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# Electronic Supporting Information

## A temperature and ion dual responsive biphenyl-dipeptide supramolecular hydrogels as extracellular matrix mimic-scaffolds for cell culture application

Shaoquan Bian, Hanxu Cai, Yani Cui, Wanxu Cao, Yingying Teng, Yong Sun*, Jie Liang, Yujiang Fan *, and Xingdong Zhang.

National Engineering Research Center for Biomaterials, Sichuan University, 29 Wangjiang Road, Chengdu 610064, China.

### Supplementary Tables

**Table S1.** Gelation properties of BPAA-FF-OH through ion induction.

| Entry | Compound | Salt | Concentration | Appearance [a] | MGC |
|---|---|---|---|---|---|
| 1 | BPAA-FF-OH | LiCl | 0.15 M | Transparent hydrogel | 10 mM/ 0.50 wt% |
| 2 | BPAA-FF-OH | NaCl | 0.15 M | Transparent hydrogel | 10 mM/ 0.50 wt% |
| 3 | BPAA-FF-OH | KCl | 0.15 M | Transparent hydrogel | 10 mM/ 0.50 wt% |
| 4 | BPAA-FF-OH | RbCl | 0.15 M | Transparent hydrogel | 10 mM/ 0.50 wt% |
| 5 | BPAA-FF-OH | NaAc | 0.15 M | Transparent hydrogel | 10 mM/ 0.50 wt% |
| 6 | BPAA-FF-OH | $NaNO_3$ | 0.15 M | Transparent hydrogel | 10 mM/ 0.50 wt% |
| 7 | BPAA-FF-OH | $Na_2SO_4$ | 0.15 M | Transparent hydrogel | 10 mM/ 0.50 wt% |
| 8 | BPAA-FF-OH | $Na_3PO_4$ | 0.15 M | Transparent hydrogel | 10 mM/ 0.50 wt% |
| 9 | BPAA-FF-OH | $MgCl_2$ | 0.05 M | Precipitation | n/a |
| 10 | BPAA-FF-OH | $CaCl_2$ | 0.05 M | Precipitation | n/a |

[a]: The gelling time is about 30 minutes.

MGC = minimum gelation concentration. n/a = not applicable.

### Supplementary Figures

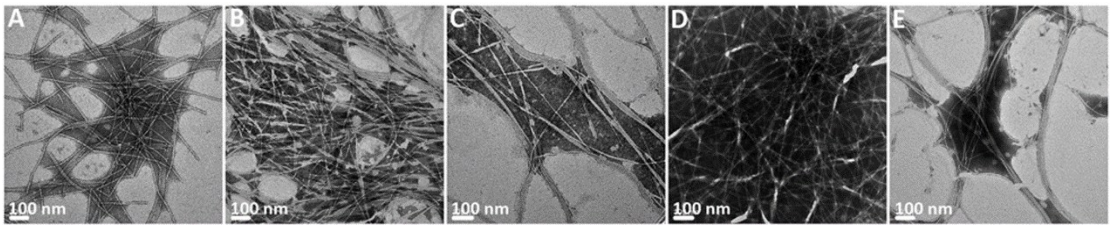


**Figure S1.** TEM images of nanostructures in BPAA-FF-OH hydrogels induced by (A) NaCl, (B) $NaNO_3$, (C) $CH_3COONa$, (D) $Na_2SO_4$, (E) $Na_3PO_4$. (Gel = 0.50 wt%, salt = 0.15 M)

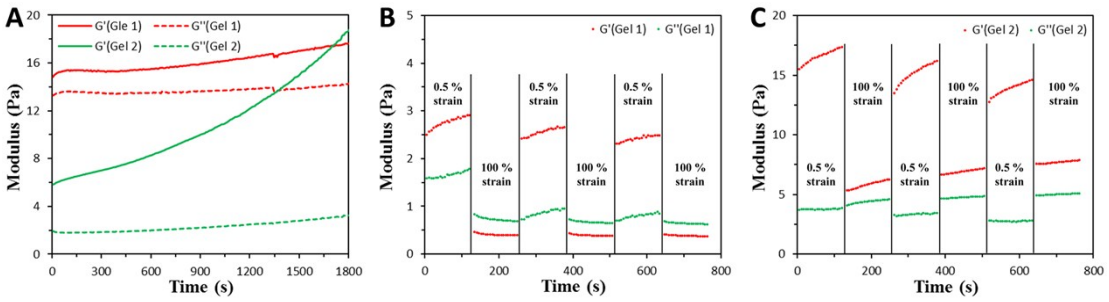


**Figure S2.** (A) Time sweep analysis of hydrogels at room temperature (Strain = 0.5 %, Frequency = 1.0 Hz). Thixotropy of Gel 1 (B) and Gel 2 (C) with different amplitude (Frequency = 1.0 Hz, Strain = 0.5 % and 100 %). (Gel 1 = 0.5 wt%, Gel 2 = 1.0 wt%).

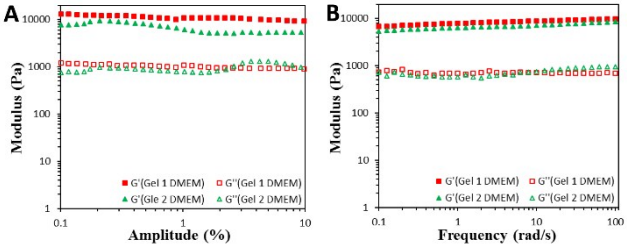


**Figure S3.** (A) Amplitude sweep analysis of hydrogels swelling in DMEM for 24 hours (Frequency = 1.0 Hz). (B) Frequency sweep analysis of hydrogels swelling in DMEM for 24 hours (Strain = 0.5 %). (Gel 1 = 0.5 wt%, Gel 2 = 1.0 wt%).