Supporting Information

Effect of Incorporating Clustered Silica Nanoparticles on the Performance and Biocompatibility of Catechol-Containing PEG-Based Bioadhesive

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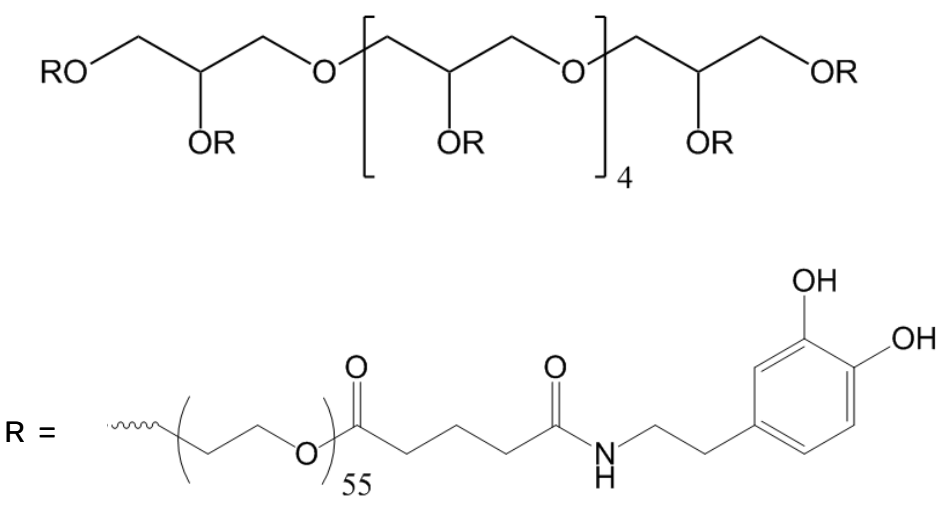

Figur S1. Chemical structure of PEG-DA with a hexaglycerol core. The molecular weight of PEG is 20kDa.

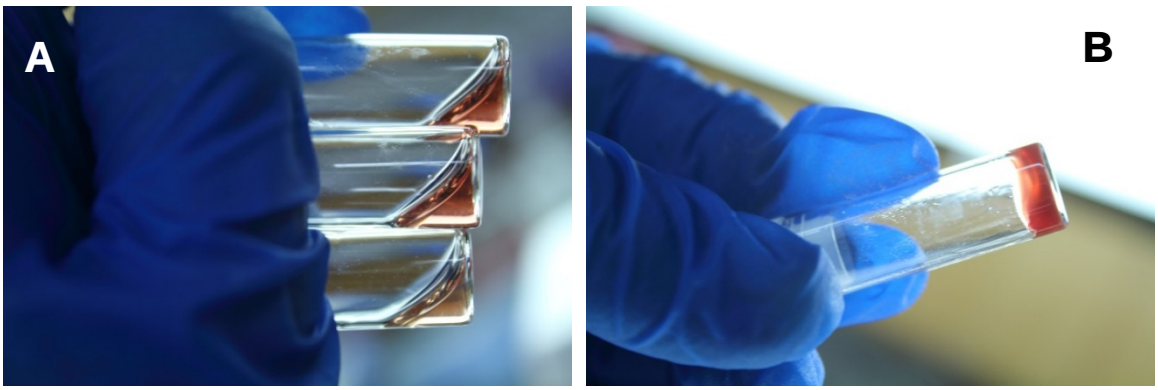

Figure S2. Photograph of the adhesive before (**A**) and after (**B**) curing.

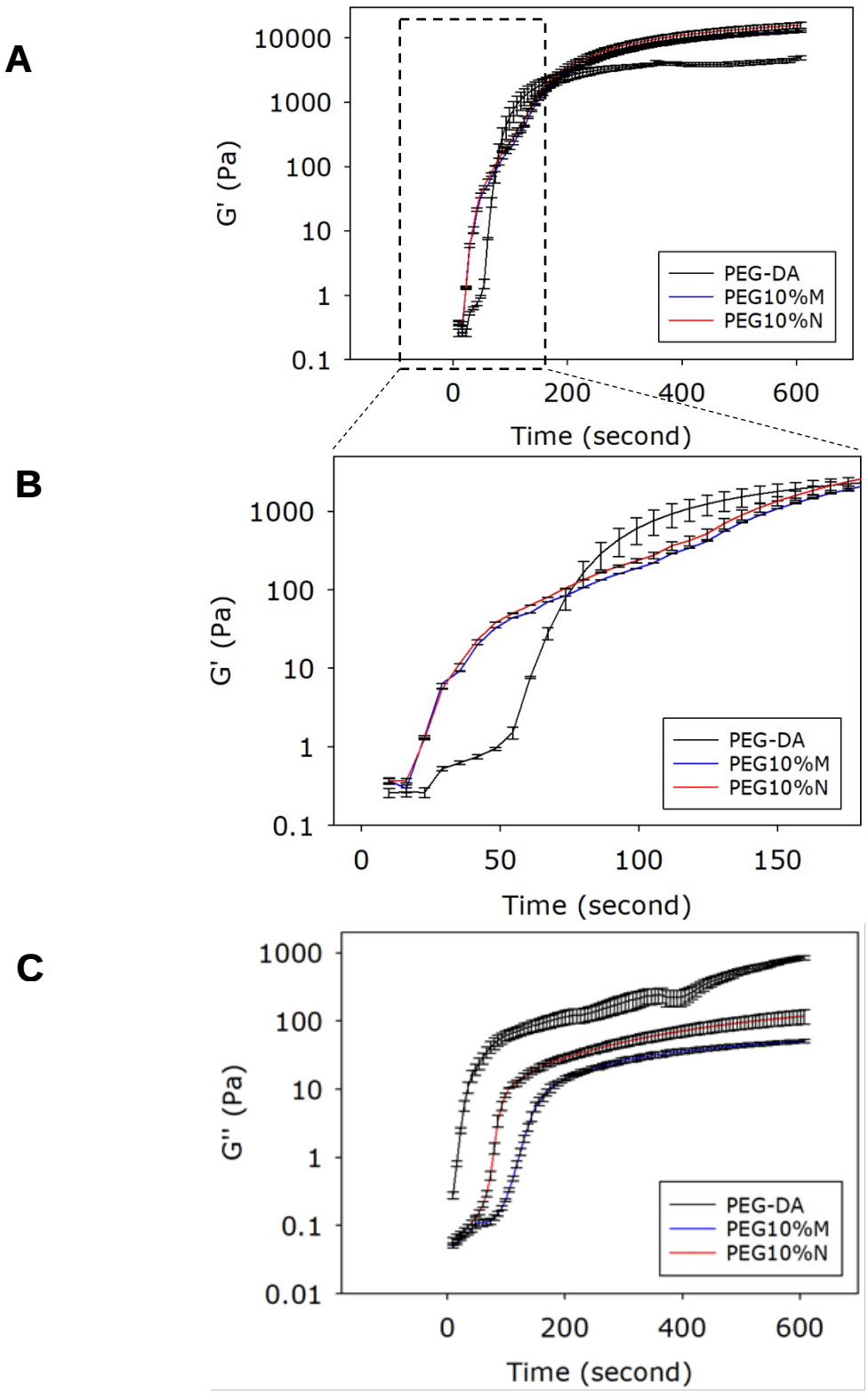

Figure. S3 Storage (G') (A and B) and loss (G") (C) moduli of the PEG-DA composite adhesives during the intitial curing process at a frequency and amplitude of 0.1 Hz and 10% strain, respectively. G' is higher than G" for both PEG10%M and PEG10%N starting at 10 second indicate faster gelation compared to PEG-DA (starting at 50 second) (B)

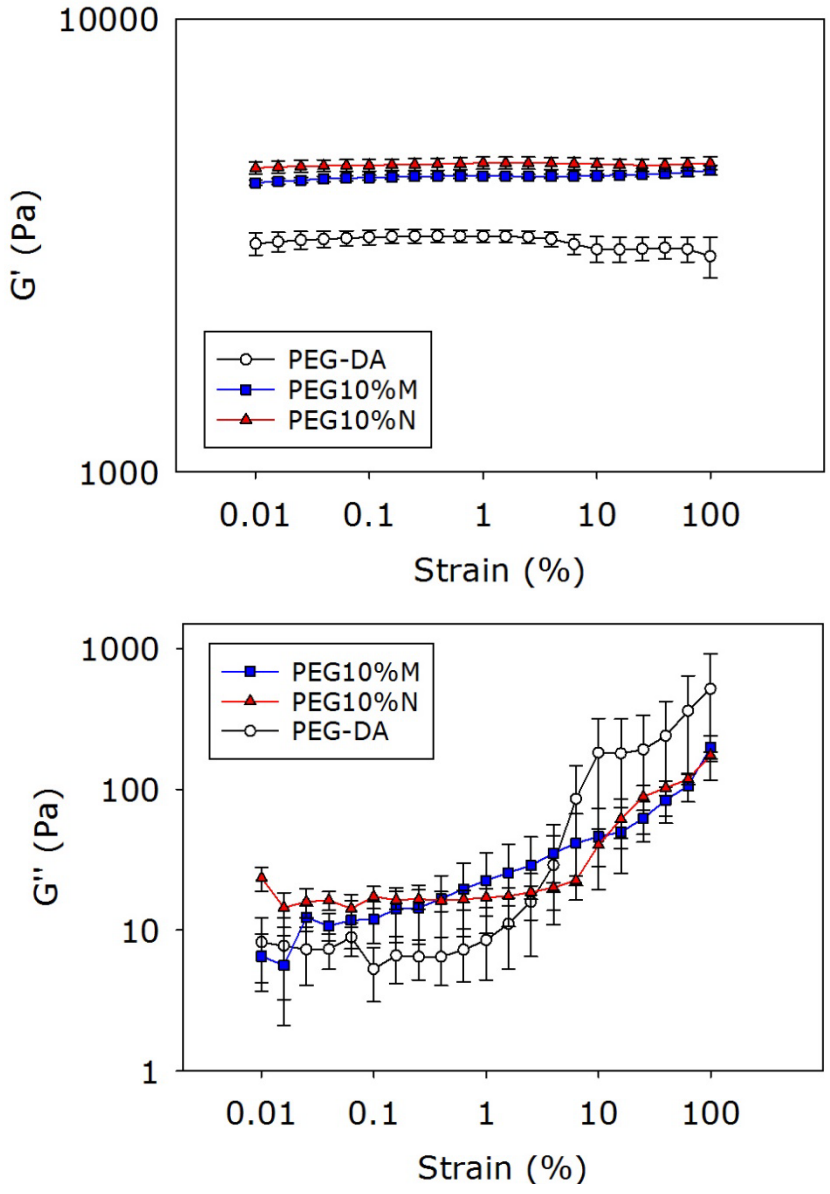

Figure S4. Storage (G') and loss (G") moduli of the PEG-DA composite adhesives after 24-hour incubation in PBS test at a strain of 0.01-100 % and a frequency of 1 Hz.

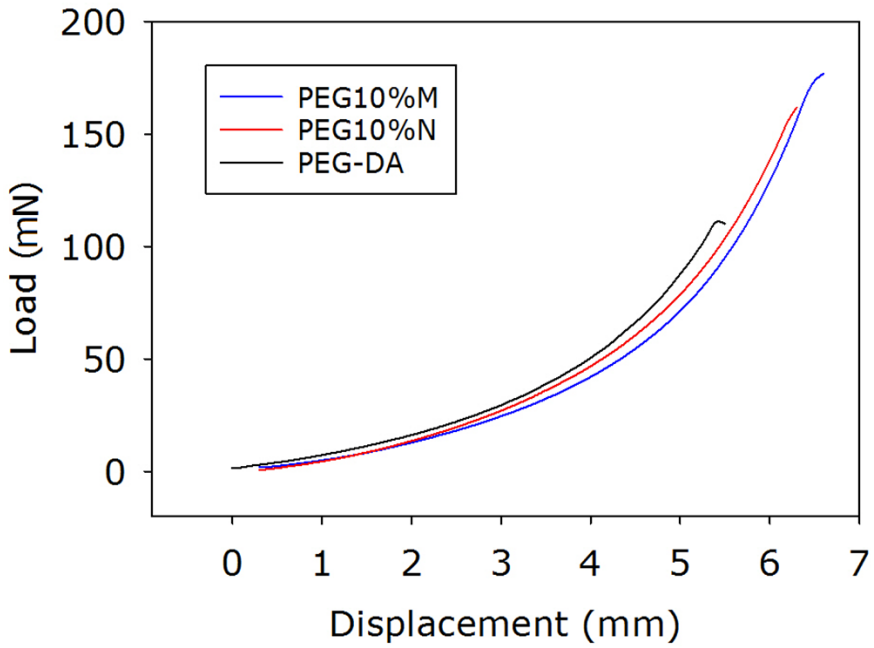

Figure S5. Representative load vs. displacement curves for PEG10%M, PEG10%N, and PEG-DA during lap shear adhesion testing.

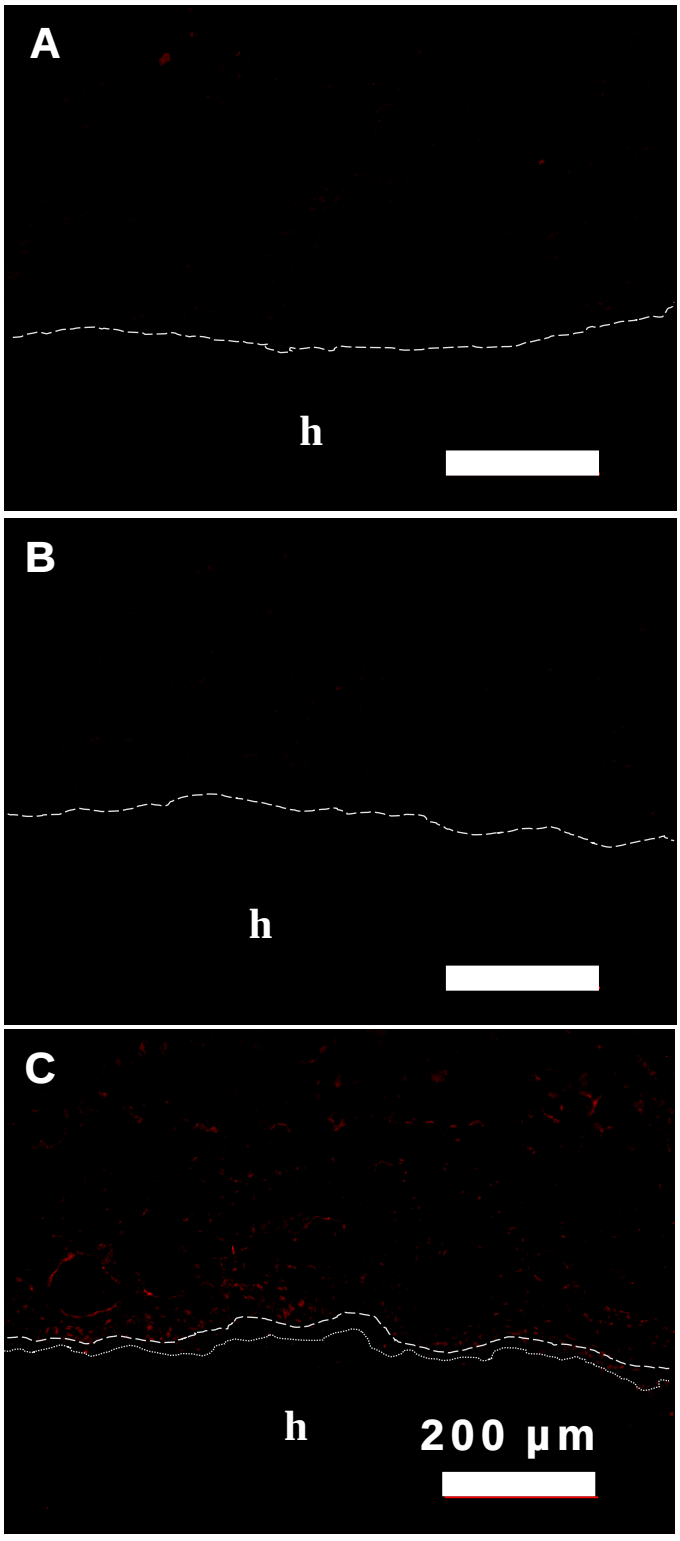

Figure S6. CD163 M2 macrophage staining (red color) of the surrounding tissues implanted with PEG-DA (**A**), PEG10%N (**B**), and PEG10%M (**C**). Dash lines indicate the tissue-adhesive interface. The dotted line in (**C**) indicates the depth of cellular infiltration. The letter "**h**" indicates the location of the adhesive. Scale bar is 200 µm.