Supporting Information for

ORIGINAL ARTICLE

An injectable bioactive dressing based on platelet-rich plasma and nanoclay: Sustained release of deferoxamine to accelerate chronic wound healing

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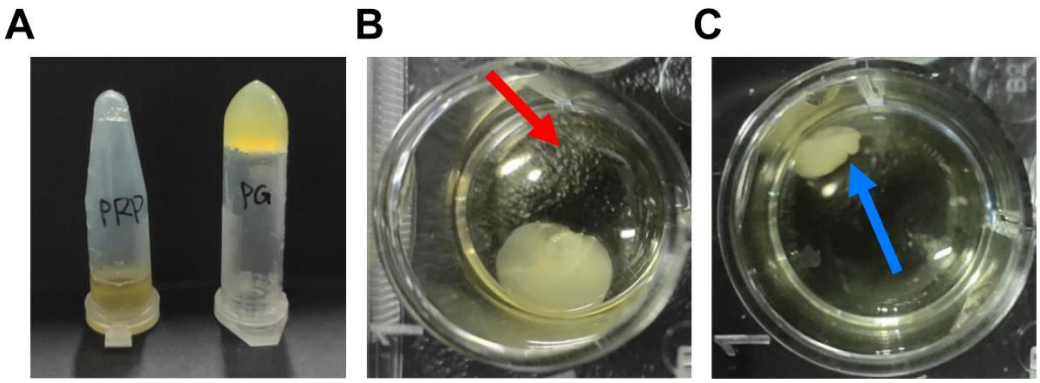
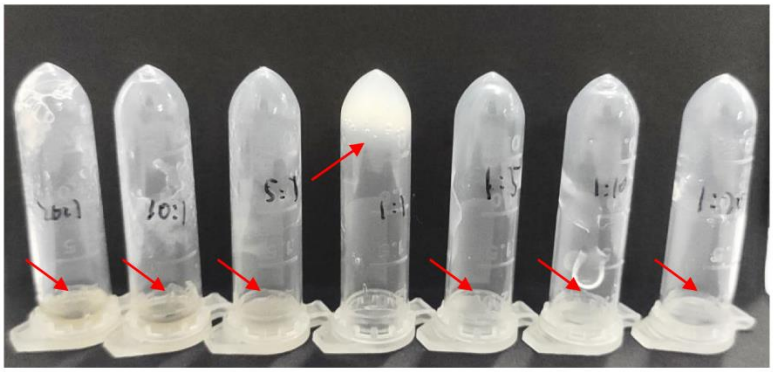


Figure S1 Photographs of PRP and PG. (A) Photograph of PRP gel (PG) formation. (B) When the PG is pressed lightly, the plasma flowed out of the gel (red arrow). (C) Further pressing caused more plasma to flow out of the gel, and the volume of the gel mass was significantly reduced (blue arrow).

A

PRP : Laponite (v/v)						
20:1	10:1	5:1	1:1	1:5	1:10	1:20
sol	sol	sol	gel	sol	sol	sol

B



C

PRP : Laponite(v/v)								
5:1	4:1	3:1	2:1	1:1	1:2	1:3	1:4	1:5
sol	sol	sol	gel, but flowing	gel	gel	gel	sol	sol

D

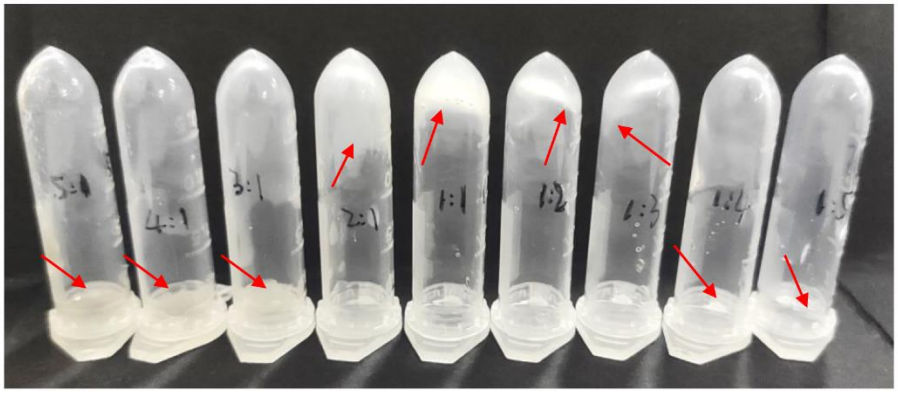


Figure S2 Optimization of the gelation ratio of PLG gels. The compositions of various prescriptions (A) and (C). The photograph display of gel formation (B) and (D).

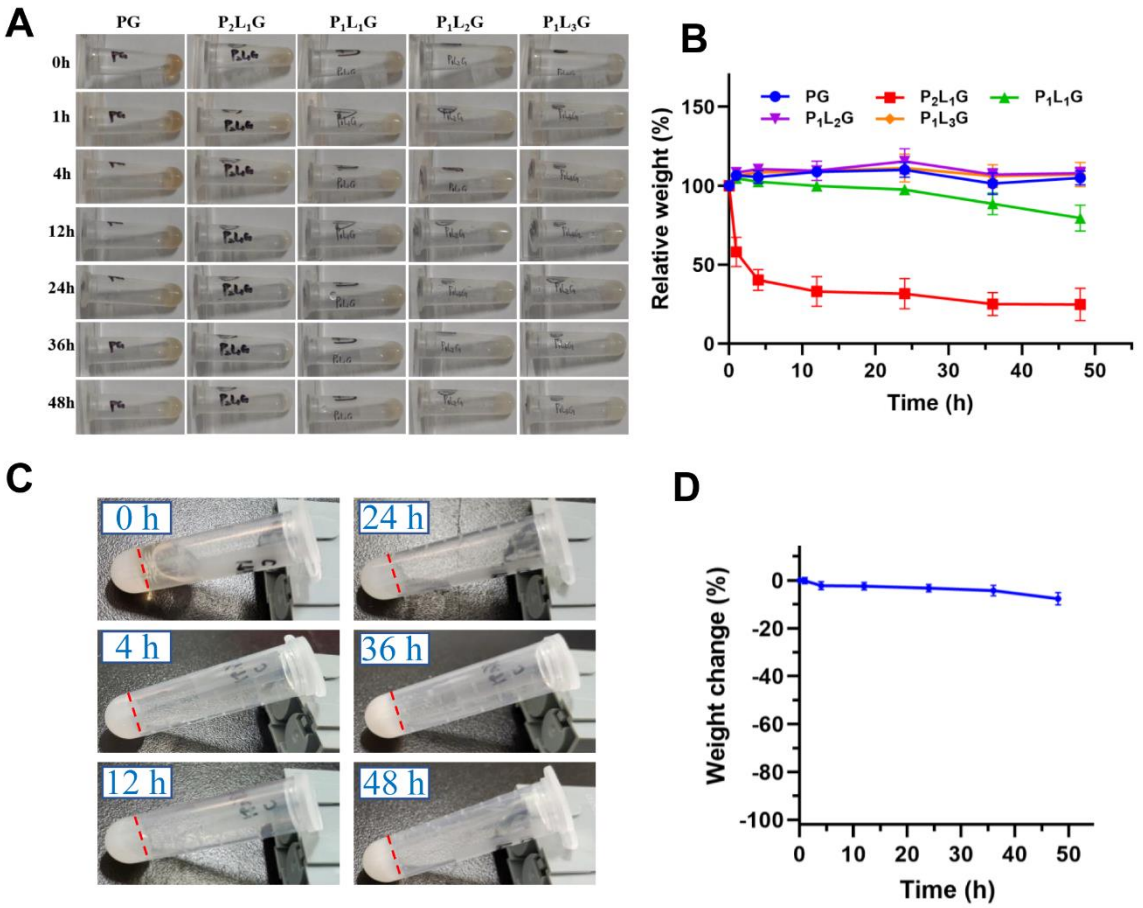


Figure S3 In vitro degradation behavior. Morphology changes (A) and degradation curve (B) of the gels incubated with PBS. Morphology changes (C) and degradation curve (D) of the PLG incubated with plasma. Data are reported as mean ± SD (n = 3).

Figure S4 Photographs of PLG hydrogel after injection. The photos demonstrate the injectability and self-healing ability of the PLG gel.

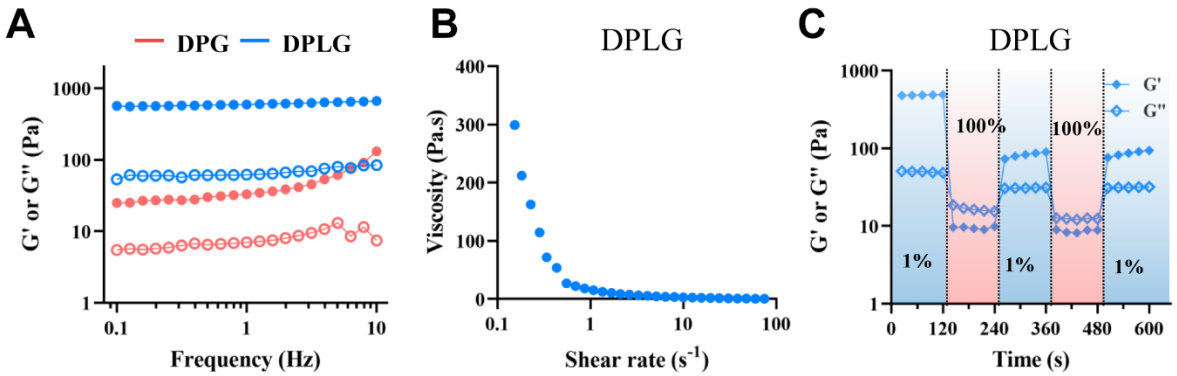


Figure S5 Rheological properties of DPG and DPLG. (A) Storage (G') modulus (●) and loss (G") modulus (○). (B) Viscosity over shear rates of DPLG. (C) G′ and G″ of DPLG during cycling three times of shear strain between 1% and 100%.

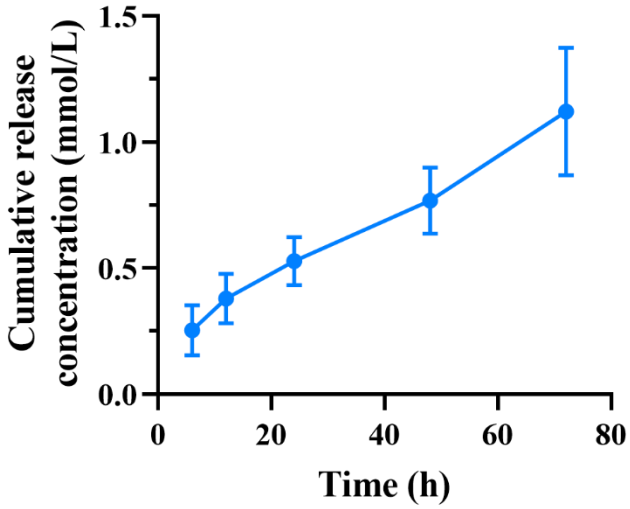


Figure S6 The release behavior of magnesium ions. Data are reported as means ± SD (n = 3).

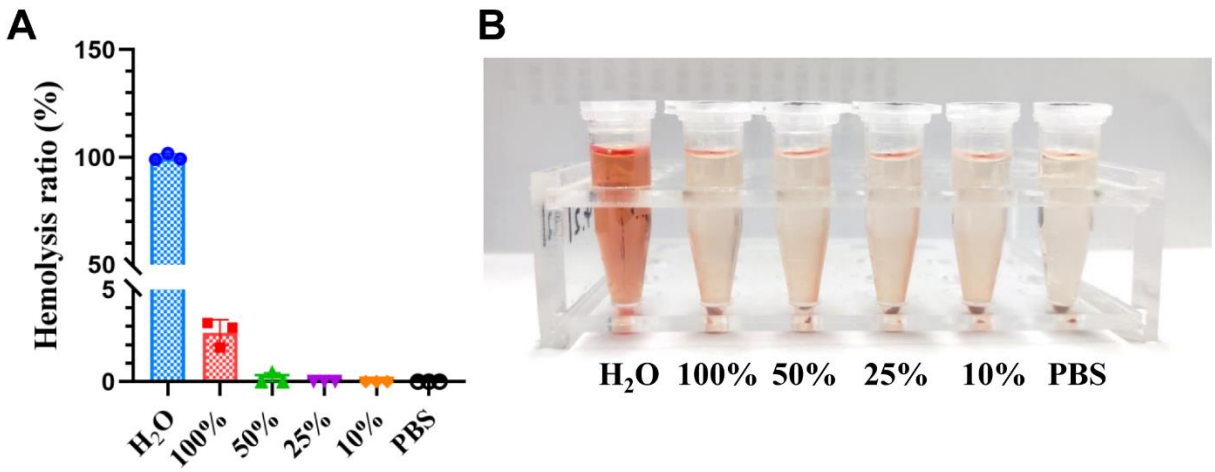


Figure S7 Hemolysis test of PLG degradation products. (A) Hemolysis ration. (B) The supernatant imaging of RBCs in different treatment groups. Data are reported as means ± SD (*n* = 3).

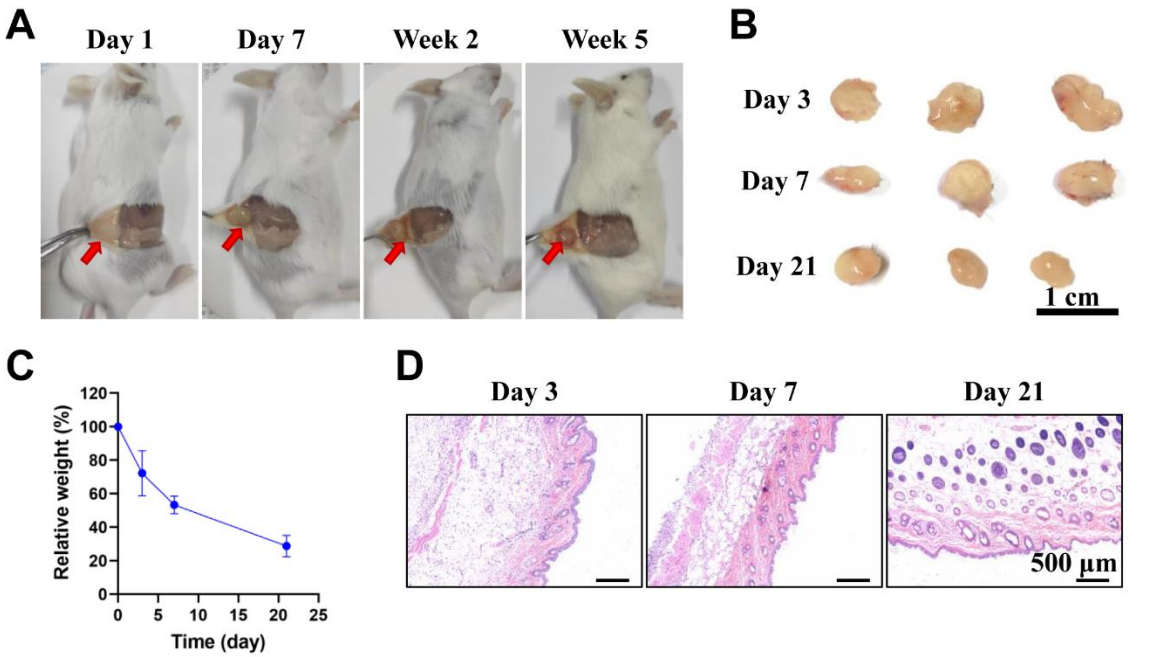


Figure S8 Biodegradation and biocompatibility of PLG *in vivo*. (A) PLG gradually degraded slowly *in vivo*. Morphology changes (B) and degradation curve (C) of the PLG *in vivo*. (D) H&E staining shown that PLG had good biocompatibility. Data are reported as means ± SD (*n* = 3).

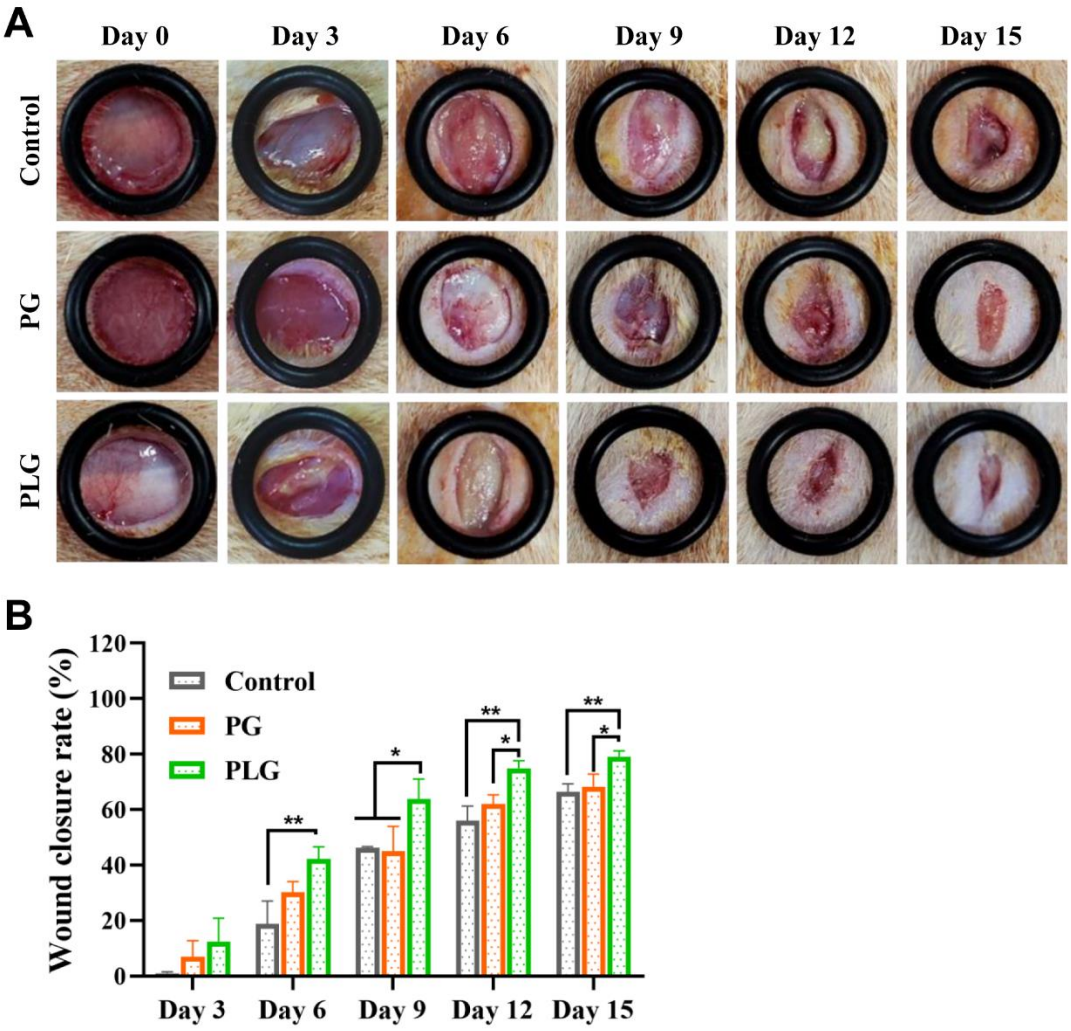


Figure S9 PLG hydrogel accelerated wound healing in a full-thickness skin defect of diabetic rats. (A) The representative photographs of the wound healing process. (B) Wound healing ratio of the defects (n = 4). Data are reported as means ± SD. *P < 0.05 and **P < 0.01.

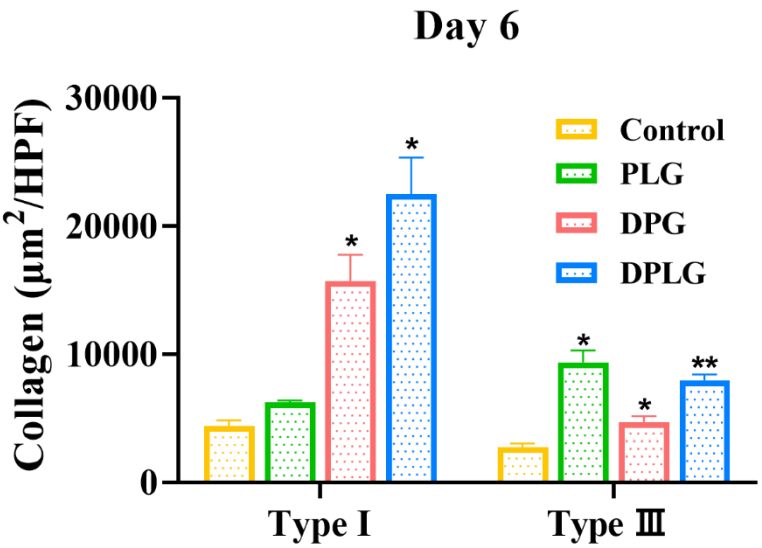


Figure S10 Semi-quantitative analysis of type I and type III collagen of wound area on Day 6. Data are reported as mean ± SD (n = 3). *P < 0.05 and **P < 0.01.

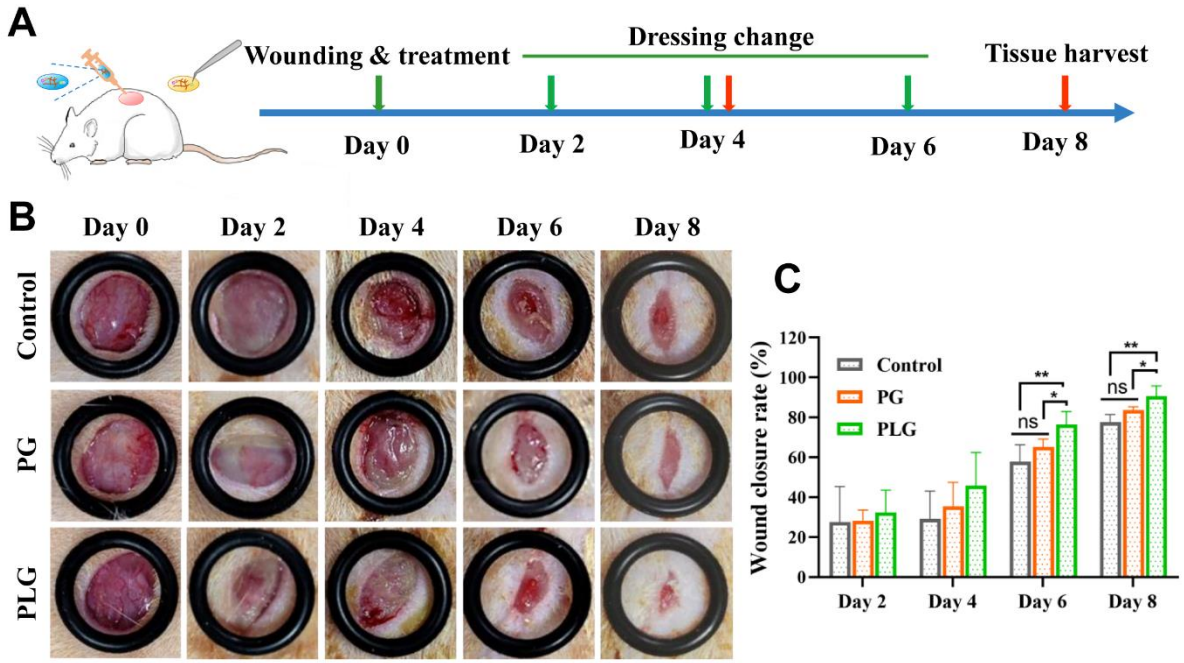


Figure S11 PLG hydrogel accelerated wound healing in a full-thickness skin defect of normal rats. (A) Schematic diagram illustrating the wound and treatment schedule in rats. (B) The representative photographs of the wound healing process. (C) Wound healing ratio of the defects (n = 5). Data are reported as means ± SD. *P < 0.05 and **P < 0.01.

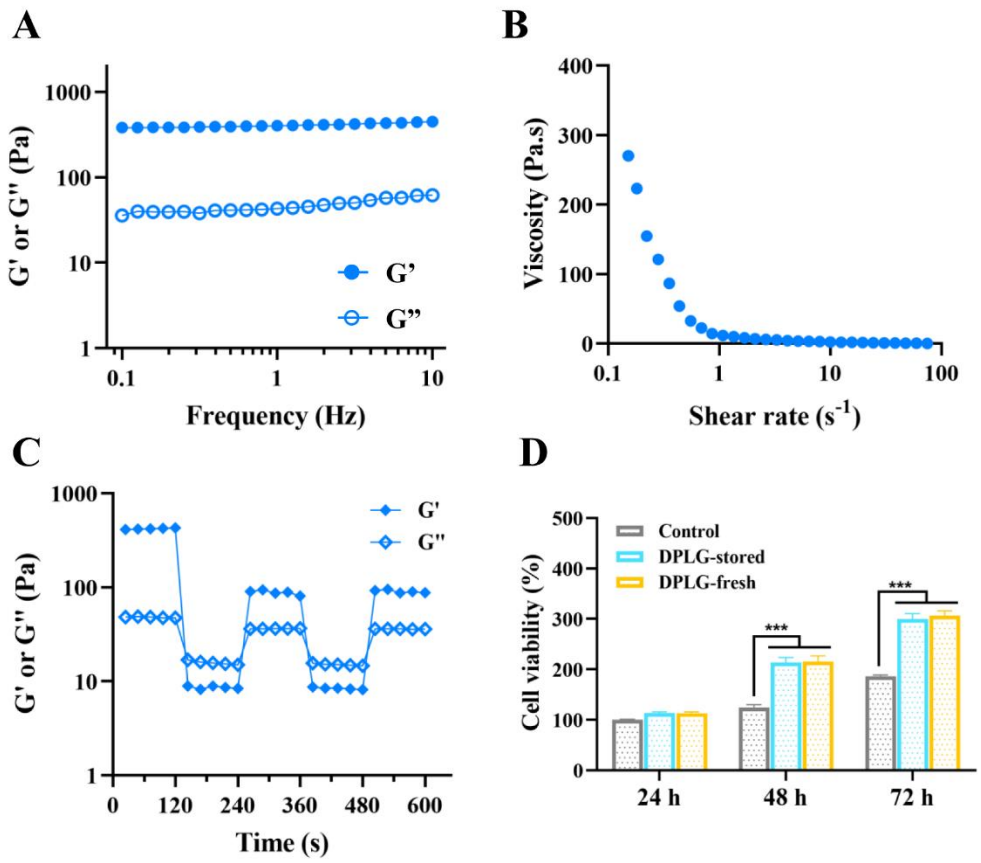


Figure S12 Storage stability of DPLG. (A) Storage (G') modulus and loss (G") modulus. (B) Viscosity over shear rates. (C) G′ and G″ during cycling three times of shear strain between 1% and 100%. (D) Cell proliferation rate of L929 (n = 6). Data are reported as means ± SD. *P< 0.05, **P < 0.01, and ***P < 0.001.

Movie S1

The PLG hydrogel was injected through a 26G syringe needle and self-healed back to a gel state.