Supplementary Information (SI) for Journal of Materials Chemistry B.

A Suturable Multilayered Fiber Scaffold Loaded with α-Ketoglutarate for Enhanced Bone Regeneration

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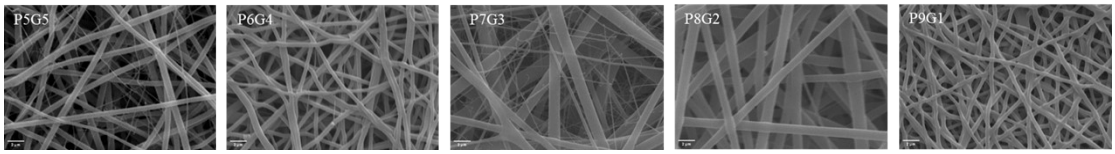

Figure S1 SEM images of different fibrous membranes.

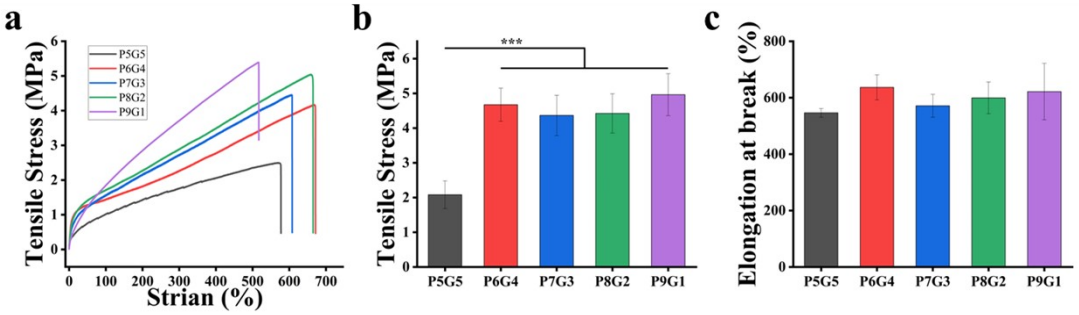

Figure S2 (a) Stress-strain curves of different fibrous membranes; (b) Tensile Stress; (c) Elongation at break.

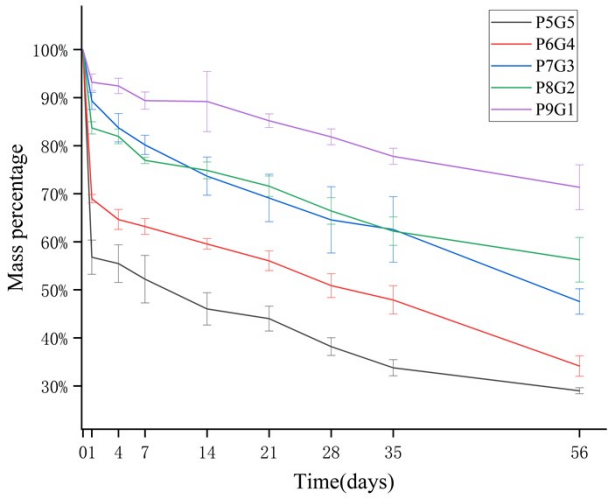

Figure S3 In Vitro degradation of different fibrous membranes.

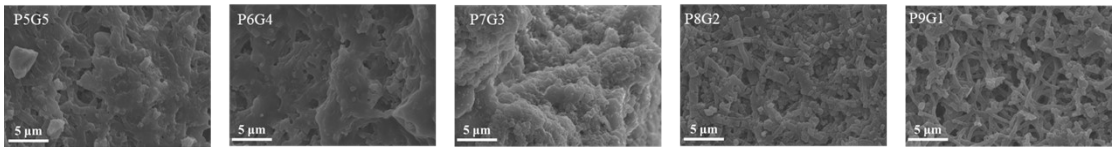

Figure S4 SEM images of different fibrous membranes after 56 days of degradation

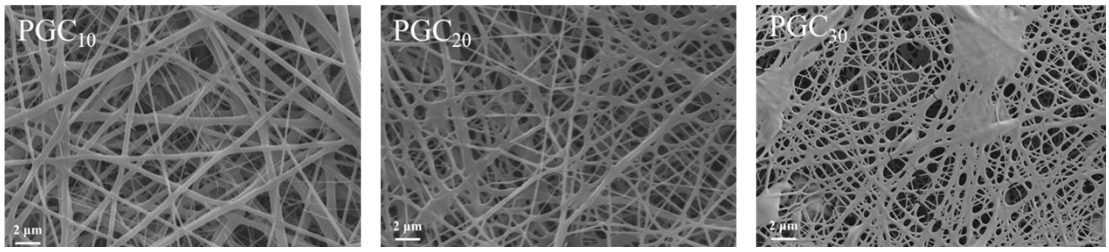

Figure S5 SEM images of the PGC_{10}、PGC_{20} and PGC_{30} fibrous membranes.

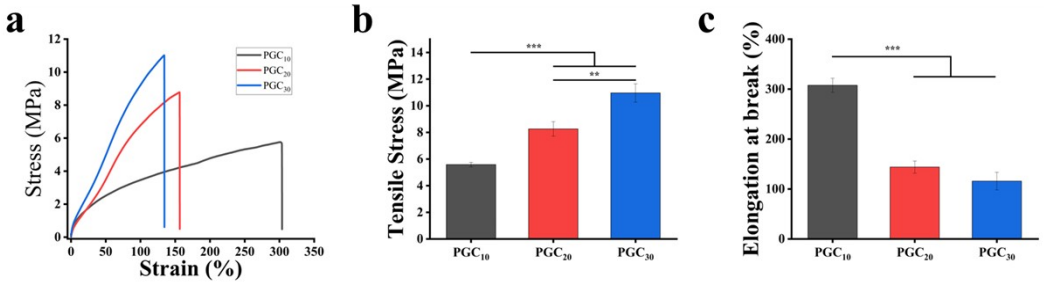

Figure S6 (a) Stress-strain curves; (b) Elastic modulus; (c) Tensile strength of CPO

loading membranes.

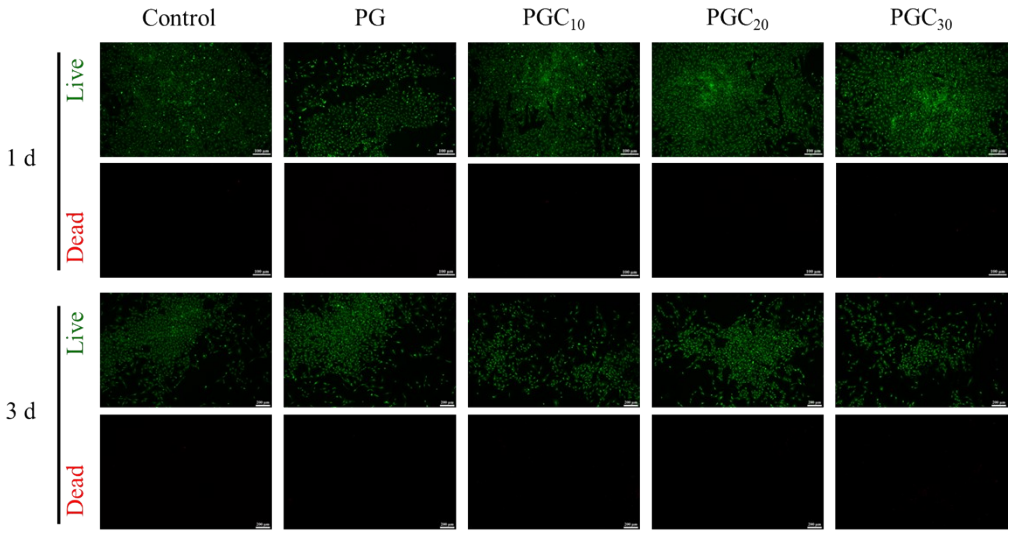

Figure S7 Live/Dead staining of BMSCs cultured in the scaffolds' extracts for 1 d and 3 d.

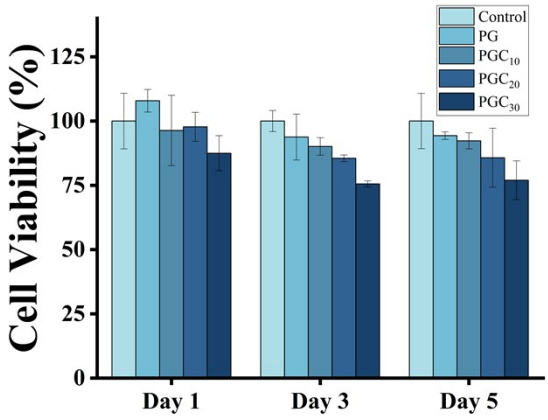

Figure S8 Cell viability of BMSCs cultured in extracts

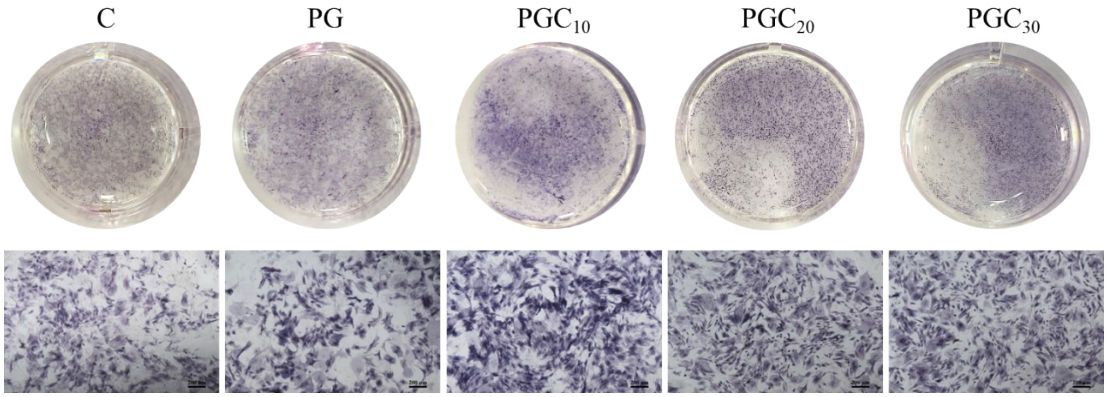

Figure S9 ALP staining in each group

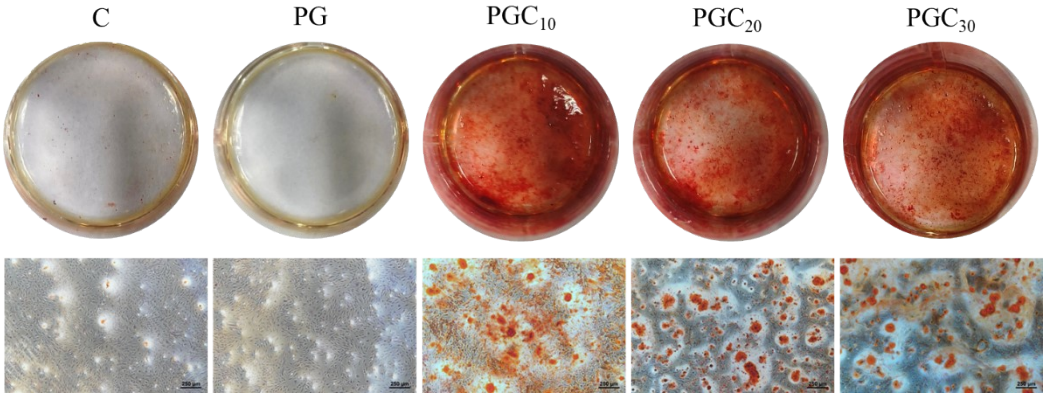

Figure S10 ARS staining in each group

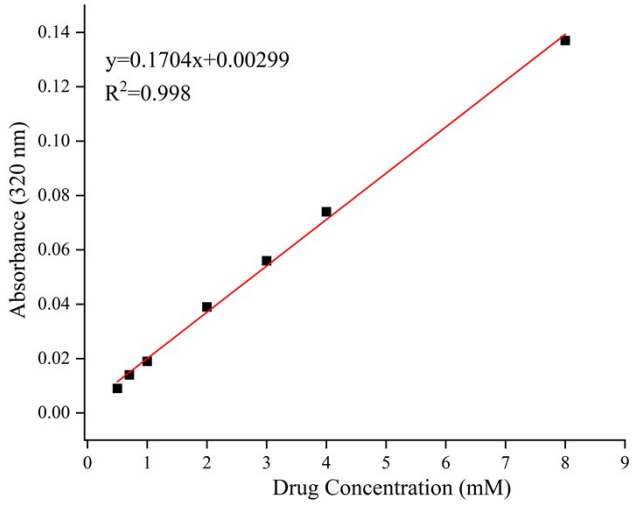

Figure S11 Standard Curve of α-Ketoglutarate

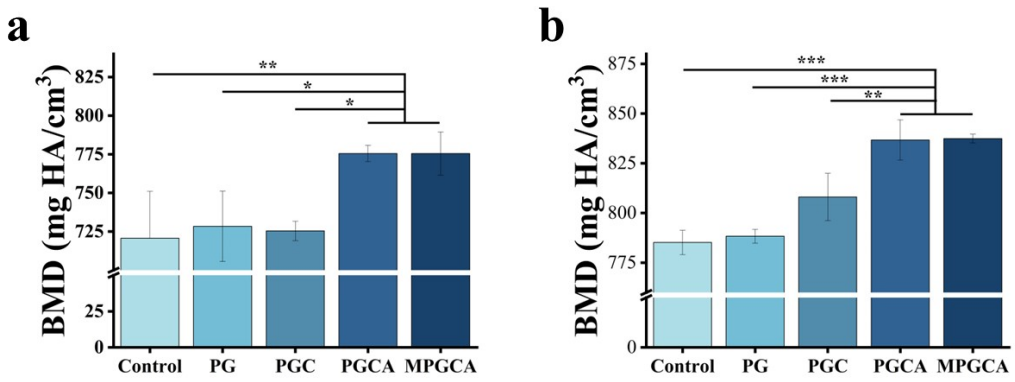

Figure S12. Quantitative analysis of bone mineral density (BMD) in the defect area at (a) 4 and (b) 8 weeks post-implantation.

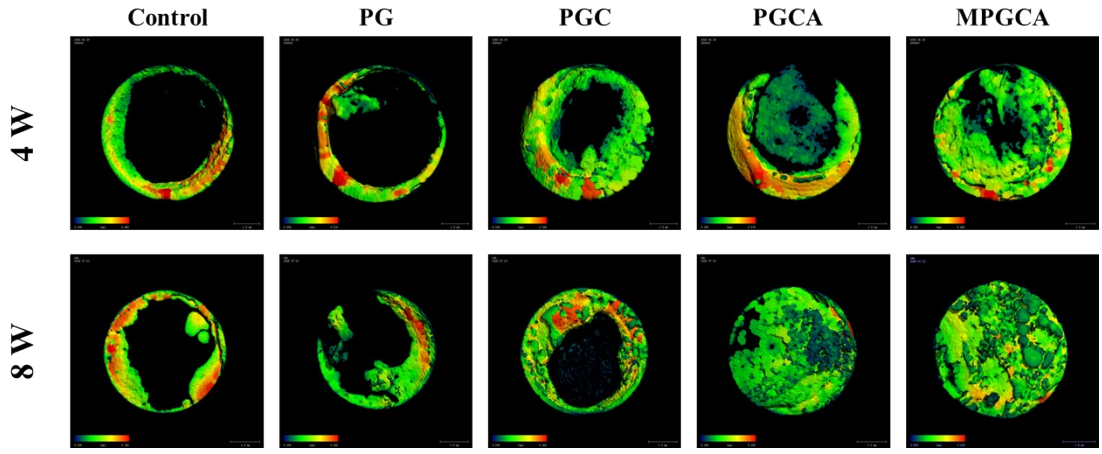

Figure S13 Pseudo-color heatmaps of trabecular bone mineral density distribution in the defect area at 4 and 8 weeks post-implantation. Red indicates high mineral density, while green indicates low mineral density.

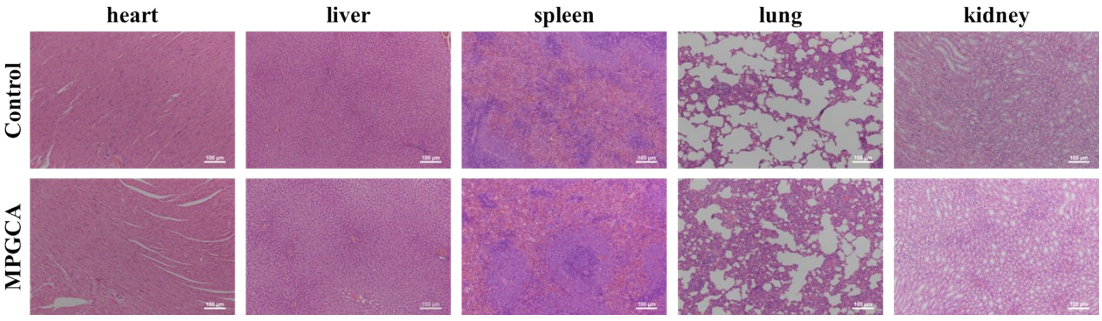

Figure S14 H&E staining of major organs (heart, liver, spleen, lungs, kidneys) from the Control and MPGCA groups at 8 weeks.

Table S1. Primer sequences for real time PCR

Gene	Forward primer	Reverse primer
SP7	GGAAAAGGAGGCACAAAGAAGC	CACTAGGCAGGCAGTCAGAAGA
Runx2	TACCCAGGCGTATTTCAGATGAT	TGTAAGTGAAGGTGGCTGGATAGT
GAPDH	CTGGAGAAACCTGCCAAGTATG	GGTGGAAGAATGGGAGTTGCT