Supplementary Information

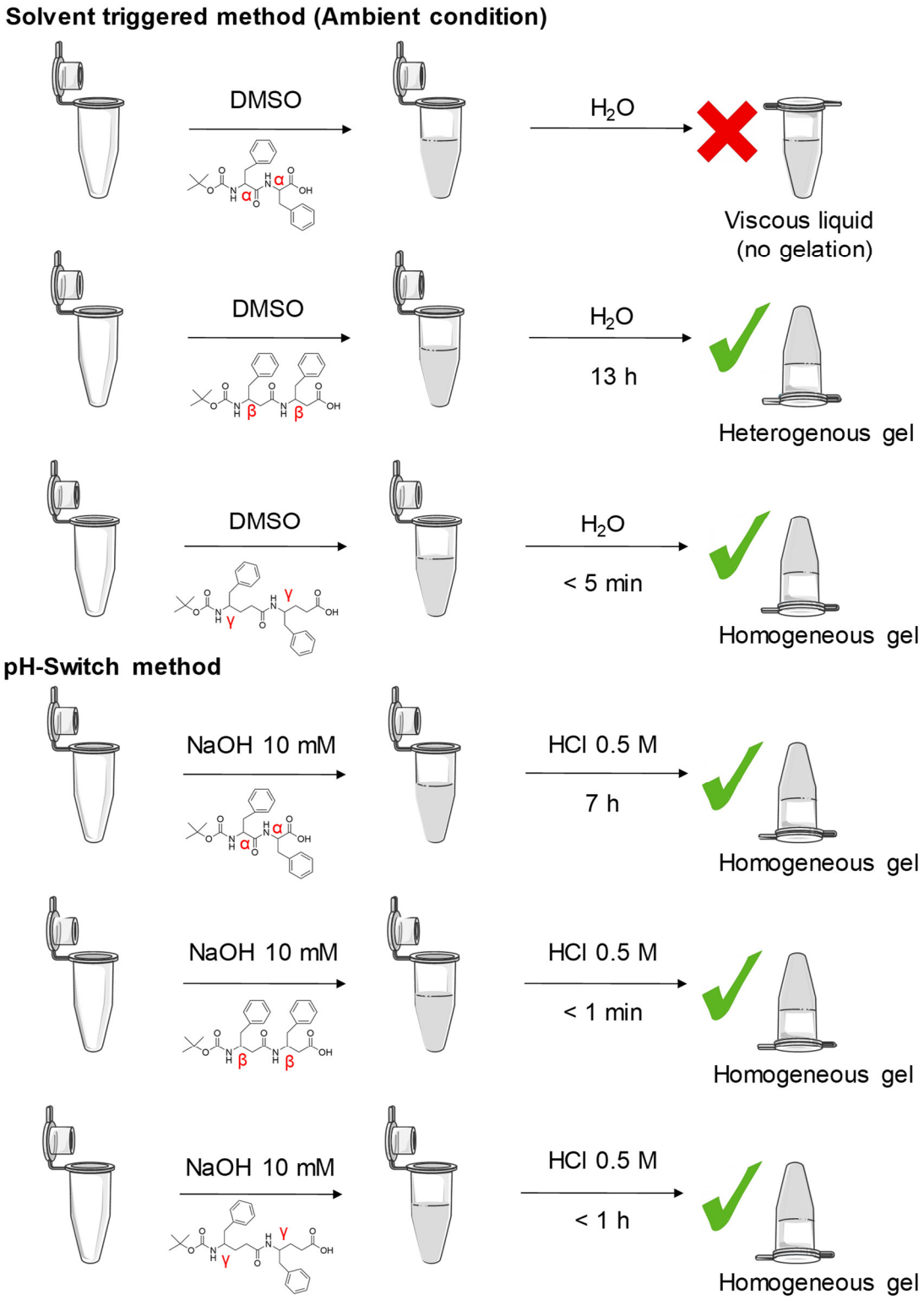

Figure S1. Schematic representation of the steps followed to make the different gels.

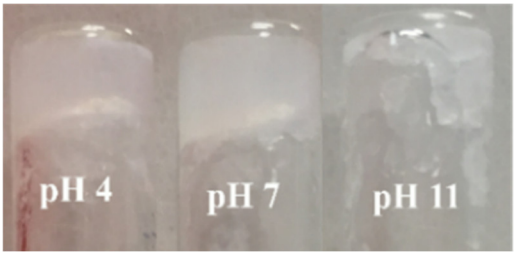

Figure S2. Assessment of the formation of hydrogels using the vial inversion test for Boc-γ^4(*R*)Phe-γ^4(*R*)Phe-OH (4.9 mM, 2% DMSO/H_2O) at different pH.

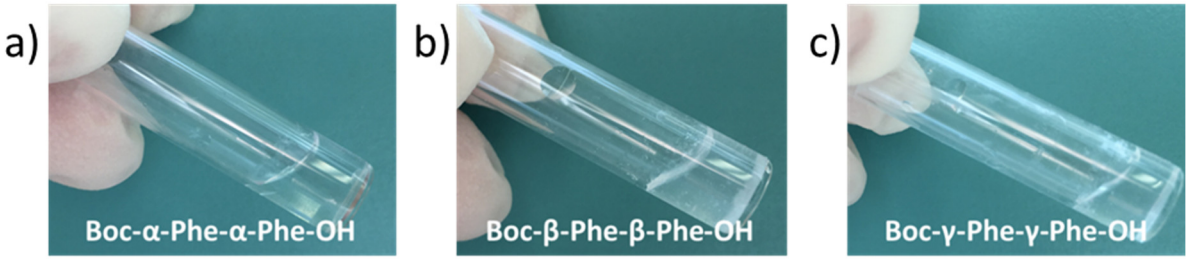

Figure S3. Assessment of the formation of hydrogels in 2% HFIP/H_2O using 4.9 mM of a) Boc-*α*(*S*)Phe-*α*(*S*)Phe-OH, b) Boc-β^3(*R*)Phe-β^3(*R*)Phe-OH, and c) Boc-γ^4(*R*)Phe-γ^4(*R*)Phe-OH.

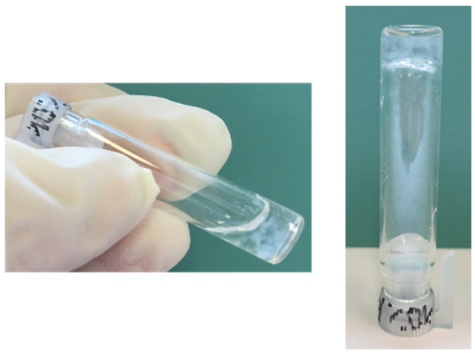

Figure S4. Hydrogel test formation of 4.9 mM Boc-β^3(*R*)Phe-β^3(*R*)Phe-OH in 10% DMSO/H_2O at t0 and after 5 min.

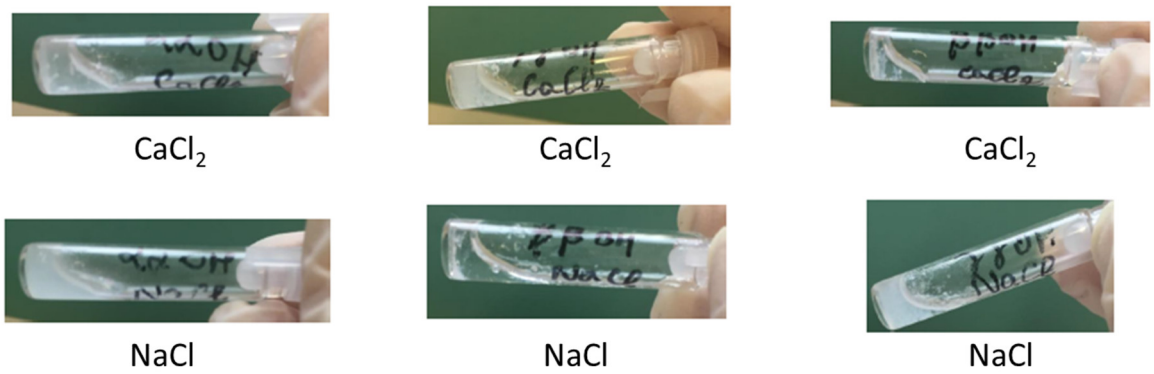

Figure S5. Hydrogel test formation of 4.9 mM diphenylalanine analogues in 2% DMSO/H_2O in the presence of 25 mM $CaCl_2$ or NaCl (from left to right: Boc-*α*(*S*)Phe-*α*(*S*)Phe-OH, Boc-β^3(*R*)Phe-β^3(*R*)Phe-OH, and Boc-γ^4(*R*)Phe-γ^4(*R*)Phe-OH).

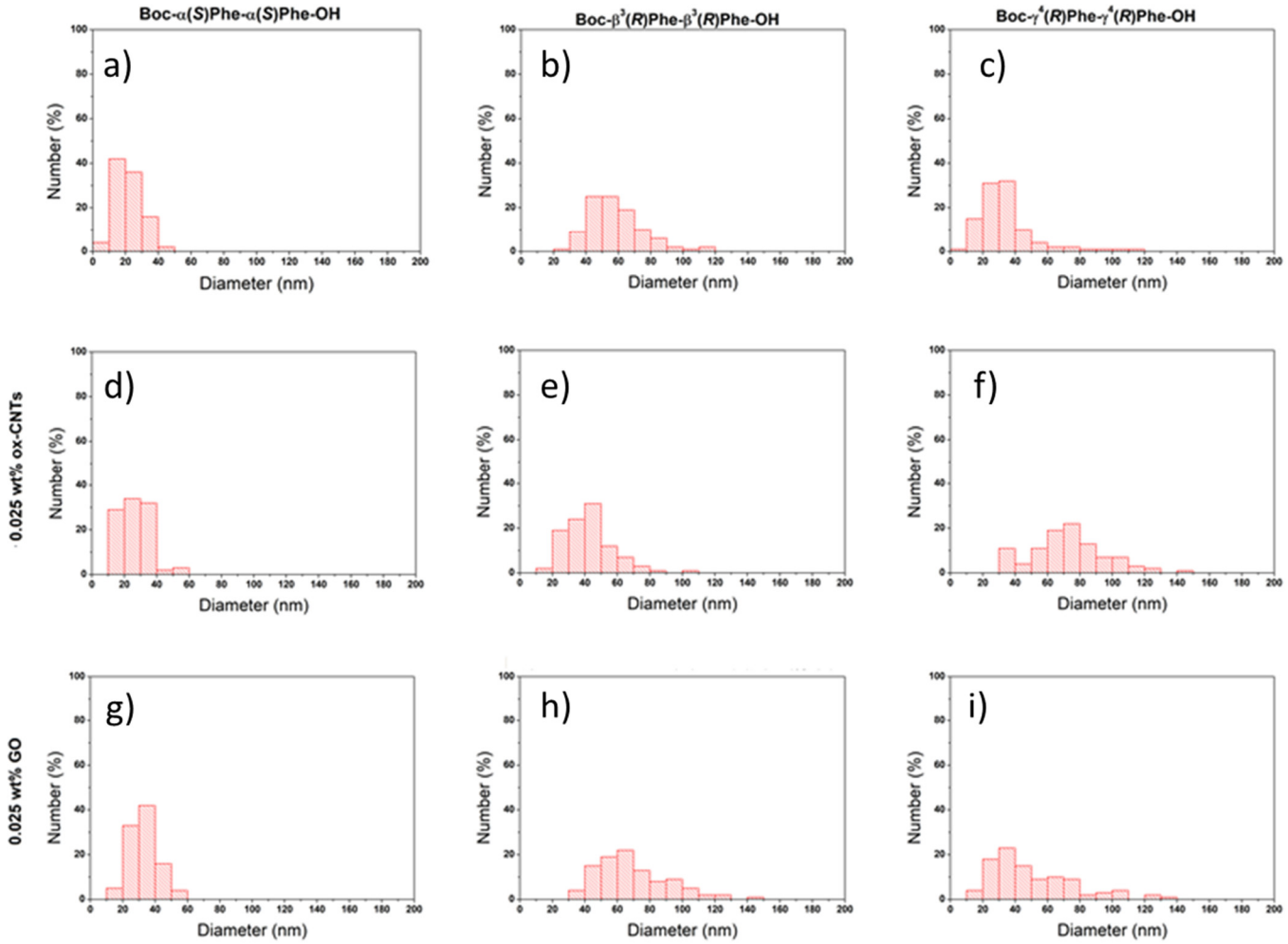

Figure S6. Diameter distribution of the fibrils of the native and hybrid hydrogels (n=100).