

## Supporting information

### Melatonin decorated 3D-printed beta-tricalcium phosphate scaffolds promoting bone regeneration in a rat calvarial defect model

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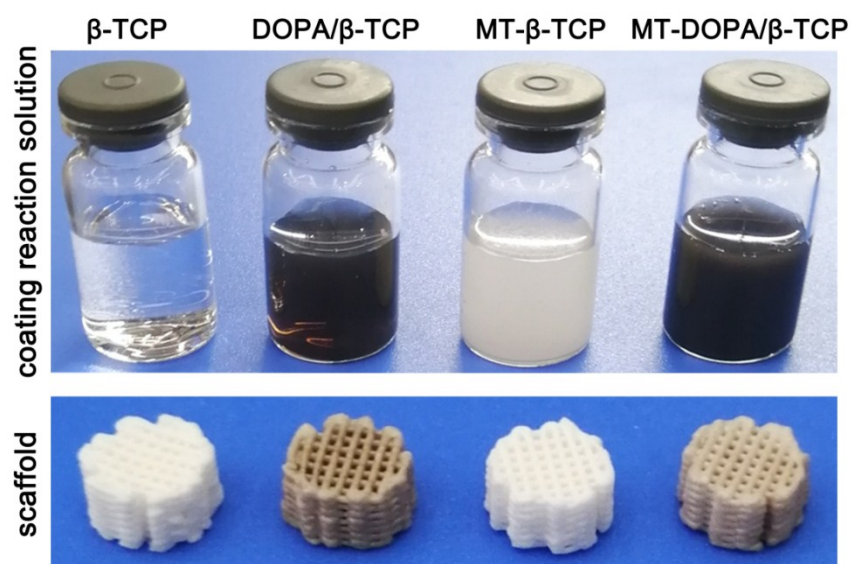
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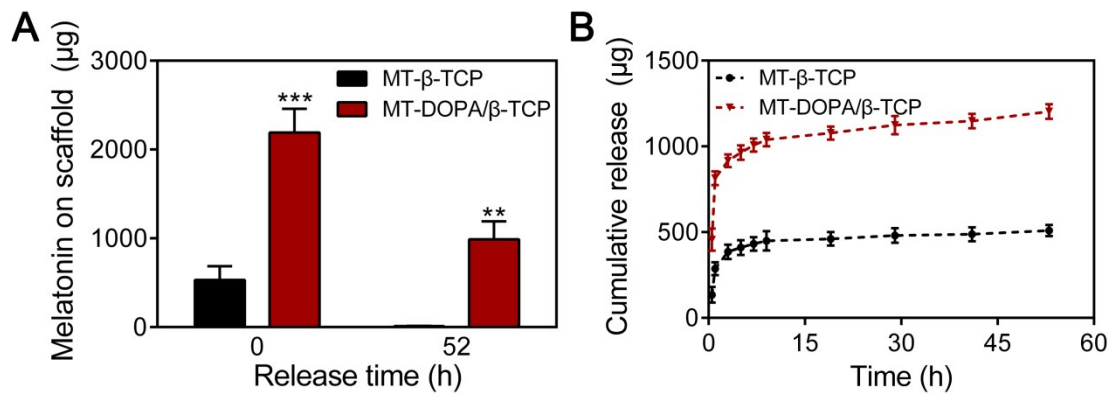
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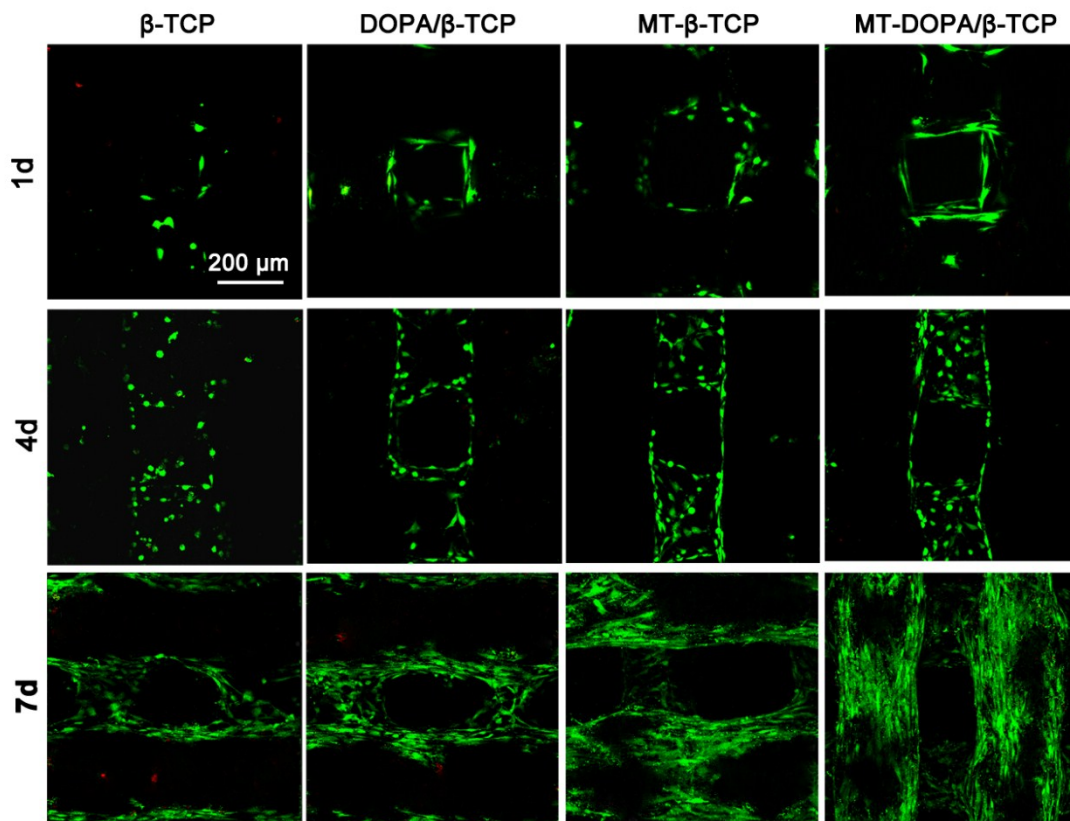
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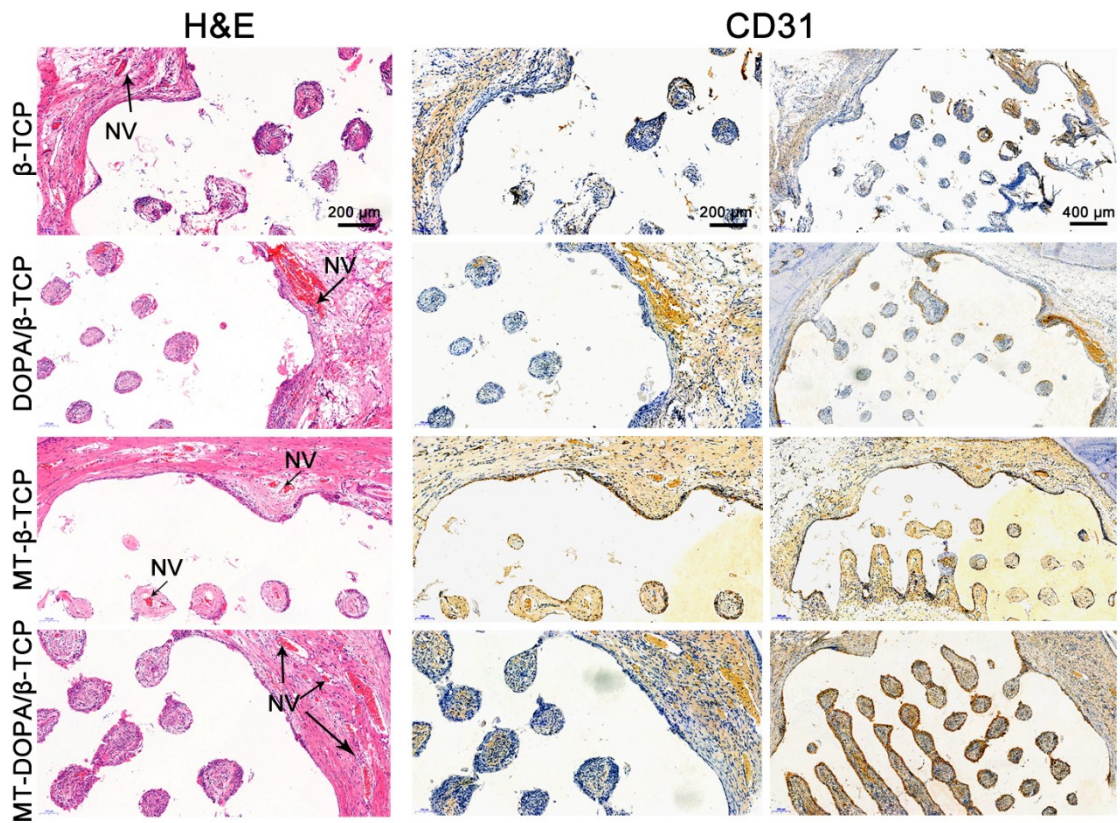
**Fig. S1** The coating solution for TCP scaffolds and the appearance of obtained scaffolds after decorated with MT and/or DOPA.



**Fig. S2** (A) HPLC quantitative analysis of the total amount of MT loaded on the scaffolds and the residual amount of melatonin on the surface of the scaffolds after 52 h release. (B) The absolute value of melatonin release from scaffolds was characterized by HPLC.



**Fig. S3** Enlarged confocal fluorescence images of mBMSCs cells on scaffolds by staining with calcein AM (live cells, green fluorescence) and PI (dead cells, red fluorescence).



**Fig. S4** H&E staining and CD31 immunohistochemical staining images of the scaffold-filled areas at week 8 after implantation. NV represents for new vessel.