Electronic Supplementary Information

Poly(ethylene glycol) cryogels as potential cell scaffolds: Effect of polymerization conditions on cryogel microstructure and properties

Yongsung Hwang^{a, b}, Chao Zhang^b, and Shyni Varghese^{b, *}

^aMaterials Science and Engineering Program, University of California at San Diego,

9500 Gilman Drive, La Jolla, CA92093-0418 (USA),

^bDepartment of Bioengineering, University of California at San Diego, 9500 Gilman

Drive, La Jolla, CA92093-0412 (USA)

^{*}To whom correspondence should be addressed. E-mail: svarghese@ucsd.edu.



Fig. S1 Thermograms of cryogelation at different temperatures with reference to DI

water. (a) $I_{0.05}T_{\text{--}20}C_{S}$ (b) $I_{0.05}T_{\text{--}20}C_{F}$ (c) $I_{0.05}T_{\text{--}14}C_{F}.$



Fig. S2 Photograph (a) and SEM images (b-d) of $I_{0.1}T_{-20}C_F$



Fig. S3 SEM images of bottom and side view of $I_{0.05}T_{-20}C_F$



Fig. S4 SEM images of $I_{0.05}T_{-20}C_F$ and $I_{0.1}T_{-20}C_F$; (a) internal fracture surface of $I_{0.05}T_{-20}C_F$, (b) internal fracture surface of cryogel-like structure of $I_{0.1}T_{-20}C_F$, and (c) internal

fracture surface of hydrogel-like structure of $I_{0.1}T_{\text{-}20}C_{\text{F}}.$



Fig. S5 Stress-strain curves of conventional hydrogels, heterogeneous $(I_{0.1}T_{-20}C_S)$ and homogeneous cryogels $(I_{0.05}T_{-20}C_S \text{ and } I_{0.05}T_{-14}C_F)$.