Electronic Supplementary Information

Skin-inspired environment-tolerant organohydrogel sensors with balanced mechanical and electrical properties for human motion and physiological signal monitoring

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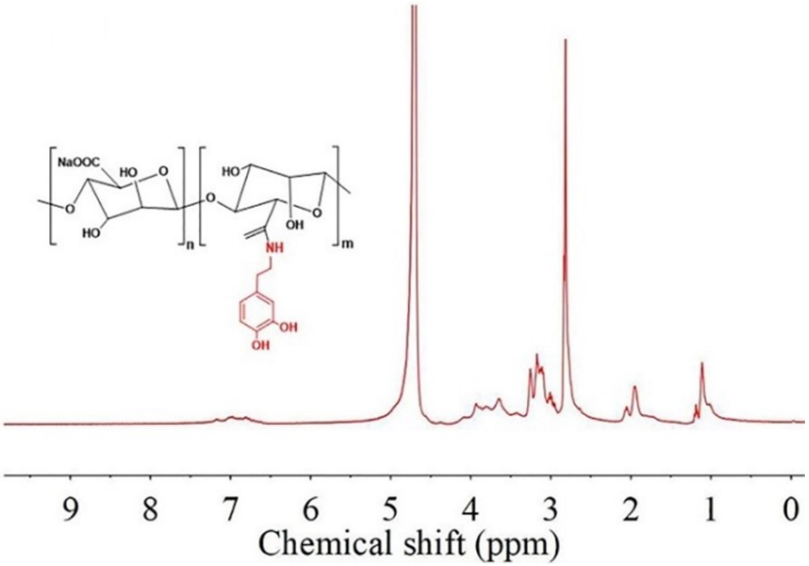

Fig. S1. ^{1}H NMR spectrum of Alg-PBA.

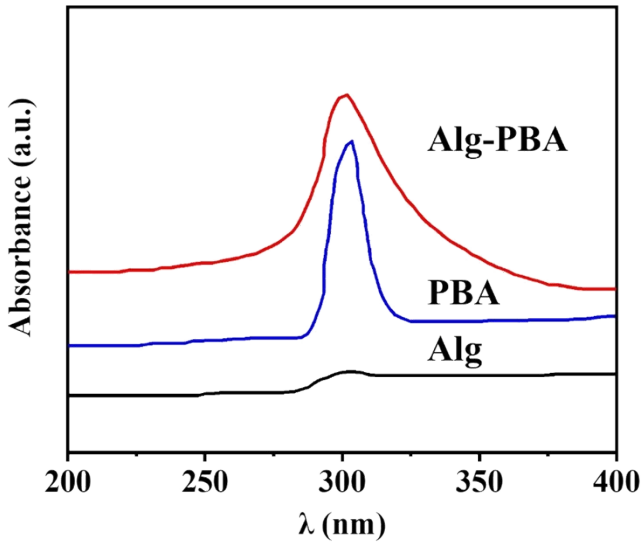

Fig. S2. UV-vis spectra of Alg, PBA, and Alg-PBA.

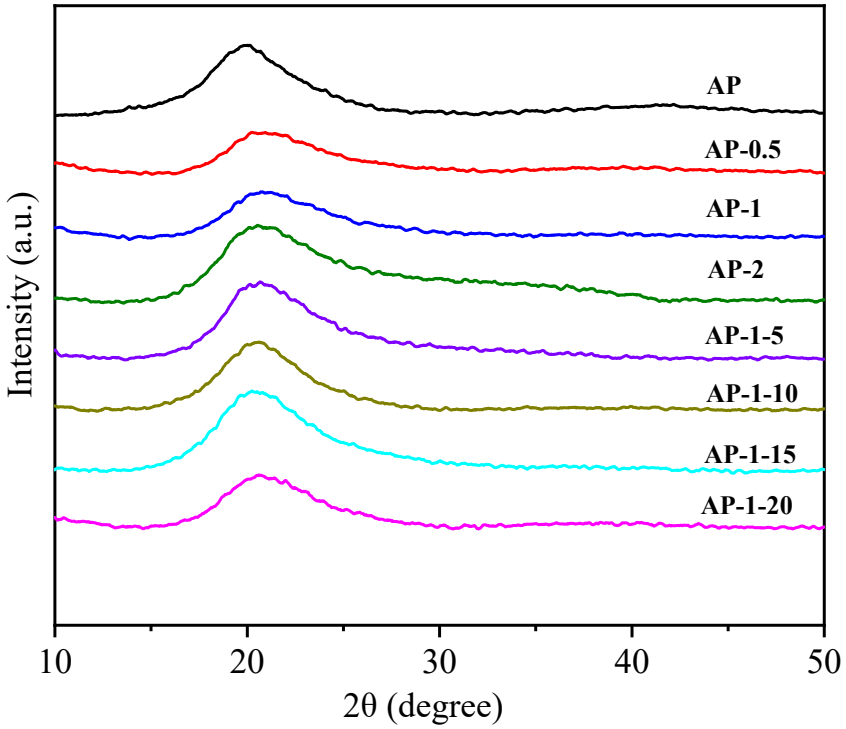

Fig. S3. XRD patterns of lyophilized AP hydrogel, AP-x and AP-x-y organohydrogels.

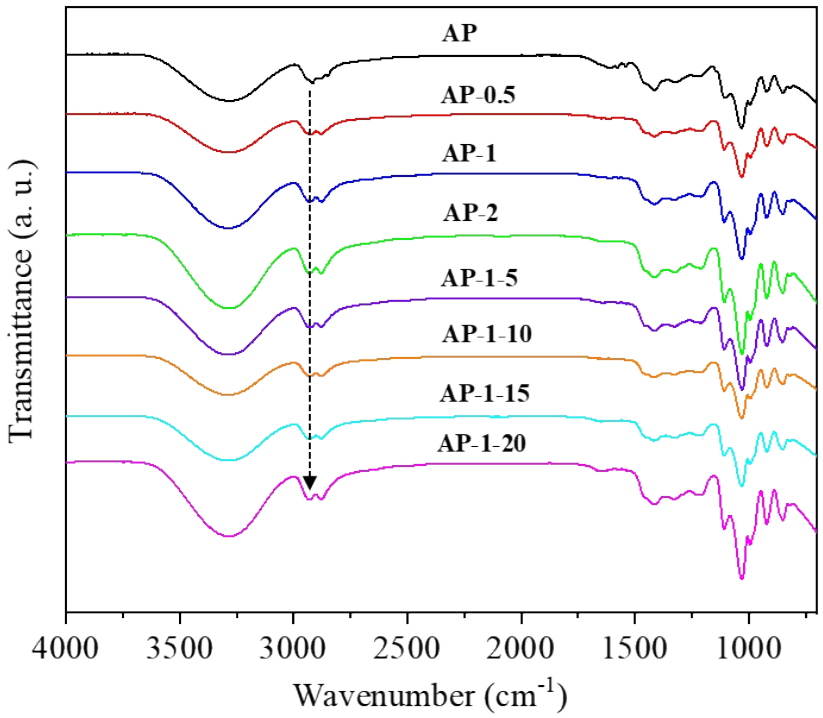

Fig. S4. FT-IR spectra of lyophilized AP hydrogel, AP-x and AP-x-y organohydrogels.

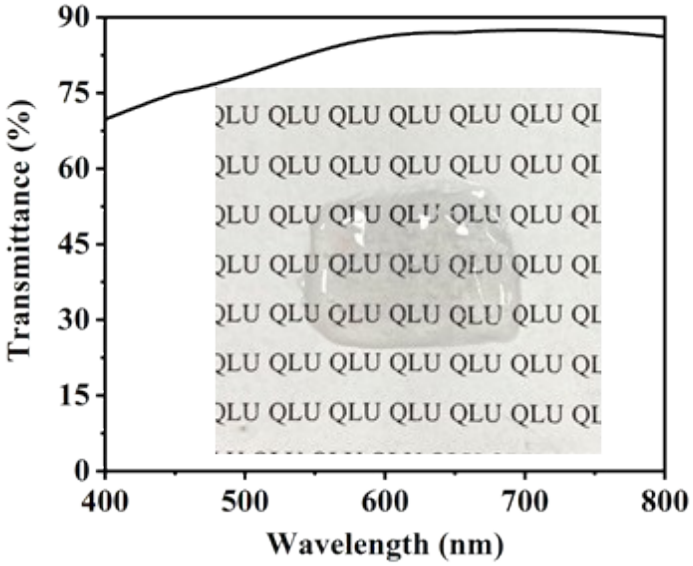

Fig. S5. Transmission spectra of the AP-1-15 organohydrogel. The inset shows the AP-1-15 organohydrogel on a paper.

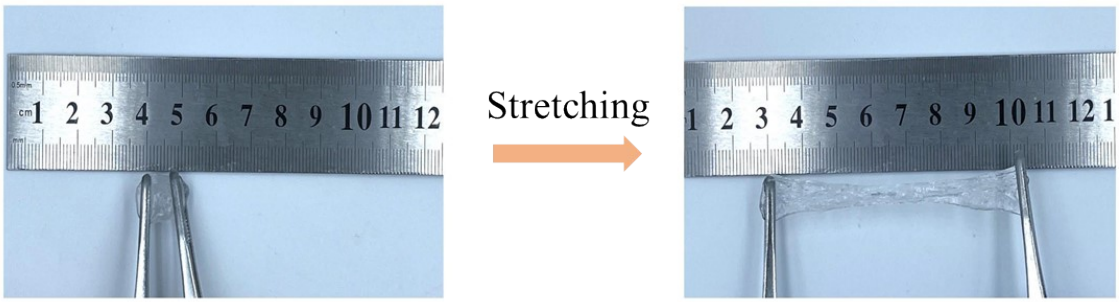

Fig. S6. Photos showing the AP-1-15 organohydrogel before and after stretching.

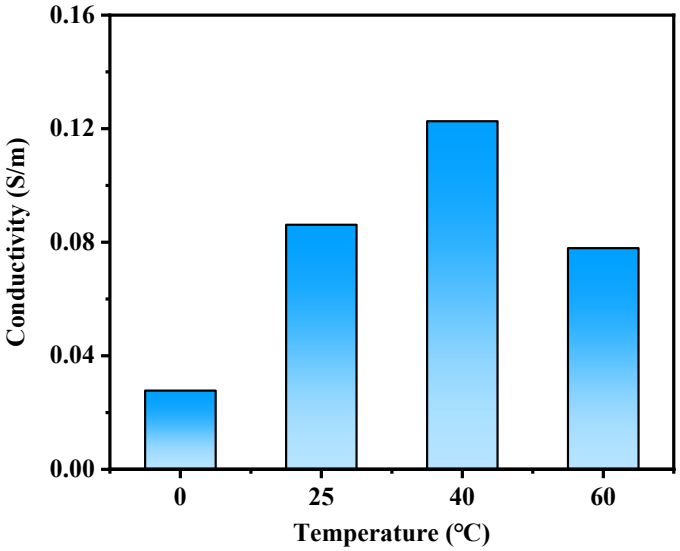

Fig. S7. The conductivities of AP-1-15 organohydrogel under different temperatures.

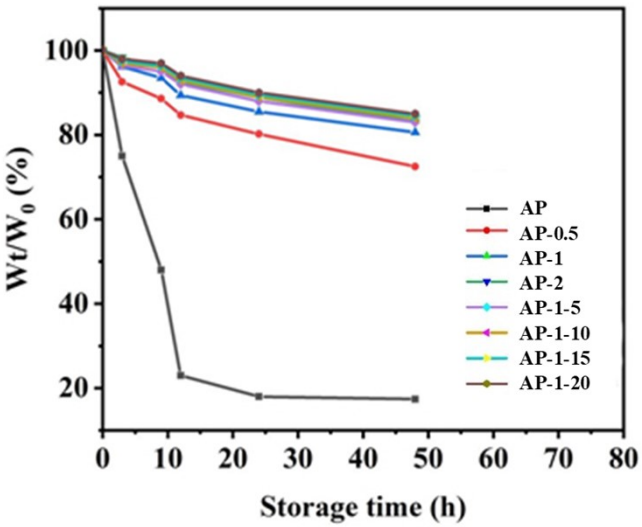

Fig. S8. The weight changes of the AP hydrogel, AP-x, and AP-x-y organohydrogels at 60 °C.

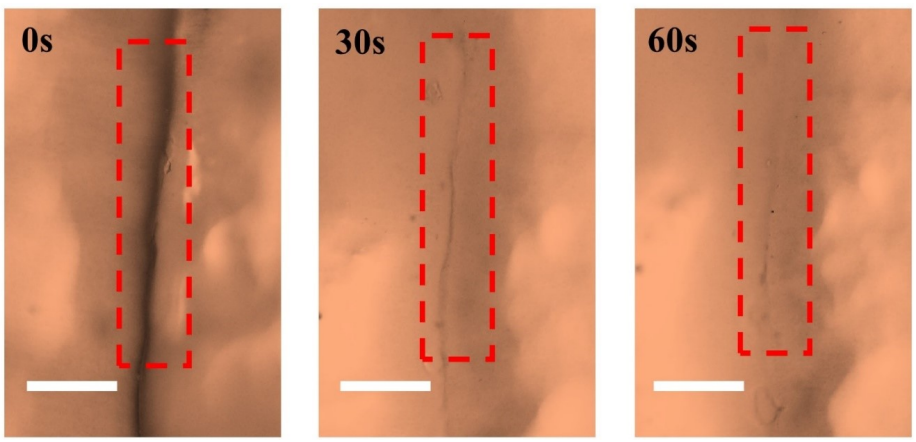

Fig. S9. Optical microscope images of the self-healing process of AP-1-15 organohydrogel after 60 s.

Table S1. The self-healing efficiencies of AP-1-15 organohydrogel after three successive healing processes.

Samples	Breaking stress[a] (kPa)	Self-healing efficiency[b] (%)
freshly prepared	59.2	–
1st healed	58.1	98.2
2nd healed	57.0	96.2
3rd healed	55.7	93.8

[a.] The breaking stress values were obtained from tensile tests. [b.] Self-healing efficiencies were calculated by the breaking stress of healed sample divided by that of freshly prepared sample.

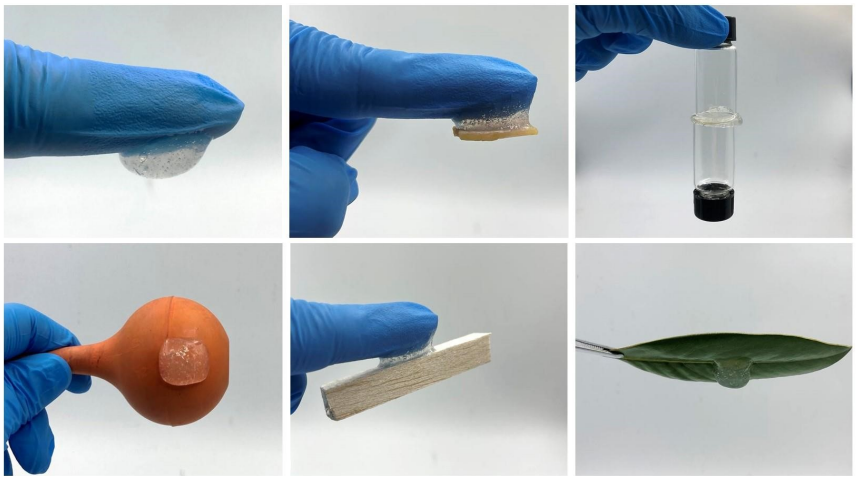

Fig. S10. Photos showing the adhesion behaviours of AP-1-15 organohydrogel on substrates including rubber glove, copper foil, glass, earwash ball, wood, and leave.