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Electronic Supplementary Information (ESI)

Thermoresponsive double network cryogels from dendronized

copolymers showing tunable encapsulation and release of proteins

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Fig. S1 ¹H NMR spectrum of PG_5S_1 in DMSO- d_6 at 80 °C. Solvent signal is marked with asterisk.



Fig. S2 ¹H NMR spectrum of $PG_{20}S_4T_1$ in DMSO- d_6 at 80 °C. Solvent signal is marked with asterisk.



Fig. S3 ¹H NMR spectrum of $PG_{10}S_2T_1$ in DMSO- d_6 at 80 °C. Solvent signal is marked with asterisk.



Fig. S4 ¹H NMR spectrum of $PG_{20}S_4D_1$ in DMSO- d_6 at 80 °C. Solvent signal is marked with asterisk.

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Fig. S5 ¹H NMR spectrum of $PG_{10}S_2D_1$ in DMSO-d₆ at 80 °C. Solvent signal is marked with asterisk.



Fig. S6 Turbidity curves of all copolymers



Fig. S7 SEM photographs of $(PG_{20}S_4T_1)_4/PVA_1$ and $(PG_{20}S_4T_2)_4/PVA_1$ at 25 °C (a, b) and 40 °C (a', b'), respectively. The scale bar is 60 μ m.



Fig. S8 Enzyme activity of LYS from blank and released samples.

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Table S1 Release efficiency of LYS					
Release efficiency	(PG ₂₀ S ₄) ₄ /PVA ₁	(PG ₂₀ S ₄ T ₁) ₄ /PVA ₁	(PG ₂₀ S ₄ T ₂) ₄ /PVA ₁		
First cycle	86.7%	97.4%	0		
Second cycle	39.2%	86.1%	0		

Table S2 Release efficiency of BSA

Release efficiency	(PG ₂₀ S ₄) ₄ /PVA ₁	(PG ₂₀ S ₄ D ₁) ₄ /PVA ₁	(PG ₂₀ S ₄ D ₂) ₄ /PVA ₁
First cycle	50.0%	72.6%	76.7%