Supporting Information

Random Sequence–Guided Crosslinking for On-Demand Injectable HA-DNA Hydrogels Supporting Neural Progenitor Cells

Taehyun Kim[a,b†], Eunseo Han[a†], Siyeon Park[a], and Jieung Baek[a,b,*]

[a]Department of Mechanical and Biomedical Engineering, Ewha Womans University, Seoul, 03760, Republic of Korea

[b]Graduate Program in System Health Science and Engineering, Ewha Womans University, Seoul, 03760, Republic of Korea

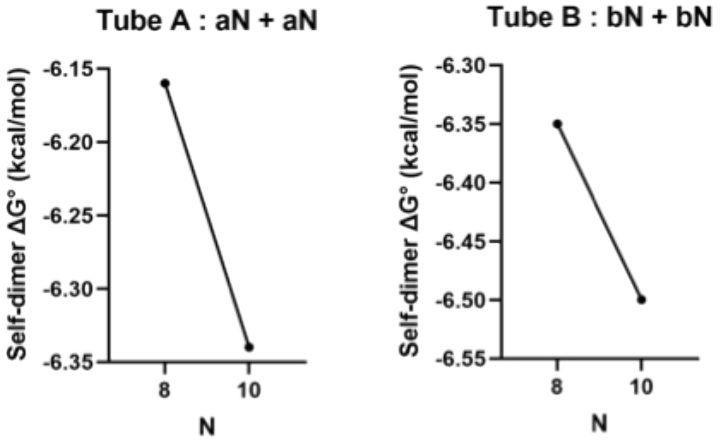

Figure S1. Standard-state free energy (ΔG°) of intermolecular binding for each crosslinker strand (8a, 8b, 10a, and 10b).

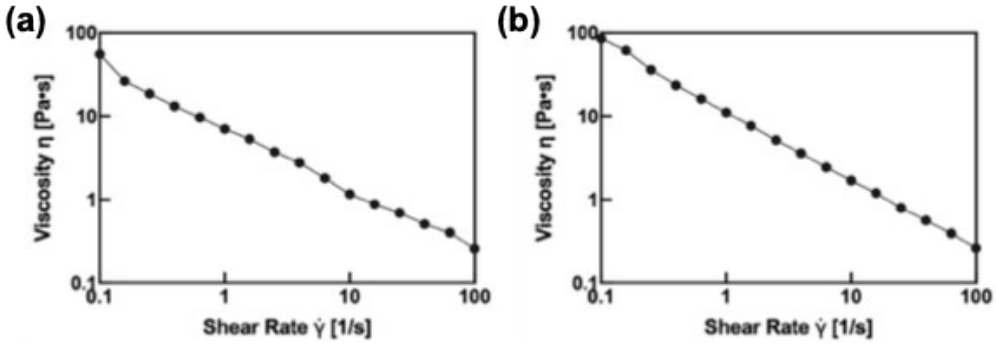

Figure S2. Shear-thinning behavior of (a) Tube A and (b) Tube B (N = 8).

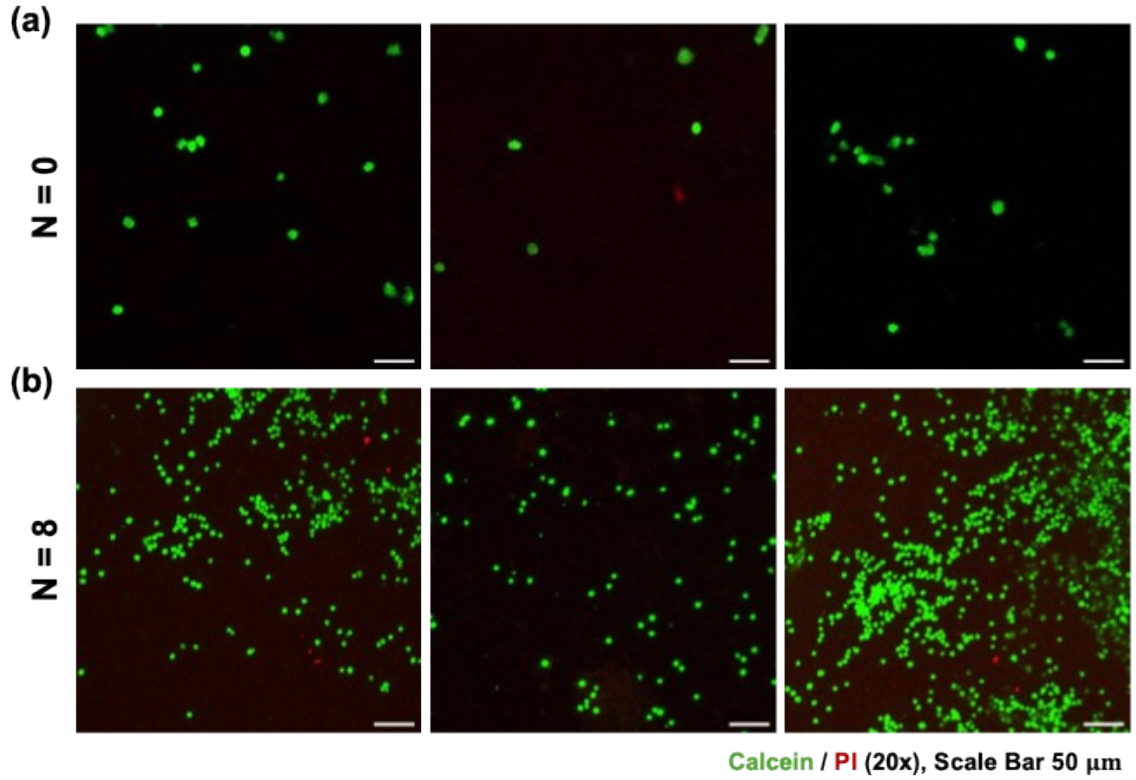

Figure S3. Representative Live/Dead images of ReN cells encapsulated in HA-DNA hydrogels crosslinked with (a) N = 0 and (b) N = 8. Three randomly selected areas are shown for each condition. Calcein AM (green) and PI (red). Scale bar, 50 μm.

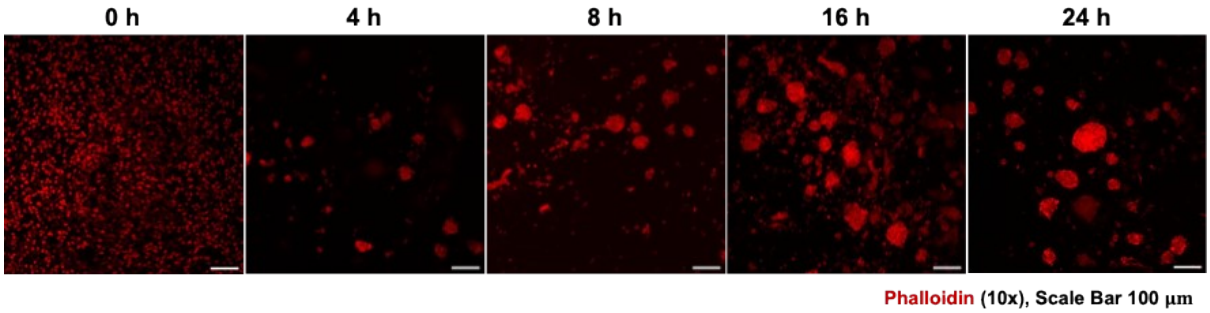

Figure S4. Time-course images showing spheroid formation of ReN cells encapsulated in the HA-DNA hydrogel (N = 8) from 0 h to 24 h. Phalloidin (red). Scale bar, 100 μm.

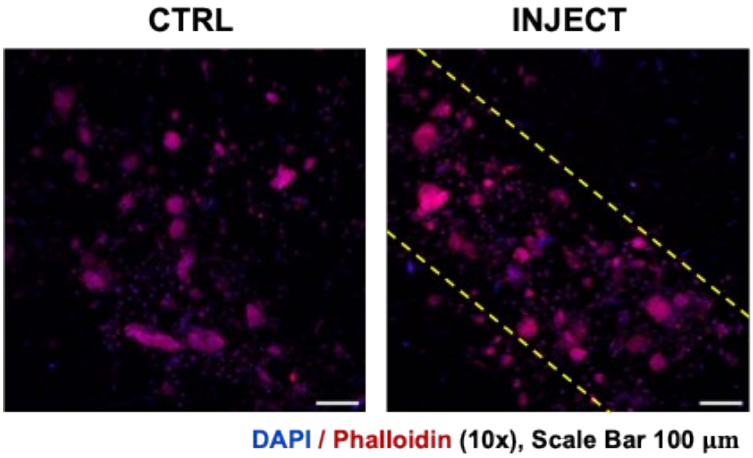

Figure S5. Early spheroid formation under CTRL and INJECT conditions at day 1 (N = 8). DAPI (blue) and Phalloidin (red). Scale bar, 100 μm.

#	N =0	Length [nt]
0a	TTAGTCAGTGTCCCGATTAGAGCCTTATGAGCCGTC	36
0b	GGGACACTGACTAAGATTAGAGCCTTATGAGCCGTC	36

#	N=4	Length [nt]
4a	TTAGTNANTNTNCCGATTAGAGCCTTATGAGCCGTC	36
4b	GGNANANTNACTAAGATTAGAGCCTTATGAGCCGTC	36

#	N=8	Length [nt]
8a	TTANNNNNNNNCCCGATTAGAGCCTTATGAGCCGTC	36
8b	GGGNNNNNNNNTAAGATTAGAGCCTTATGAGCCGTC	36

#	N=10	Length [nt]
10a	TTNNNNNNNNNCCGATTAGAGCCTTATGAGCCGTC	36
10b	GGNNNNNNNNNNAAGATTAGAGCCTTATGAGCCGTC	36

Table S1. Full nucleotide sequences of anchor and crosslinker strands used in this study. Red: adaptor domain complementary to anchor strand; black: overlap domain; blue: ambiguous N base (A, T, C, or G).