Electronic Supplementary Information

Herbal molecules-mediated dual network hydrogels with adhesive and antibacterial properties for strain and pressure sensing

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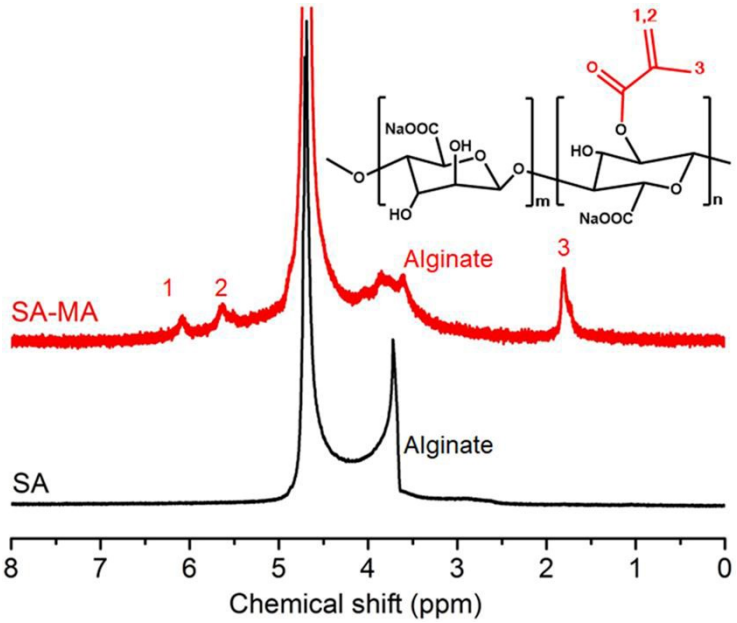

Figure S1. ^{1}H NMR spectra of SA and SA-MA in D_2O.

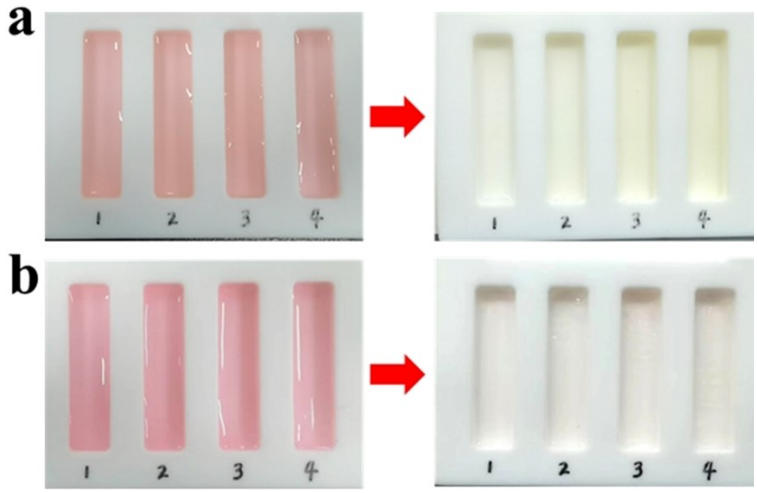

Figure S2. Photos showing the states of a) SA hydrogels and b) GA/SA DN hydrogels in the molds before and after photopolymerization.

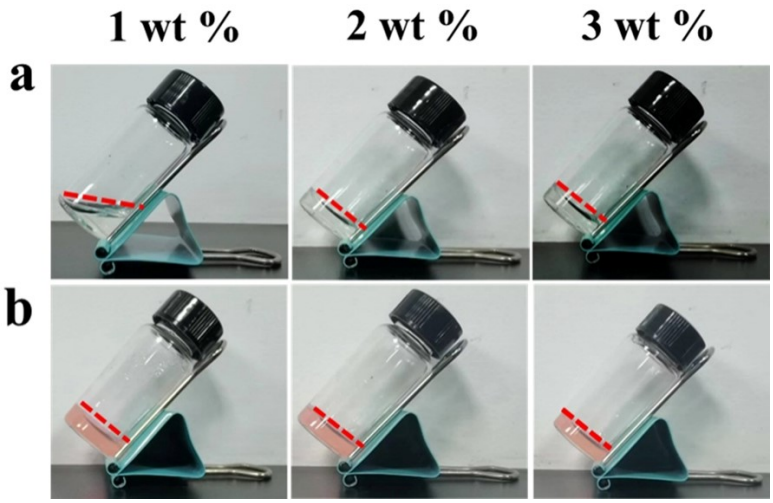

Figure S3. Photos showing the states of a) GA solutions after cooling to room temperature, and b) GA/SA DN hydrogel precursor solutions before photopolymerization.

Table S1. The gelation parameters of GA hydrogels and corresponding gelation times.

Entry	GA (mg)	SA-MA (mg)	Eosin Y in 1-vinyl-2-pyrrolidinone (μL)	triethanolamine (μL)	gelation time (min)
1	20	0	0	0	7.3
2	20	30	0	0	4.8
3	20	0	5	0	7.5
4	20	0	0	5	9.7
5	20	30	5	5	7.6

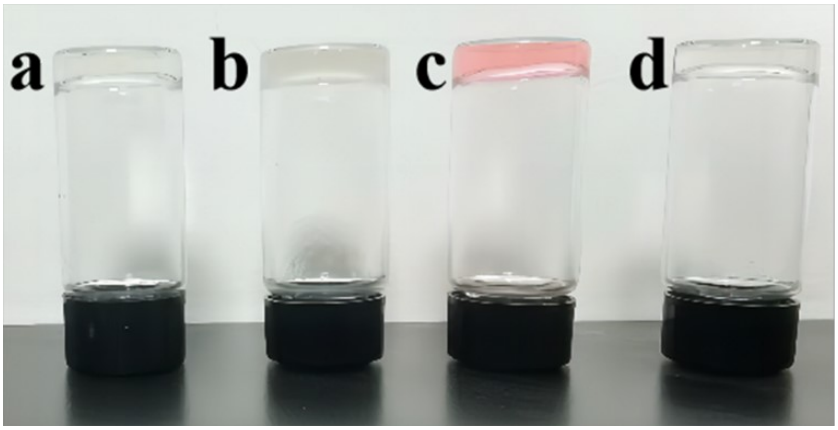

Figure S4. Photos showing the gelation states of a) pure GA hydrogel, and GA hydrogel after the addition of b) SA-MA, c) Eosin Y and 1-vinyl-2-pyrrolidinone, and d) triethanolamine.

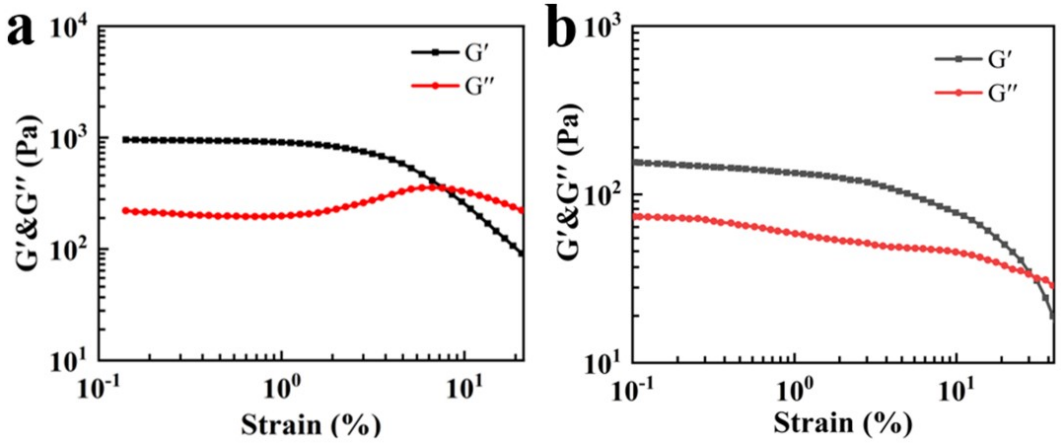

Figure S5. G′ and G″ of a) pure GA hydrogel and b) GA hydrogel containing the SA-MA, Eosin Y, 1-vinyl-2-pyrrolidinone and triethanolamine in oscillatory strain amplitude sweep tests.

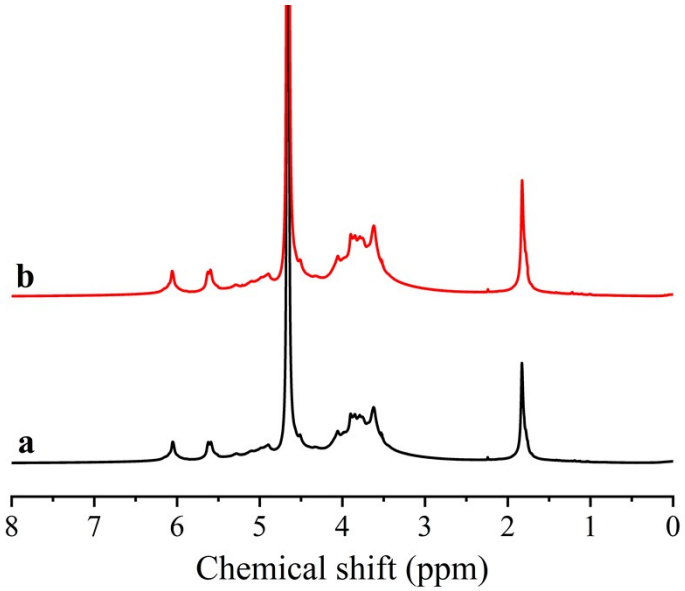

Figure S6. ^{1}H NMR spectra of a) dissolved SA-MA without heating and b) SA-MA sample after heating-cooling for three cycles in D_2O.

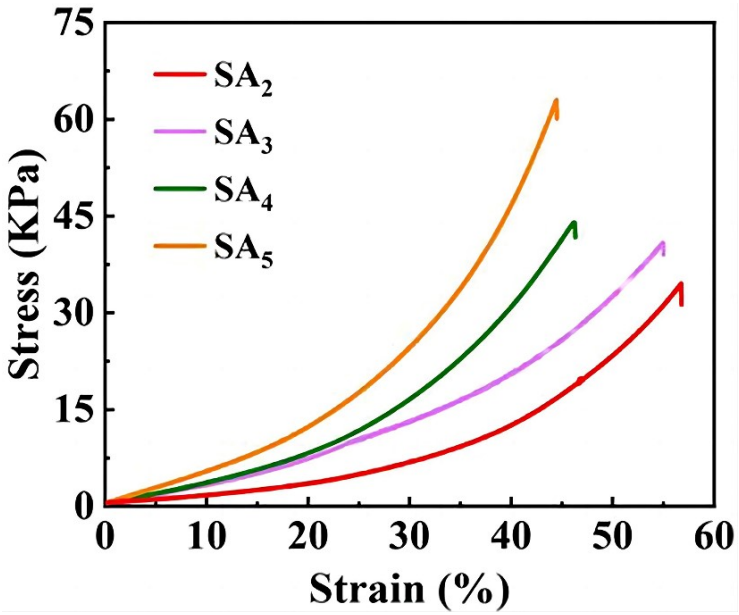

Figure S7. Tensile curves of SA hydrogels with different SA contents.

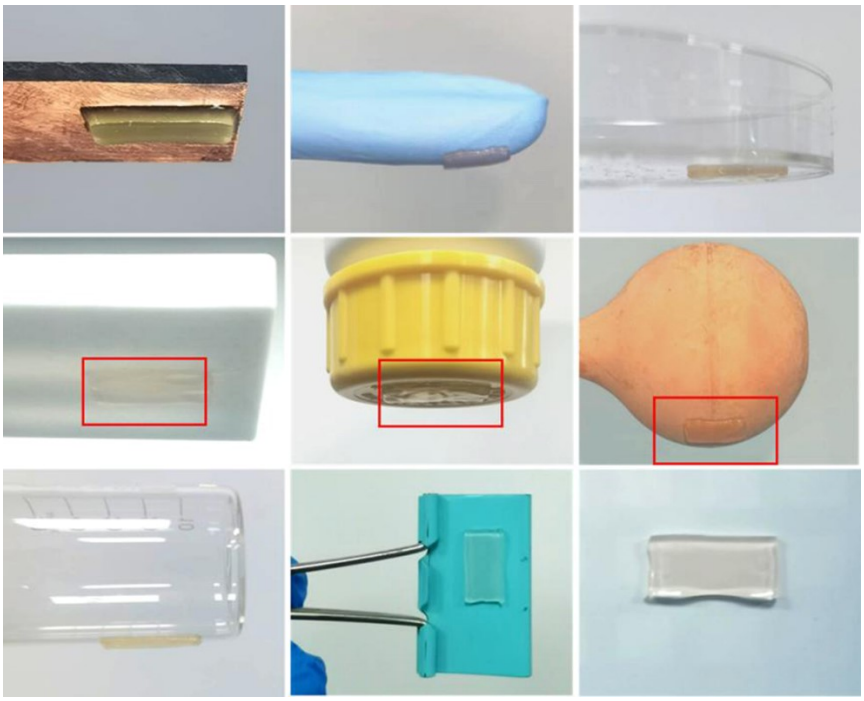

Figure S8. Images of the GA/SA_3 DN hydrogels that were adhered to various surfaces including wood, finger wearing laboratory glove, rubber suction bulb, polytetrafluoroethylene mold, plastic bottle cap, glass beaker, iron clip and paper.

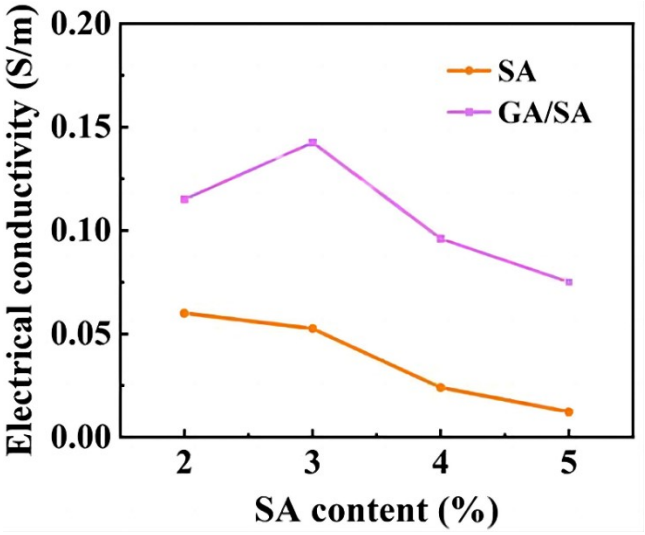

Figure S9. The electrical conductivities of SA hydrogels and GA/SA DN hydrogels.

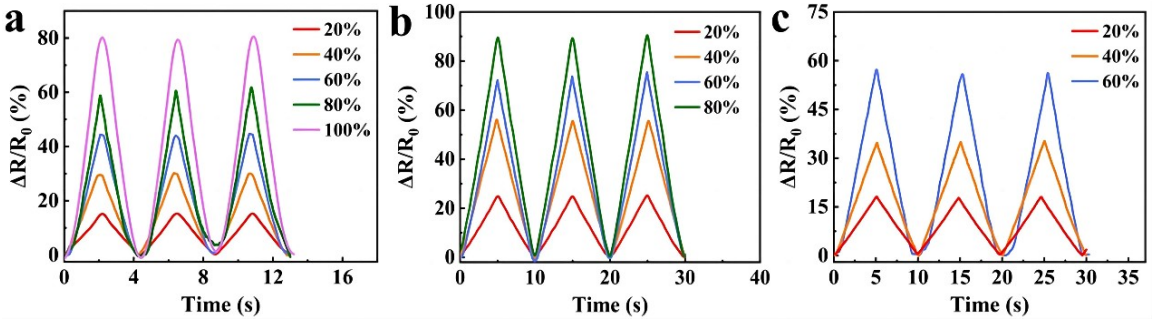

Figure S10. Relative resistance changes of a) the GA/SA_2 DN hydrogel, b) GA/SA_4 DN hydrogel, and c) GA/SA_5 DN hydrogel under different strains.

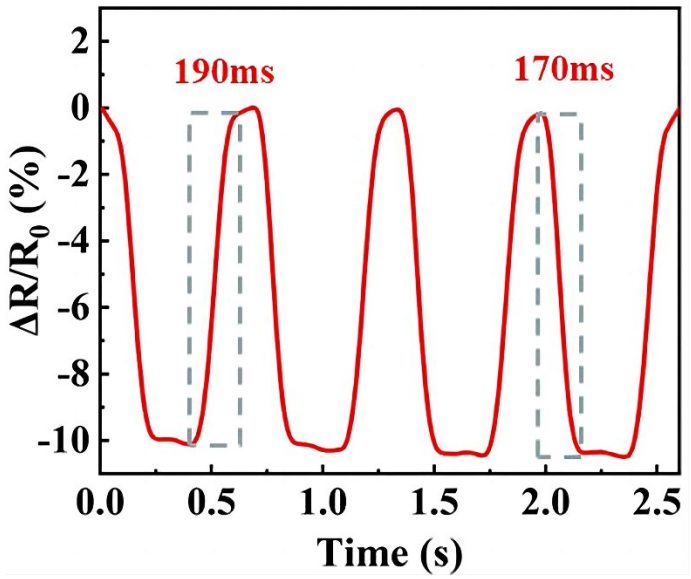

Figure S11. The response and relaxation times of GA/SA_3 DN hydrogel when compressed.