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Supporting Information

A Novel Triple Network Hydrogel Based on Borate Ester Groups: from Structural Modulation to Rapid Wound Hemostasis

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Table S1. Hydrogel formation corresponding to different guanosine (G) concentrations

Groups	1	2	3	4	5
G (mg/mL)	3.33 (Q)	5.71 (W)	7.50 (R)	8.89 (T)	10.00 (Y)
Hydrogel formation	-	+	+	+	+

"-": Hydrogel not formed; "+": Hydrogel formed.

Table S2. Hydrogel formation at guanosine (G) concentration of 5.71 mg/mL

Groups	1	2	3	4	5	6	7	8	9
Presolution A (μL)	100	200	300	400	500	600	700	800	900
Precipitation of G	++	++	+	+	+	-	-	-	-
Hydrogel volume	Presolution B is 400 μL and the total volume is 1400 μL								

"++": a large amount of guanosine precipitation, and "+" : a small amount of G precipitation, and "-" : no G precipitation.

Table S3. Hydrogel formation at guanosine (G) concentration of 7.50 mg/mL

Groups	1	2	3	4	5	6	7	8	9
Presolution A (μL)	100	200	300	400	500	600	700	800	900
Precipitation of G	++	++	++	+	+	+	-	-	-
Hydrogel volume	Presolution B is 600 μL and the total volume is 1600 μL								

"++": a large amount of guanosine precipitation, and "+": a small amount of G precipitation, and "-": no G precipitation.

Table S4. Hydrogel formation at guanosine (G) concentration of 8.89 mg/mL

Groups	1	2	3	4	5	6	7	8	9
Presolution A (μL)	100	200	300	400	500	600	700	800	900
Precipitation of G	++	++	++	++	+	+	-	-	-
Hydrogel volume	Presolution B is 800 μL and the total volume is 1800 μL								

"++": a large amount of guanosine precipitation, and "+": a small amount of G precipitation, and "-": no G precipitation.

Table S5. Hydrogel formation at guanosine (G) concentration of 10.00 mg/mL

Groups	1	2	3	4	5	6	7	8	9
Presolution A (μL)	100	200	300	400	500	600	700	800	900
Precipitation of G	++	++	++	++	++	++	+	+	-
Hydrogel volume	Presolution B is 1000 μL and the total volume is 2000 μL								

"++": a large amount of guanosine precipitation, and "+": a small amount of G precipitation, and "-": no G precipitation.

Table S6. Content and distribution of each element in the hydrogel ***tri*-BA@PVA/G**

Relative percent elemental content (wt %)	W8	R8	T9	Y8
B	20.68	20.35	19.13	20.55
C	54.40	52.85	52.19	52.14

N	1.88	2.81	3.48	4.70
O	17.22	16.81	16.36	16.74
Cl	2.68	3.31	3.92	2.80
K	3.15	3.88	4.93	3.07

Table S7. Wound healing data.

	Day 3 (g)	Day 3 (cm^2)	Healing rate (%)
Control	0.0043	2.5764	4%
Undried	0.0034	2.0371	24%

Notes: transparent sulfuric acid paper (10 cm × 10 cm), the mass of which is equal to ten randomly selected sheets for weighing and calculating the average value obtained：0.1669g;

Wound area (cm^2) = 100cm^2 × mass of paper sheet (wound size area)g / 0.1669g;

Healing rate (%) = (Original wound area - unhealed wound area) / original wound area × 100%;

Original wound area：Original trauma area: converted to 2.6962 cm^2.

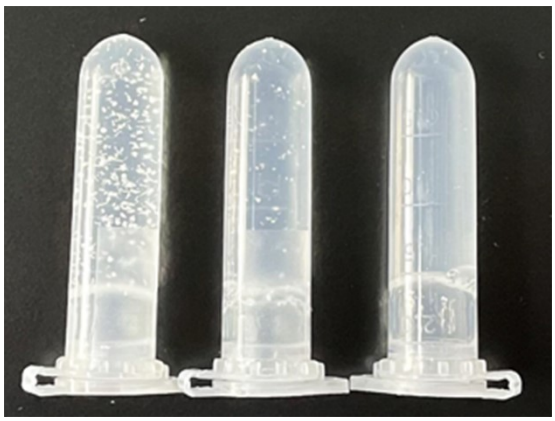

Figure S1. Images of guanosine in hydrogel ***tri*-BA@PVA/G.**

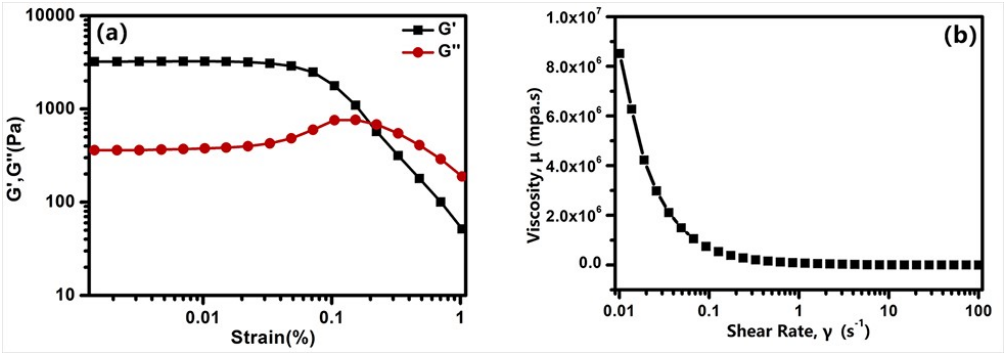

Figure S2. The rheological behavior of the hydrogel W8 as measured by (a) strain and (b) viscosity test.

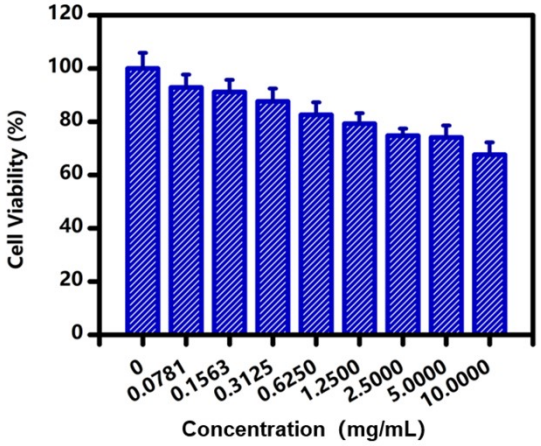

Figure S3. Cell viability of U87 cells after co-cultured with ***tri*-BA@PVA/G** extracts at different concentrations.

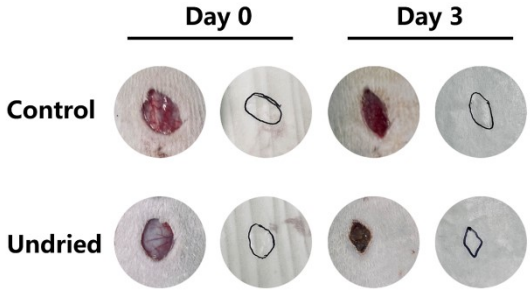

Figure S4. Photographs of wound healing in the control and hydrogel groups (Undried) at different healing times.