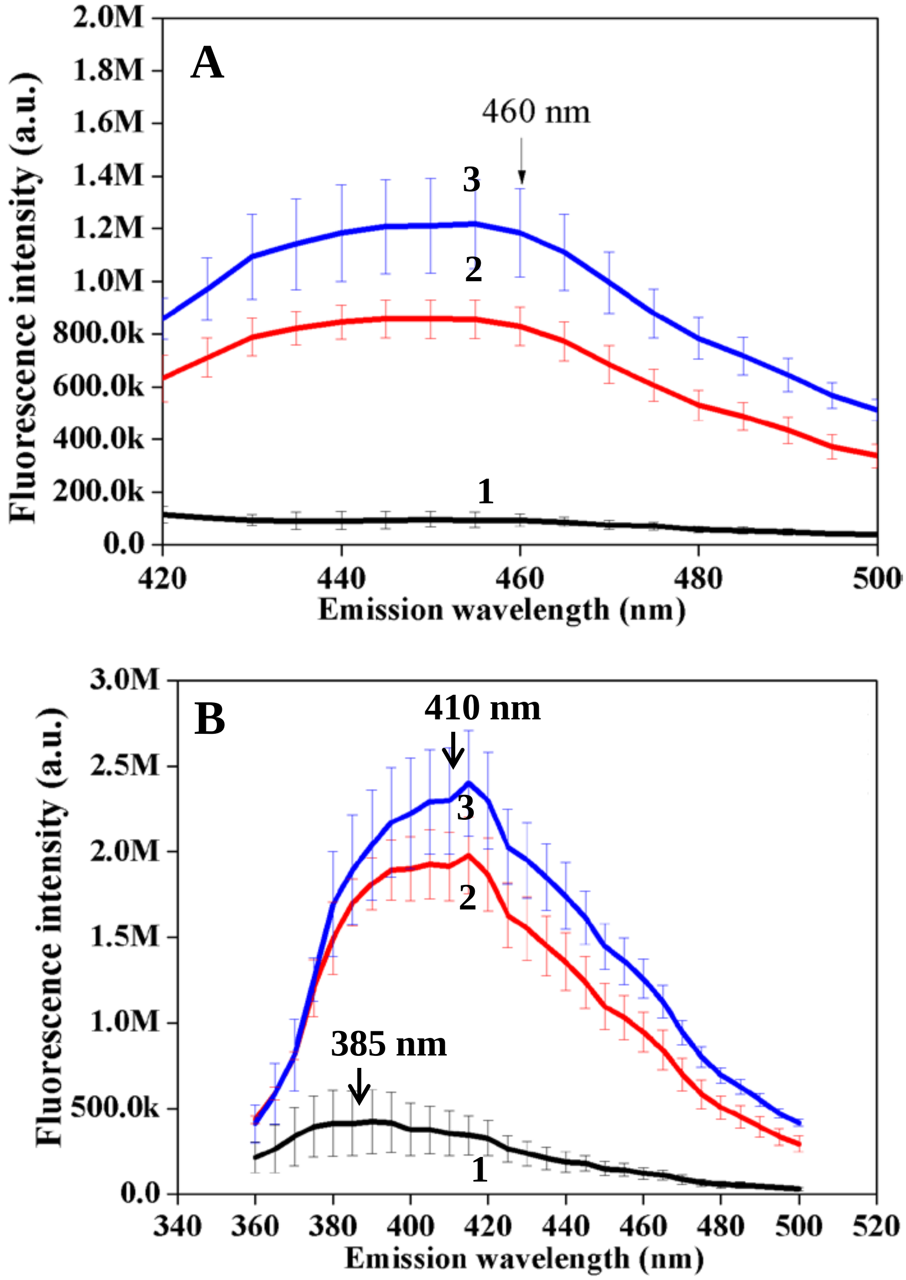
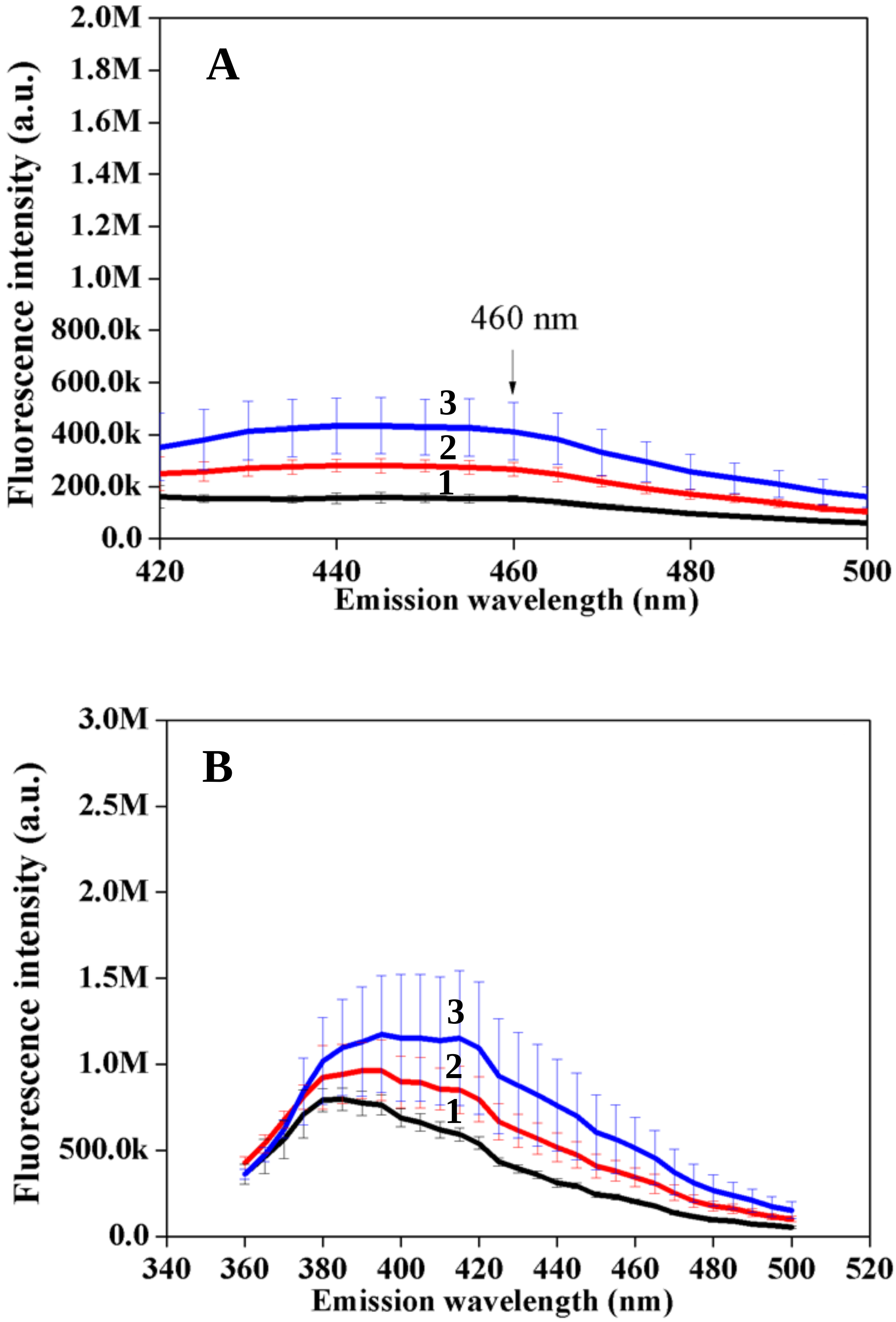
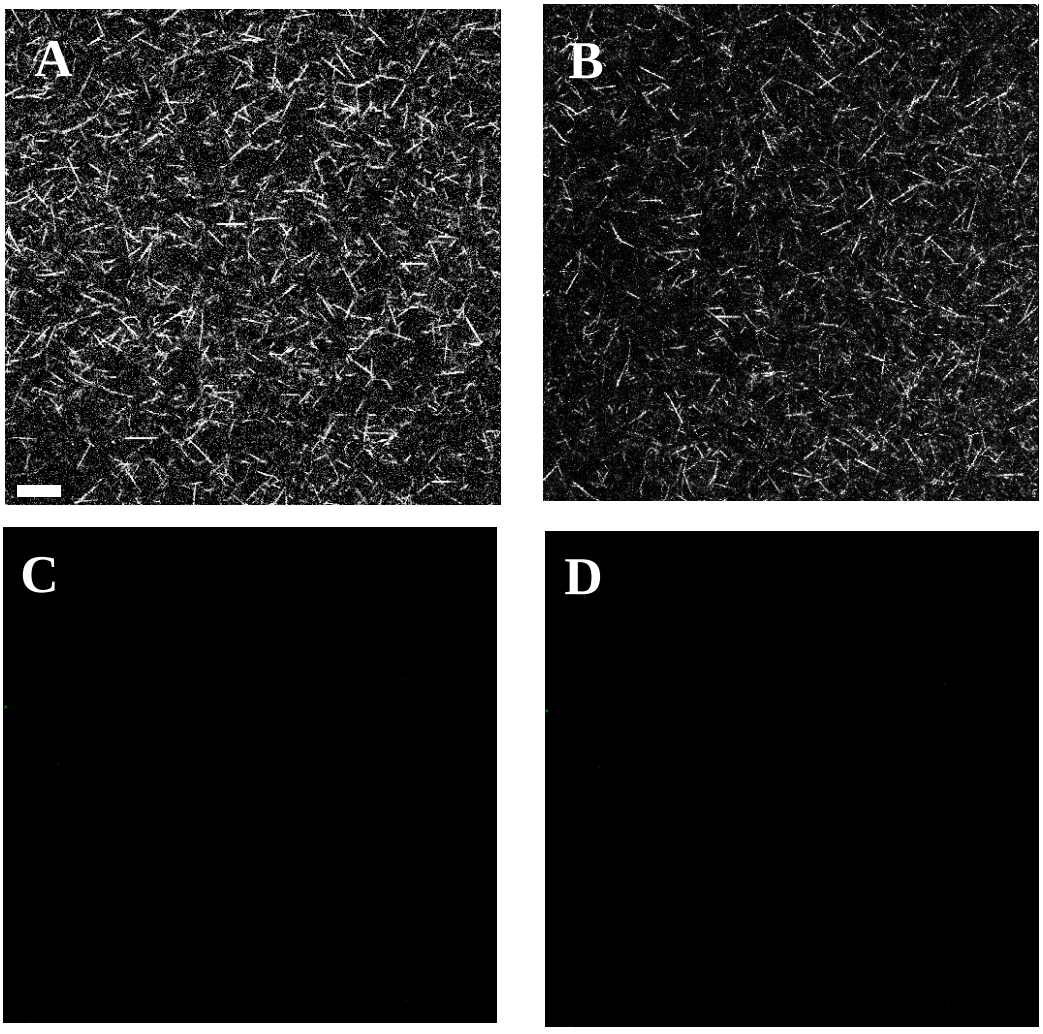


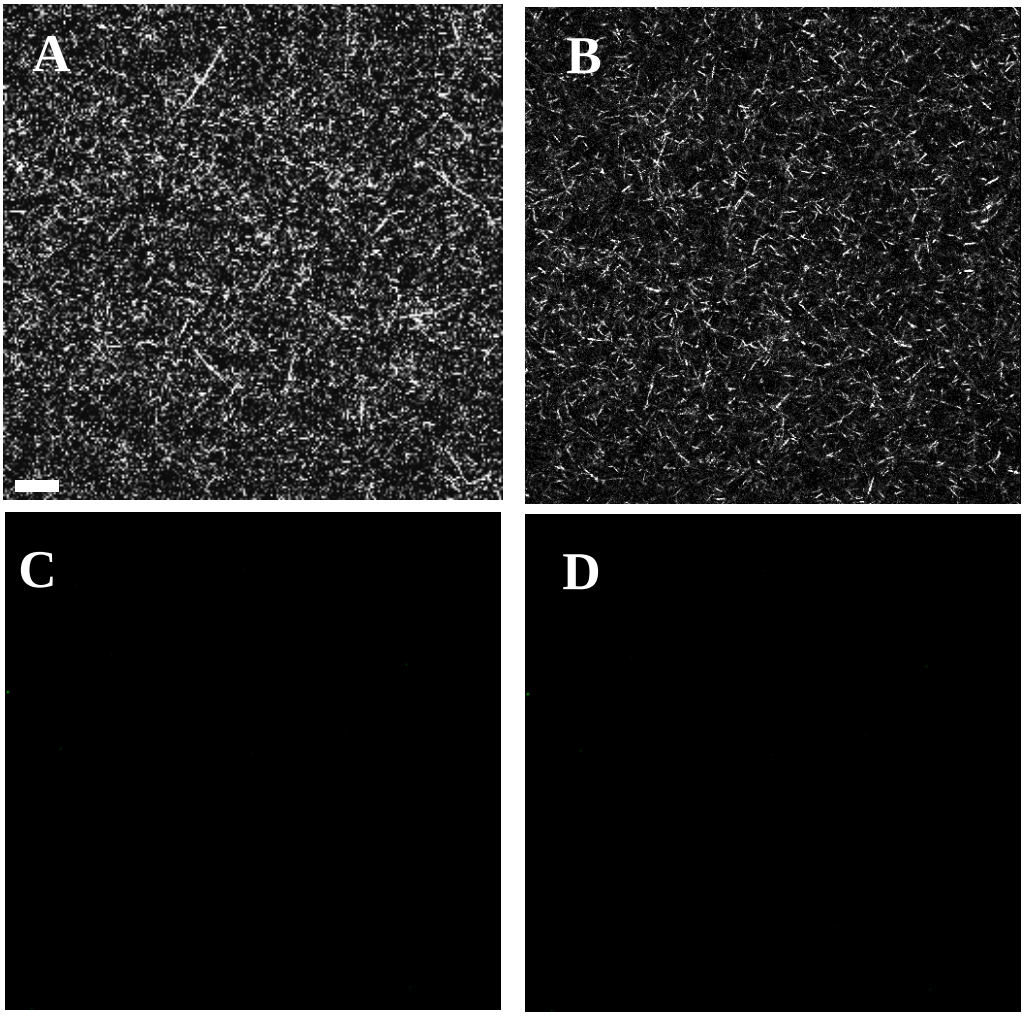
Figure S1. The effect of glycation with 0.1 M ribose on the production of advanced glycation endproducts. (A) Fluorescence emission spectra (λ_{ex} = 360 nm) of the samples that were incubated with ribose for 0 hr (1), 3 weeks (2), 6 weeks(3). (B) Fluorescence emission spectra (λ_{ex} = 330 nm) of the samples that were incubated with ribose for 0 hr (1), 3 weeks (2), 6 weeks (3).



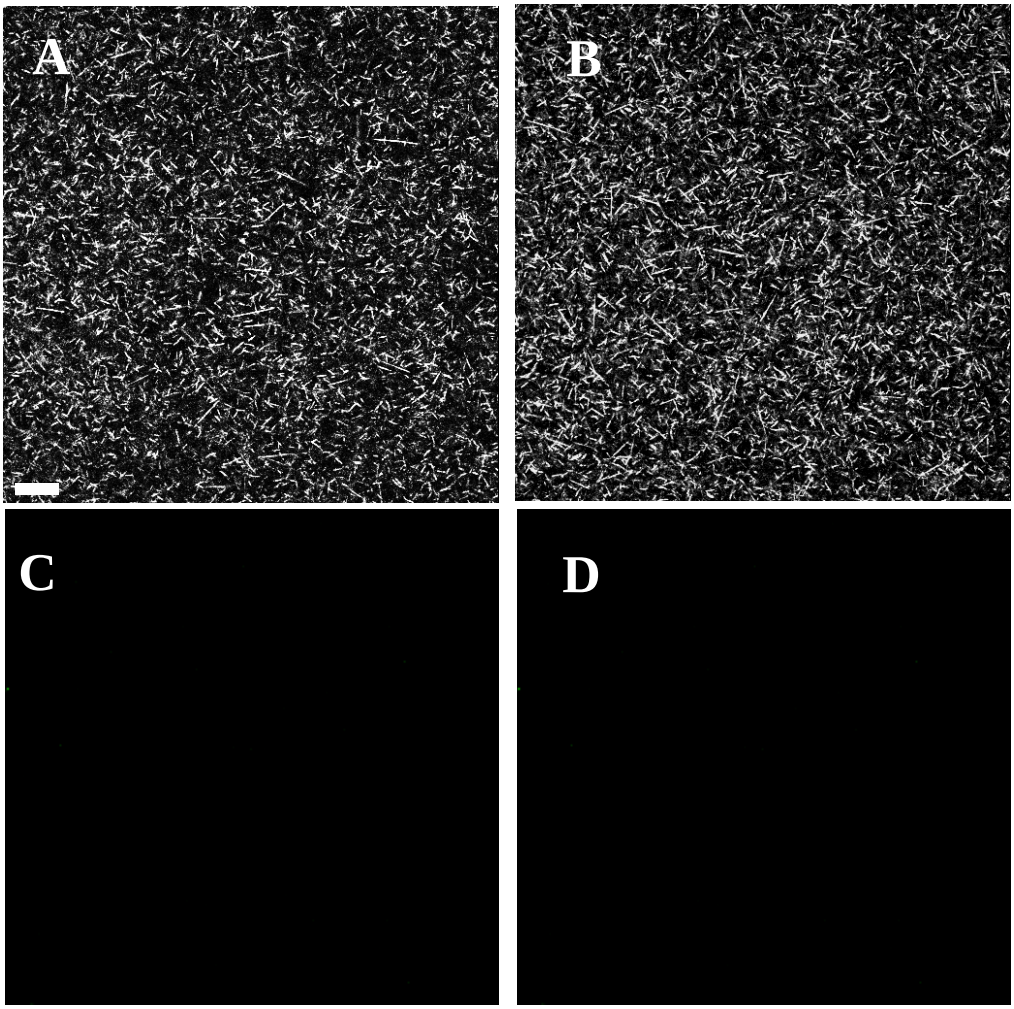
{dzLJLJ2ǊǘǺyƎ LyŦ2ǊƳ l·ǘǺ2yʃ **Figure S2.** The effect of glycation with 0.1 M glucose on the production of advanced glycation endproducts. (A) Fluorescence emission spectra (λ_{ex} = 360 nm) of the samples that were incubated with glucose for 0 hr (1), 3 weeks (2), 6 weeks(3). (B) Fluorescence emission spectra (λ_{ex} = 330 nm) of the samples that were incubated with glucose for 0 hr (1), 3 weeks (2), 6 weeks (3).



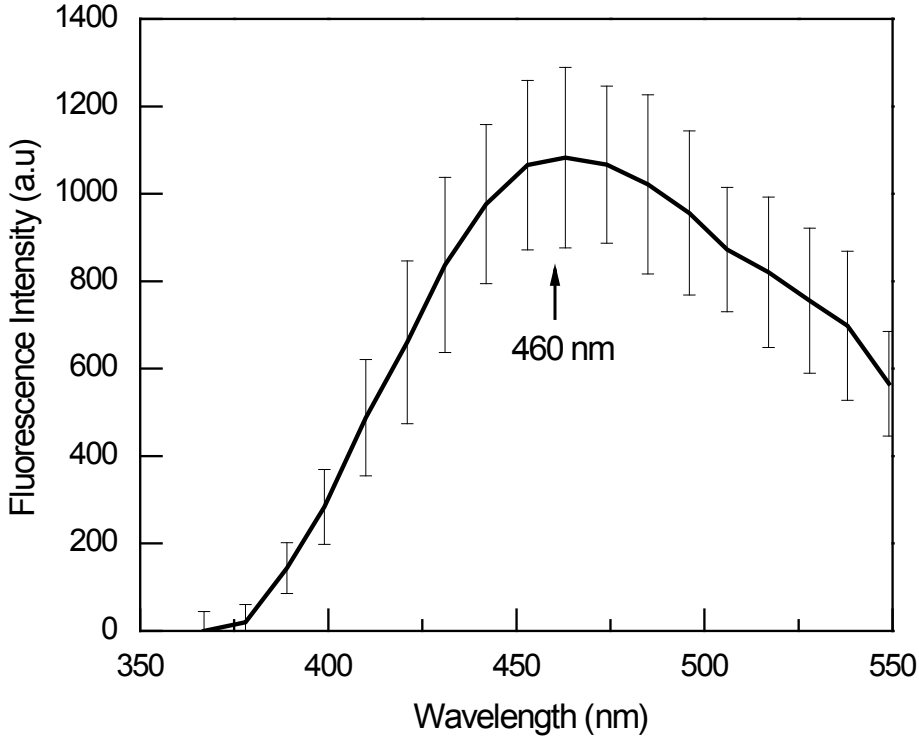
Supporting Information Figure S3. Typical second harmonic generation (SHG) and two photon fluorescence (TPF) images of the 2 g/l collagen hydrogels incubated with 0.1M glycerol. (A) SHG and (C) TPF; The 2 g/l collagen gels that have not been exposed to glycerol are shown for comparison (B) SHG and (D) TPF ; These images were taken in X-Y plane. The scale is 20 µm.



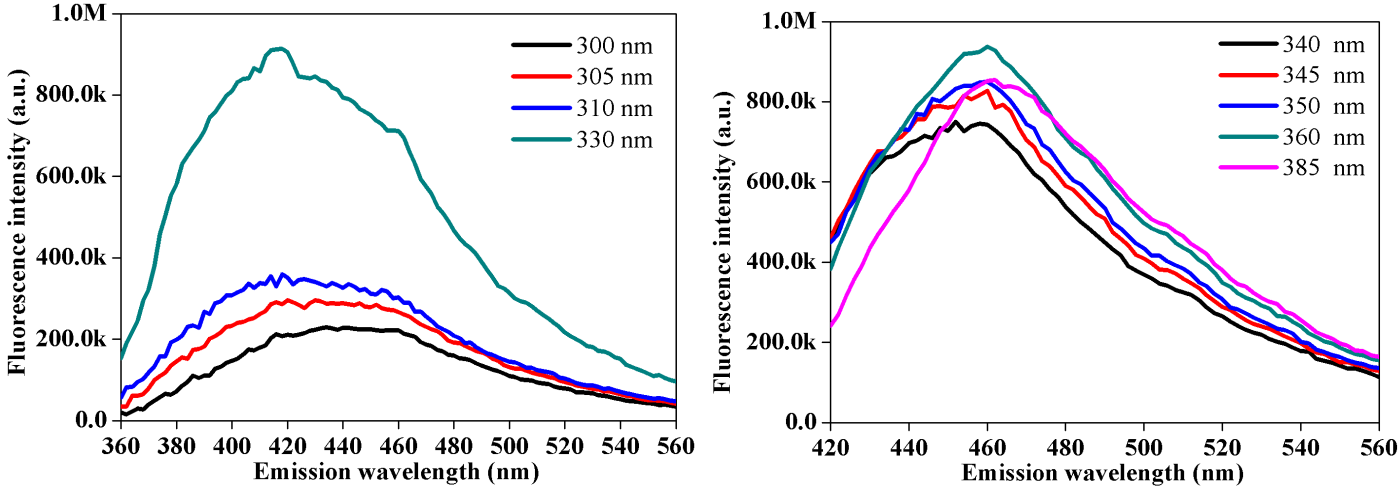
Supporting Information Figure S4. Typical second harmonic generation (SHG) and two photon fluorescence (TPF) images of the 3 g/l collagen hydrogels incubated with 0.1M xylitol. (A) SHG and (C) TPF; 3 g/l collagen gels that have not been exposed to xylitol are shown for comparison (B) SHG and (D) TPF ; These images were taken in X-Y plane. The scale is 20 µm.



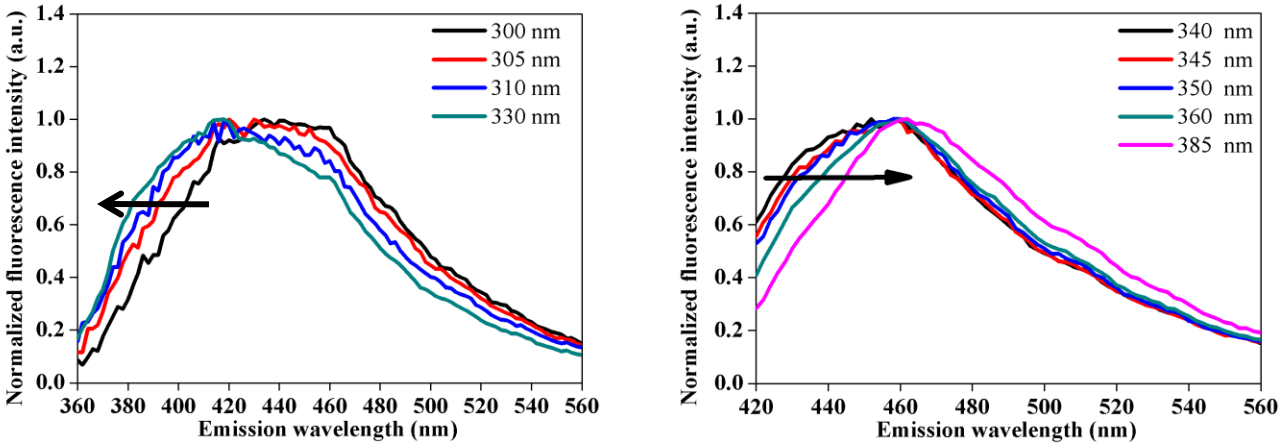
Supporting Info Figure S5. Typical second harmonic generation (SHG) and two photon fluorescence (TPF) images of the 4.68 g/l collagen hydrogels incubated with 0.1M sorbitol. (A) SHG and (C) TPF; The 4.68 g/l collagen gels that have not been exposed to sorbitol are shown for comparison (B) SHG and (D) TPF ; These images were taken in X-Y plane. The scale is 20 µm.



Supporting Information Figure S6. Two photon fluorescence emission spectra (λ_{ex} = 720 nm) of the collagen hydrogel that was incubated with 0.1M ribose for 6 weeks.



Supporting Information Figure S7. The effect of changing the excitation wavelength on fluorescence of advanced glycation endproducts formed with 0.1 M glyceraldehyde (24-hr product).



Supporting Information Figure S8. The effect of changing the excitation wavelength on fluorescence of advanced glycation endproducts formed with 0.1 M glyceraldehydes (24-hr product). The data is the same as in Supporting Information Figure 7, however, normalized.