



**Figure S1.** Macroscopic images of as-spun and crosslinked zein nanofibers exposed to acetic acid for 24 h.

**Table S1.** Average fiber diameters and standard deviation of non-crosslinked and GTA crosslinked zein nanofibers.

Samples	Average fiber diameters (nm)	standard deviation
GTA_0h	208.22	46.93
GTA_3h	225.52	47.25
GTA_6h	224.32	52.93
GTA_9h	226.96	68.00
GTA_12h	267.69	90.97

**Table S2.** Functional groups and structural changes in the as-spun and crosslinked zein nanofibers [41].

Characteristic peaks	Functional groups	Samples				
		GTA_0h	GTA_3h	GTA_6h	GTA_9h	GTA_12h
1	N-H and O-H stretching vibration (Amide A)	3295 cm <sup>-1</sup>	3292 cm <sup>-1</sup>	3292 cm <sup>-1</sup>	3276 cm <sup>-1</sup>	3275 cm <sup>-1</sup>
3	C=O stretching vibration (Amide I)	1653 cm <sup>-1</sup>	1653 cm <sup>-1</sup>	1652 cm <sup>-1</sup>	1648 cm <sup>-1</sup>	1648 cm <sup>-1</sup>
4	N-H bending vibration (Amide II)	1542 cm <sup>-1</sup>	1542 cm <sup>-1</sup>	1542 cm <sup>-1</sup>	1542 cm <sup>-1</sup>	1542 cm <sup>-1</sup>
5	symmetric stretching vibration of the C=O groups	-	1077 cm <sup>-1</sup>	1066 cm <sup>-1</sup>	1066 cm <sup>-1</sup>	1066 cm <sup>-1</sup>