text{C}-\text{H})$, β -glycosidic bonds
324	324	$\delta(\text{C}-\text{C}-\text{C})$	992	992	$\delta(\text{C}=\text{O})$, $\tau(\text{C}-\text{C})$
337	-	$\tau(\text{O}-\text{C}-\text{O})$	1027	1027	ν skeletal ($\text{C}=\text{O}$)
357	357	$\delta(\text{C}-\text{C}-\text{C})$	1066	1066	$\nu(\text{C}-\text{O})$
397	397	$\delta(\text{C}-\text{C}(=\text{O})\text{C})$	1108	-	$\nu(\text{C}-\text{C})$, $\nu(\text{C}-\text{O})$
425	425	$\tau_{\text{out of plane}}(\text{H}-\text{C}-\text{C}=\text{O})$	1155	1155	$\tau(\text{C}-\text{H})$, $\nu_{\text{as}}(\text{C}-\text{O})$, $\nu(\text{C}-\text{N})$, $\nu_{\text{as}}(\text{C}-\text{O}-\text{C})$ in β -glycosidic linked rings
467	-	$\tau(\text{N}-\text{C}=\text{O})$, $\tau_{\text{in plane}}(\text{C}-\text{O}-\text{C})$	1202	1202	$\nu\text{CH}_2\text{OH}$
511	511	$\tau_{\text{in plane}}(\text{C}-\text{O}-\text{C})$	1241	-	$\nu(\text{C}-\text{H})$ in rings
527	527	$\delta(\text{C}-\text{C}-\text{N})$, $\delta(\text{C}-\text{C}-\text{C})$	1259	1259	$\nu(\text{C}-\text{O})$, $\nu(\text{N}-\text{H})$, $\nu(\text{C}-\text{O}-\text{C})$, $\nu(\text{C}-\text{OH})$
562	-	$\tau(\text{C}-\text{C}=\text{O})$	1312	1312	$\delta(\text{C}-\text{H})$, $\delta(\text{CH}_2)$ $\delta(\text{OH})$, N-acetylglucosamine (chitosan), amide III
579	579	$\delta(\text{C}-\text{C}-\text{C})$	1371	1371	$\delta_{\text{s}}(\text{CH}_3)$
608	608	$\tau_{\text{out of plane}}(\text{C}-\text{H})$	1421	1421	$\delta_{\text{s}}(\text{CH}_3)$, $\delta_{\text{s}}(\text{CH}_2)$, $\delta_{\text{s}}(\text{CH})$, $\nu_{\text{s}}(\text{C}=\text{O})$
829	829	δ aromatic ($\text{C}-\text{N}=\text{C}$)	1454	1454	$\delta_{\text{s}}(\text{CH}_3)$, $\delta_{\text{s}}(\text{CH}_2)$
892	892	$\delta_{\text{out of plane}}(\text{C}-\text{H})$, β -glycosidic bond	1584	1566	60% $\tau(\text{N}-\text{H})$, 30% $\nu(\text{C}-\text{N})$, 10% $\nu(\text{C}-\text{C})$, amide II
919	-	$\nu_{\text{s}}(\text{C}-\text{O}-\text{C})$	1646	1646	80% $\nu(\text{C}=\text{O})$, 20% $\nu(\text{C}-\text{N})$, $\tau(\text{HOH})$, amide I, water
938	938	$\delta_{\text{out of plane}}(\text{C}-\text{H})$	2881	2881	$\nu(\text{C}-\text{H})$
954	954	$\nu(\text{C}-\text{H})$ in rings ring skeleton	-	2924	$\nu(\text{CH}_2)$
976	-	stretching vibrations sensitive to anomeric structure of glucose	3291	3291	$\nu(\text{OH})$, water
997	997	$\nu(\text{C}-\text{O}-\text{C})$			
1034	1032	$\delta(\text{C}-\text{H})$, ($\text{C}-\text{C}$), ($\text{C}-\text{OH}$)			
1063	1061	$\nu(\text{C}-\text{O}-\text{C})$ in rings			
1092	1092	$\nu_{\text{s}}(\text{C}-\text{O}-\text{C})$ in rings			
1116	1116	$\nu_{\text{as}}(\text{C}-\text{O}-\text{C})$, ether			
1146	1146	$\nu(\text{C}-\text{N})$, $\nu(\text{C}-\text{C})$			
1202	1202	$\nu(\text{C}-\text{CH})$			
1228	1228	$\nu(\text{C}-\text{H})$ in rings			

1253	1253	$\delta_{\text{in plane}}(\text{C-H}), \text{CH}_2\text{OH}$
1315	1315	$\delta_{\text{in plane}}(\text{C-H})$
1362	1369	$\nu(\text{C-N}), \nu(\text{C-H}),$ $\nu(\text{C-OH})$
1410	-	$\delta_{\text{as}}(\text{CH}_3)$
1422	-	$\nu(\text{C-C})$
1461	1461	$\delta_{\text{as}}(\text{C-H}), \tau_{\text{in plane}}(\text{CH}_2)$
-	1502	$\nu(\text{C-C})$
-	1620	$\nu(\text{C=O}), \text{amide I}$

*) Vibrations assignment: stretching vibrational mode (ν), deformational (δ); bending (τ), and symmetrical (s) and antisymmetrical (as) modes.