

Supporting Information

Ascidian-Inspired Aciduric Hydrogels with High Stretchability and Adhesiveness
Promote Gastric Hemostasis and Wound Healing

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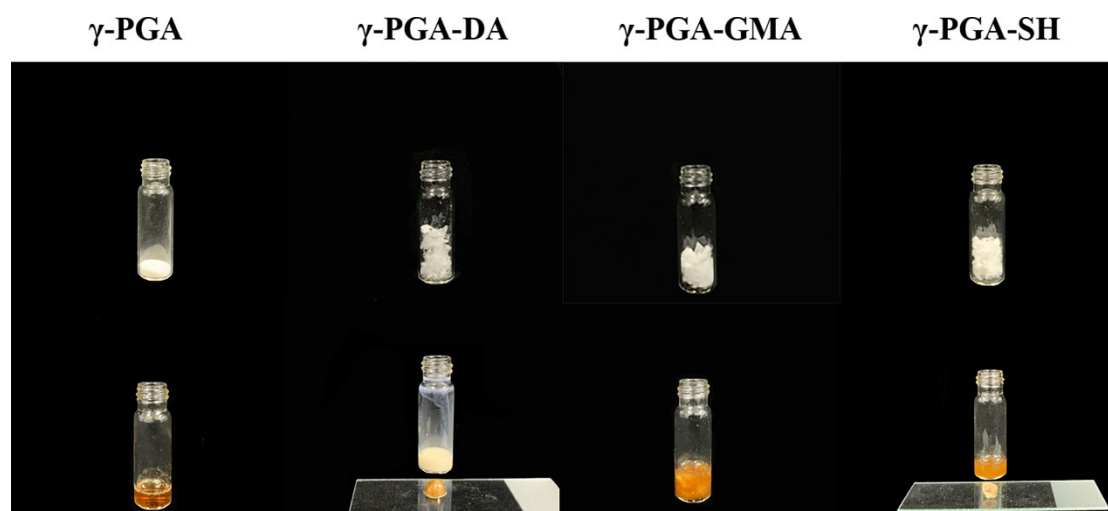


Fig. S1. Photographs of TA solution reacted with different lyophilized γ -PGA derivatives.

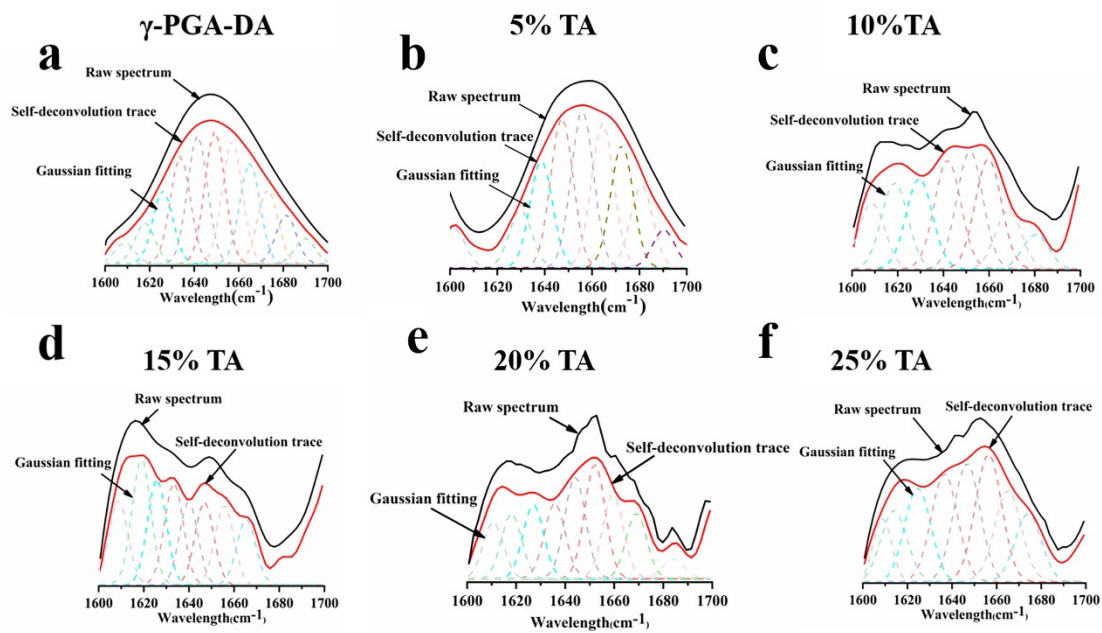


Fig. S2. Secondary structures analysis of γ -PGA-DA (a), PDTA formed by γ -PGA-DA and 5% TA (b), 10% TA (c), 15% TA (d), 20% TA (e), 25% TA (f).

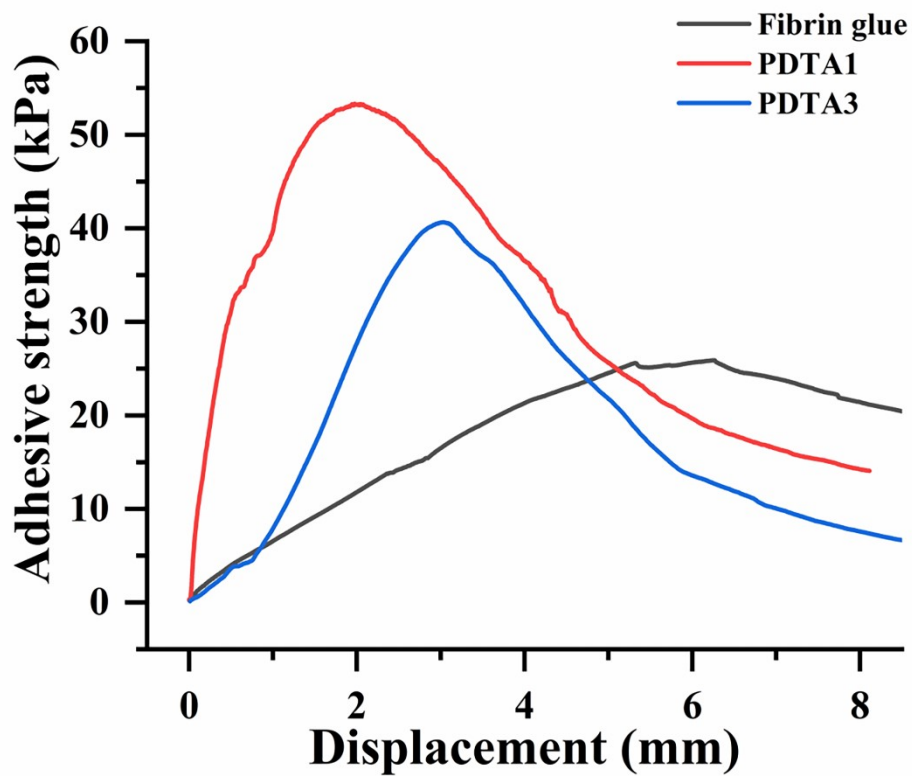


Fig. S3. The adhesion curves of fibrin glue, PDTA1 hydrogel adhesive and PDTA3 hydrogel adhesive.

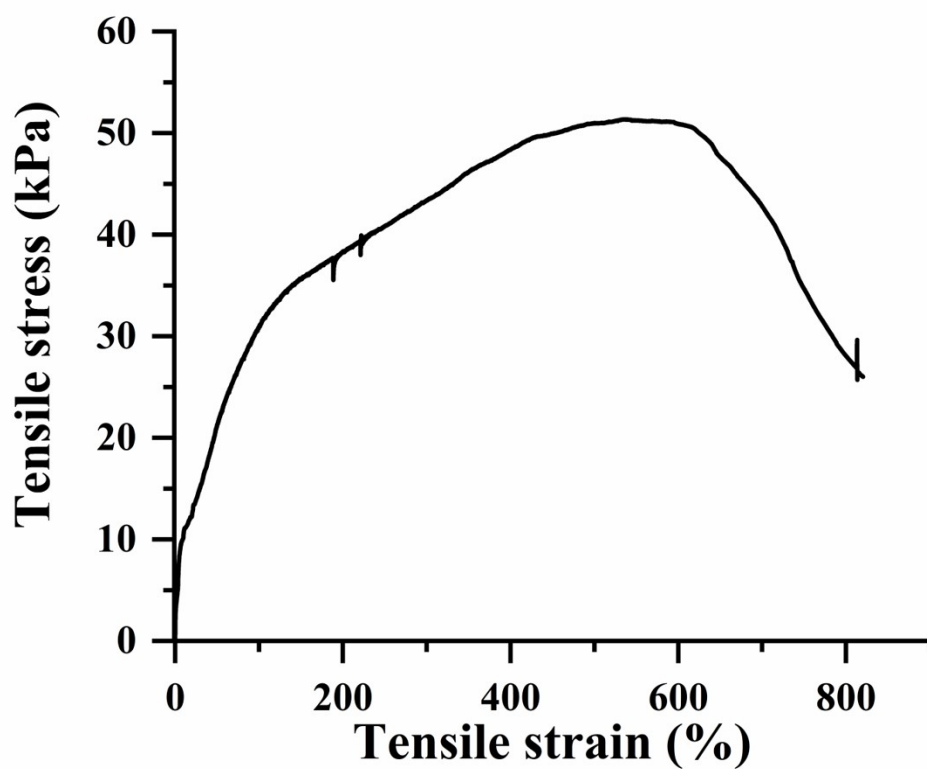


Fig. S4. The tensile stress-strain curves curve of PDTA1 hydrogel adhesive.

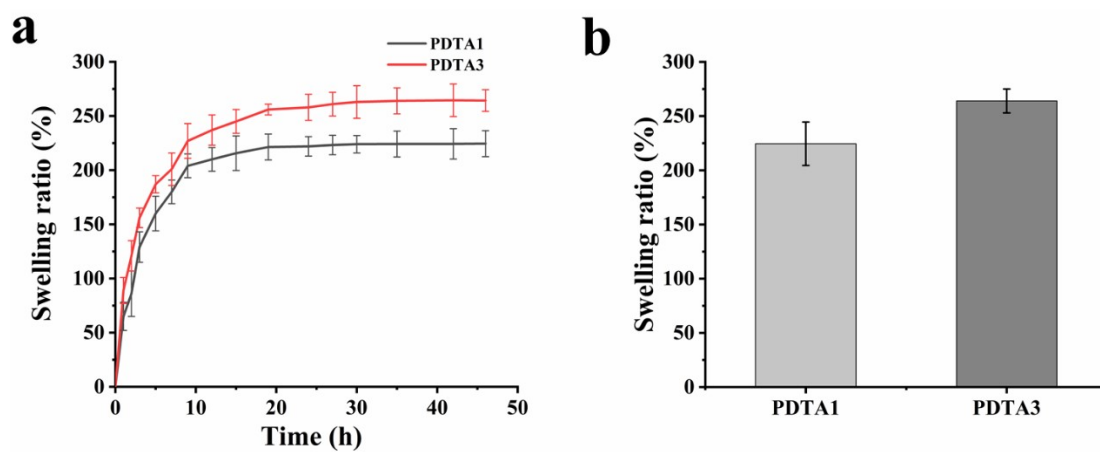


Fig. S5. The swelling property of PDTA hydrogel adhesives in stimulation gastric fluid.

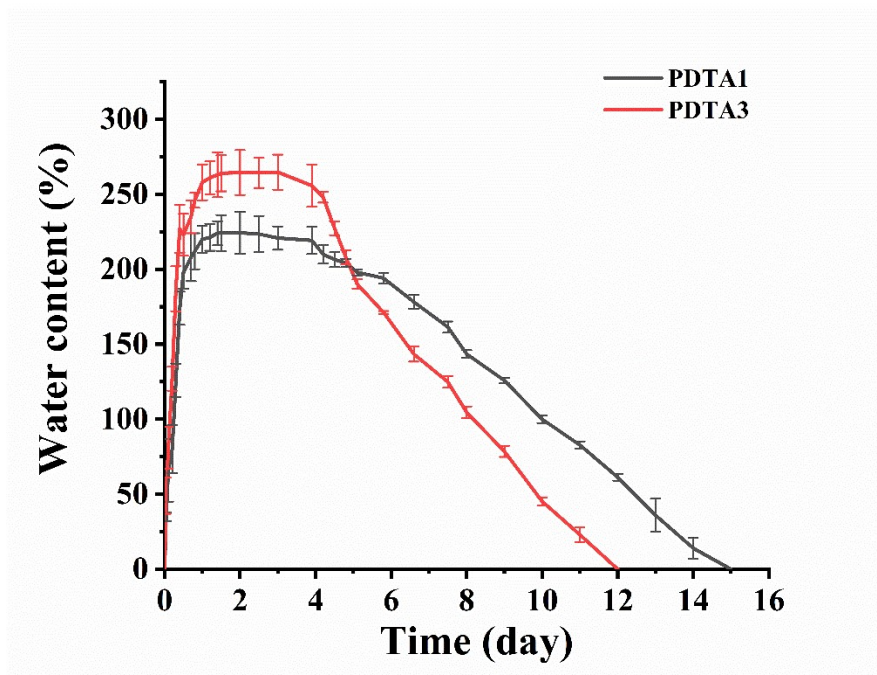


Fig. S6. The water content properties of hydrogel adhesives.

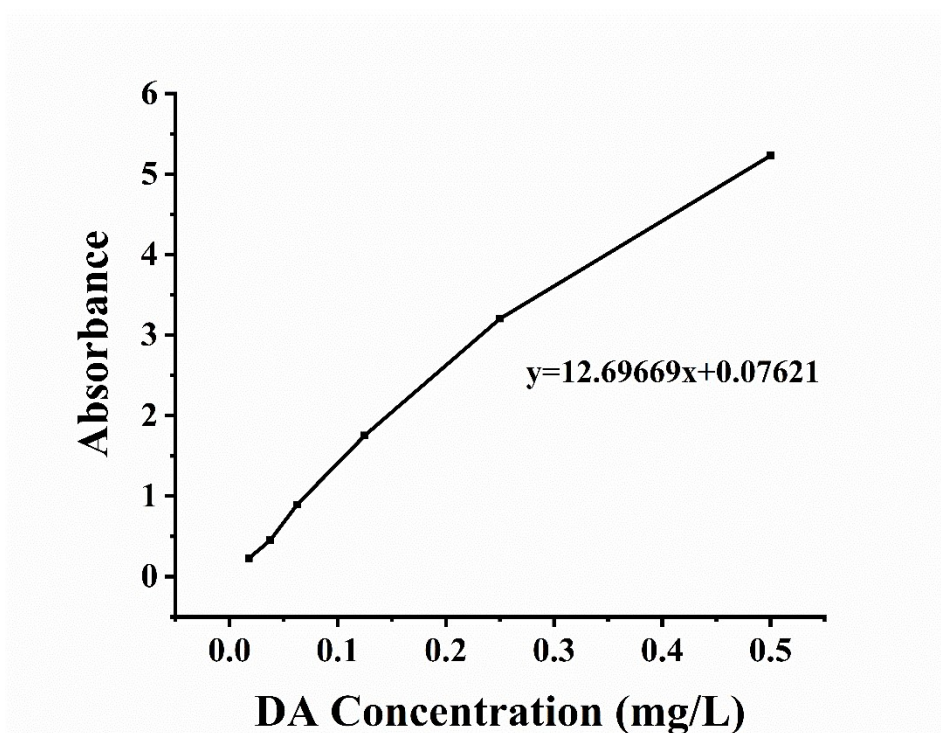


Fig. S7. The calibration curve of dopamine.

Table S1. Secondary structures analysis of γ -PGA, γ -PGA-DA and PDTA.

Secondary structure fractions	γ -PGA		γ -PGA-DA		PDTA	
	Peak position [cm-1]	Area [%]	Peak position [cm-1]	Area [%]	Peak position [cm-1]	Area [%]
α -helix	1657;1649	29.1	1649;1618;	28.3	1656;1616;	18.7
β -sheet	1617;1625; 1633;1673; 1681;1689.	37.3	1633;1681	43.7	1626;1636	38.8
β -turn	1665.0	16.6	1665	28.0	1666;1676	14.2
Random coil	1641.5	14.6	×	0	1646	21.2
Indetermination	1608.8	2.4	×	0	1609	7.1

Table S2. The secondary structure analyzes of PDTA formed with different concentrations of TA.

Secondary structure fractions	5% TA		10% TA		15% TA		20% TA		25%TA	
	Peak position [cm-1]	Area [%]	Peak position [cm-1]	Area [%]	Peak position [cm-1]	Area [%]	Peak position [cm-1]	Area [%]	Peak position [cm-1]	Area [%]
α -helix	1657	21.6	1651;1659	28.1	1655	11.1	1652	9.6	1656.3	8.3
β -sheet	1611;1621;1633	31.6	1618;1629	26.9	1618;1625;1633;1639	44.1	1616;1622;1637	45.4	1613;1624;1638	44.6
β -turn	1668;1680;1687	26.0	1668;1680	15.5	1665	14.8	1662;1670;1685	17.3	1665;1674	18.8
Random coil	1645	20.8	1641	18.4	1646	22.8	1643	18.6	1646	15.3
Indetermination	×	0	1608	11.1	1608	7.2	1607	8	1606	13

Movie S1. The robust adhesion of PDTA1 on mental, speed $\times 3$.

Movie S2. High stretchability of PDTA1, speed $\times 3$.