Sustained copper-releasing adhesive hydrogel patch promotes optimized scarless tongue wound healing via antioxidative, angiogenic and antifibrotic synergy

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Supplementary Information

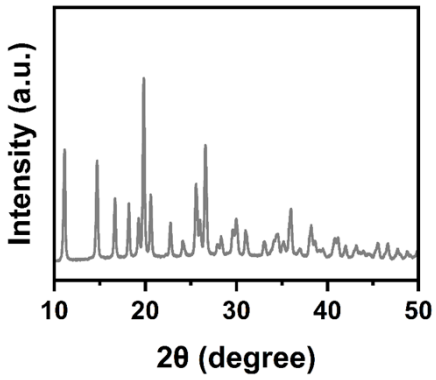

Fig. S1 X-ray diffraction (XRD) pattern of the synthesized *L*-Asp-Cu MOF.

Primer	Sequence (5’ to 3’)
human-*Vegfa*-F	AGGGCAGAATCATCACGAAGT
human-*Vegfa*-R	AGGGTCTCGATTGGATGGCA
human-*Fgf2*-F	AGTGTGTGCTAACCGTTACCT
human-*Fgf2*-R	ACTGCCCAGTTCGTTTCAGTG
rat-*Tgfβ1*-F	CCCACTGATACGCCTGAG
rat-*Tgfβ1*-R	TGAAGCGAAAGCCCTGTA
rat-*Col1a1*-F	CACGCATGAGCCGAAGCTAA
rat-*Col1a1*-R	GGAGGTCCACAAAGCTGAAC
rat-*Col3a1*-F	GGACCAGGCAATGATGGGAA
rat-*Col3a1*-R	CAGGGAAACCCATGACACCA

Table S1 Primer sequences of RT-qPCR analysis.

Fig. S2 Adhesion of CPTCu hydrogel patch to different organ surfaces.

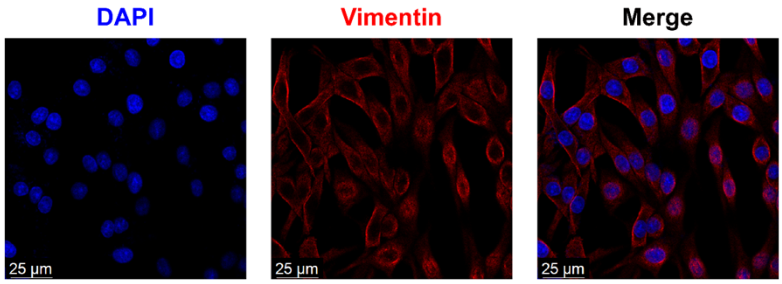

Fig. S3 Immunofluorescence staining of Vimentin in the extracted primary tongue fibroblasts.

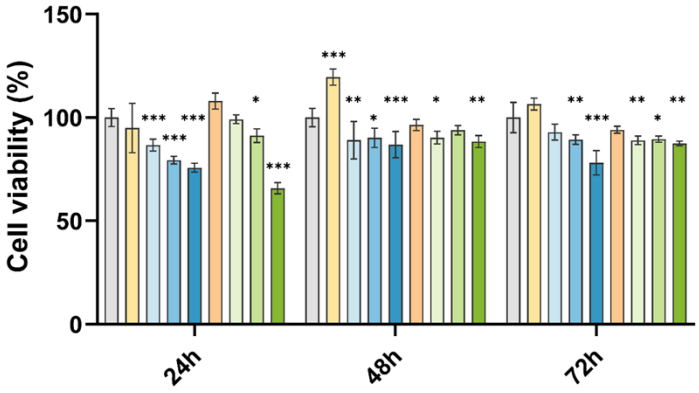

Fig. S4 Viability of tongue fibroblasts treated with CP, CPCu, CPT, CPTCu and control for 24 h, 48 h, and 72 h. n = 5 per group.

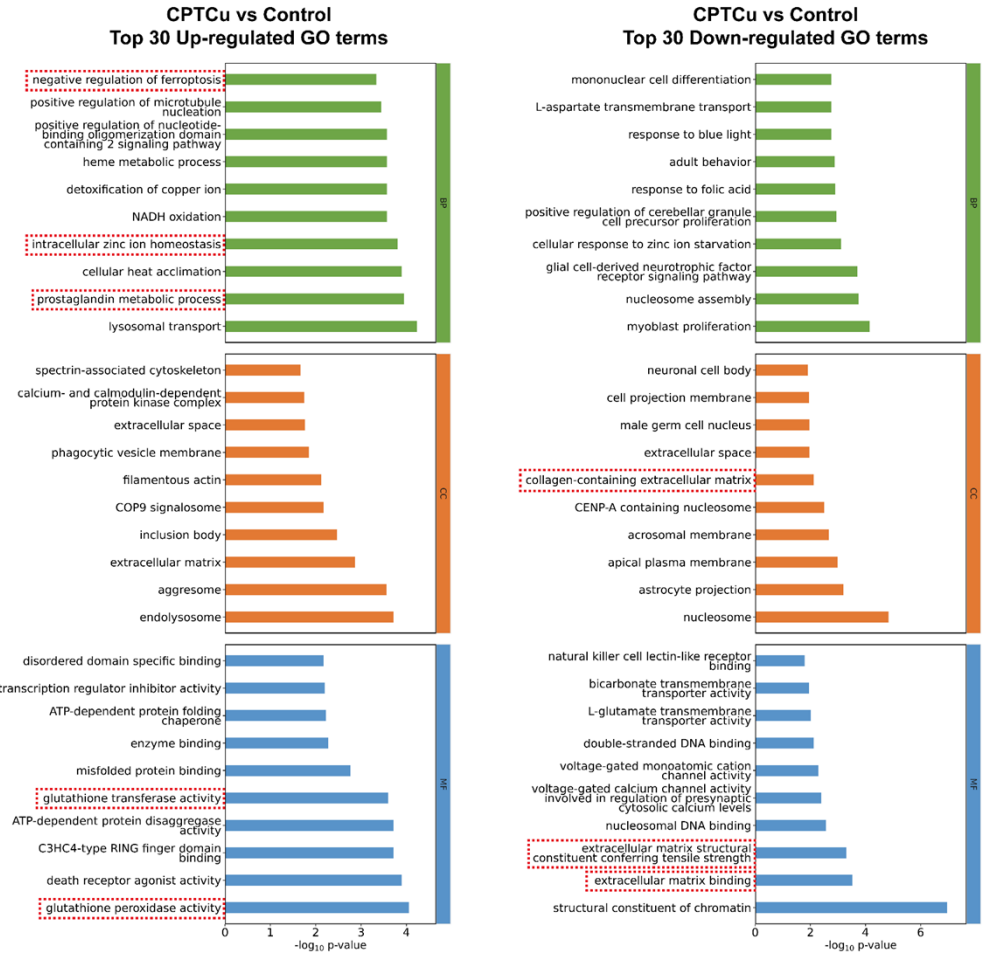

Fig. S5 The top 30 up- and down-regulated GO enrichment terms of biological process, cellular component, and molecular function in CPTCu group compared with control.

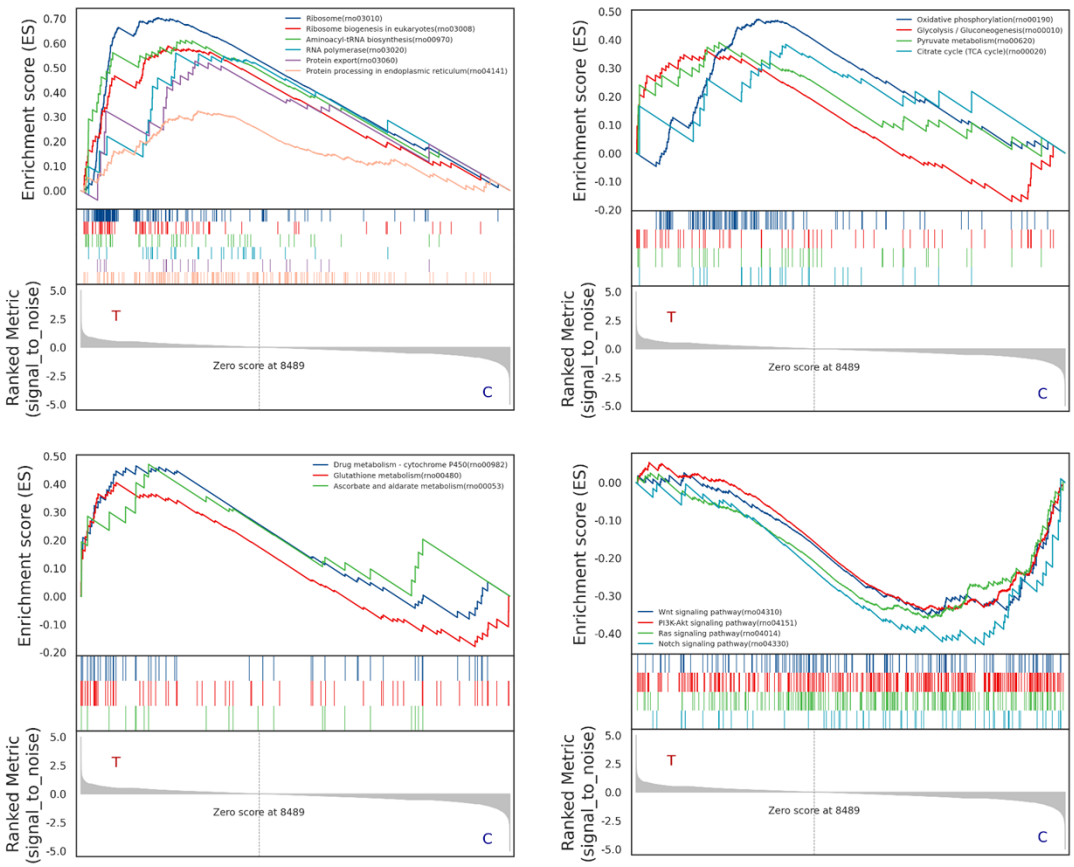

Fig. S6 GSEA analysis showing positively-enriched gene sets related to protein synthesis, energy metabolism, and antioxidant and detoxification processes, and negatively-enriched gene sets related to fibrosis in CPTCu group compared with control.

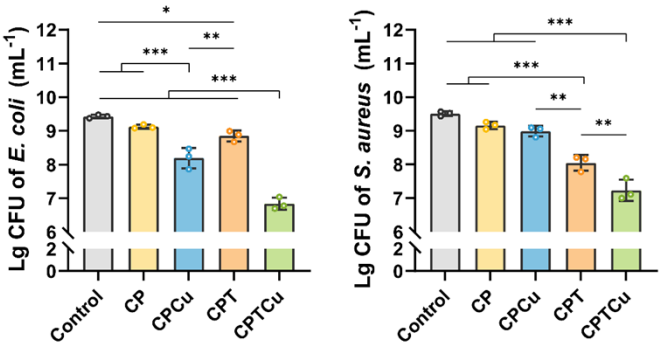

Fig. S7 Lg CFU values of *E. coli* and *S. aureus* after culturing with hydrogel extracts.

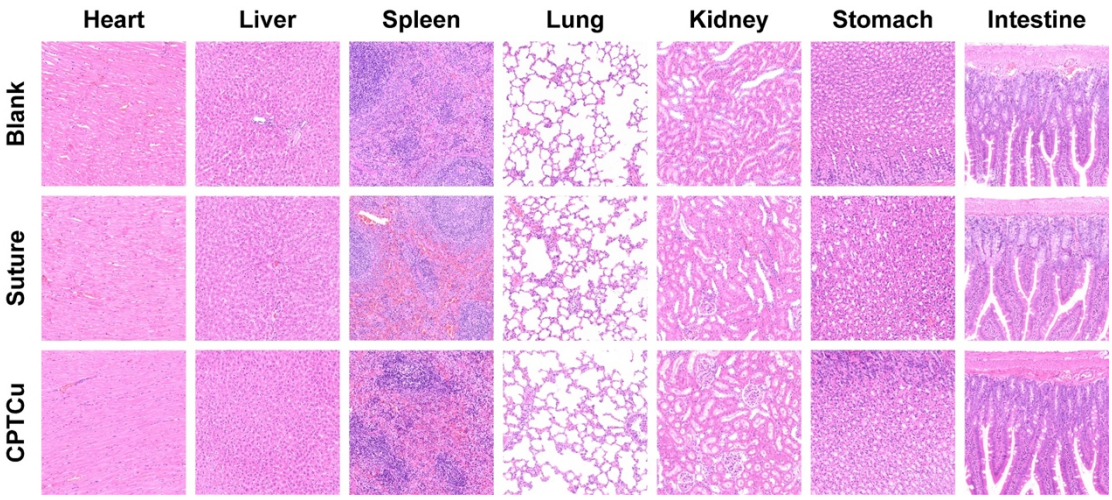

Fig. S8 H&E staining of the main organs from rats in blank, suture and CPTCu group.