

Supporting Information

Melatonin in functionalized biomimetic constructs promotes rapid tissue regeneration in Wistar albino rats

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Fig. S1. SEM images showing the surface morphology of 100/100 wt.% C/PDAGA hybrid scaffold with pore size.

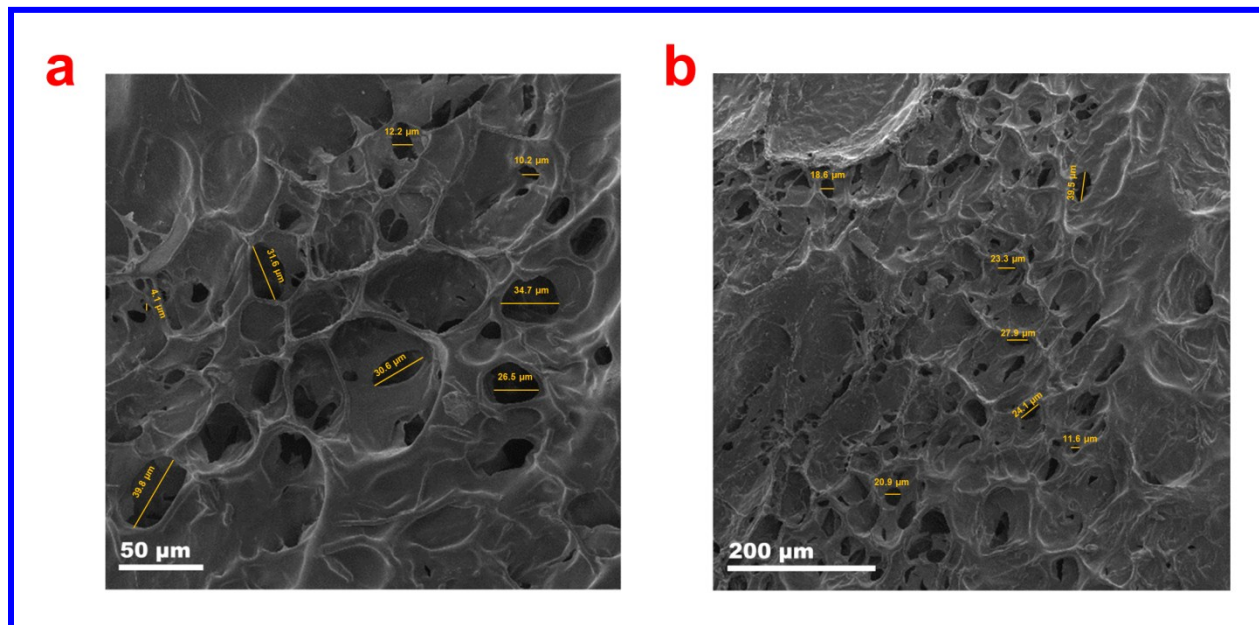


Fig. S2. Digital images of as-prepared freeze dried hybrid scaffolds showing the surface and cross section morphology.

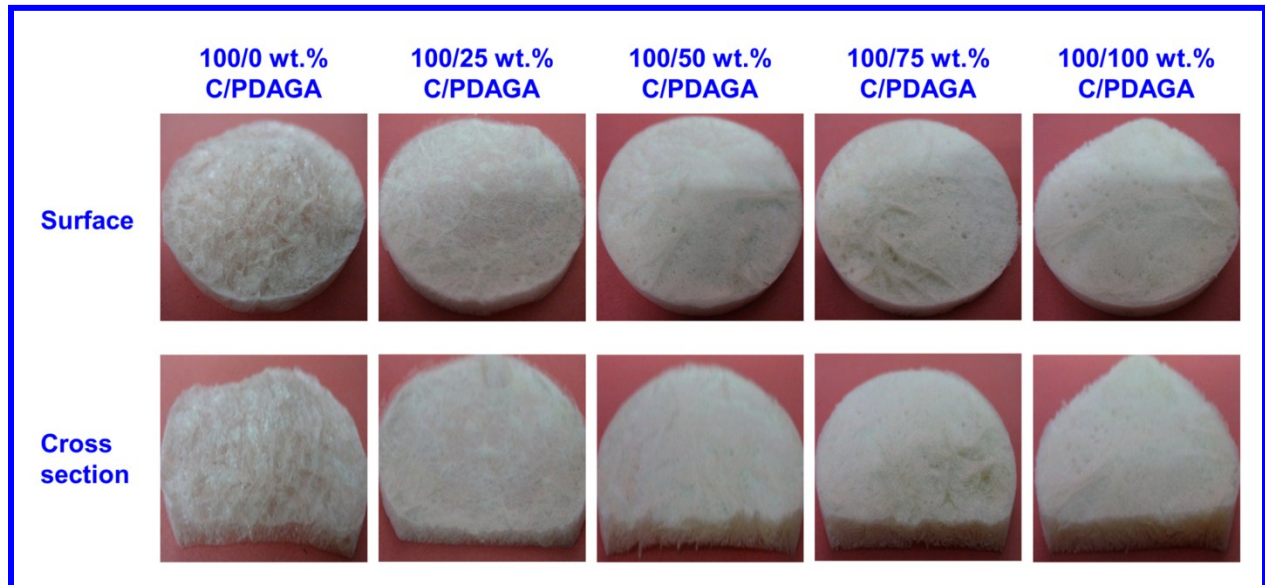


Fig. S3. BET observation of 100/0 wt.% C/PDAGA hybrid scaffold (a) Nitrogen adsorption-desorption isotherm and (b) Pore size distribution curve.

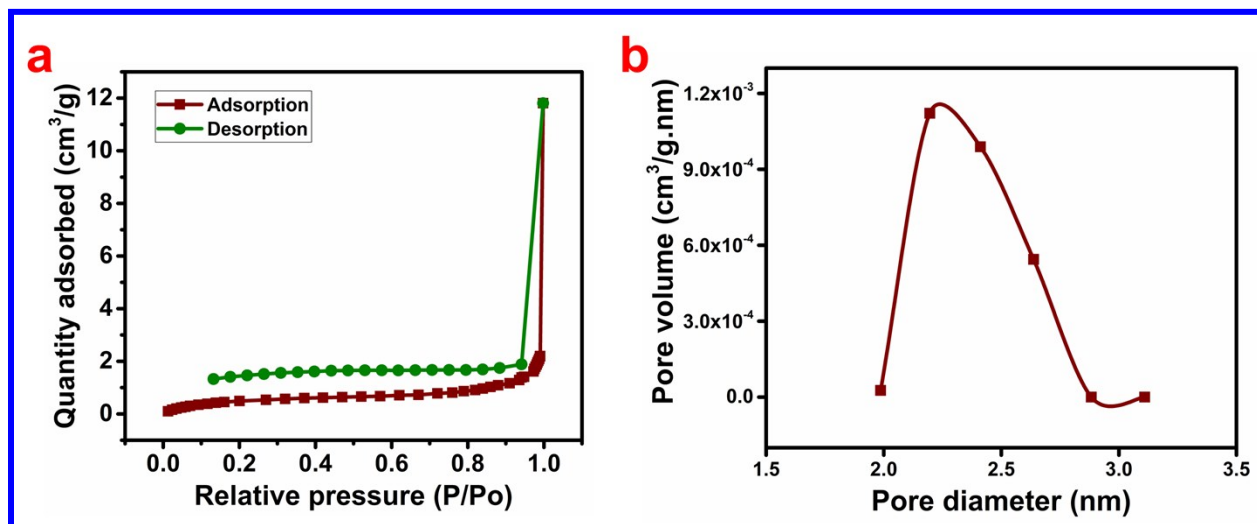


Fig. S4. Individual fluorescence microscopic images of fluorescein diacetate stained Swiss 3T6 mouse fibroblast cells on the 100/0, 100/100 wt.% C/PDAGA and 100/100 wt.% C/PDAGA loaded with melatonin hybrid scaffolds at 24 h culture period.

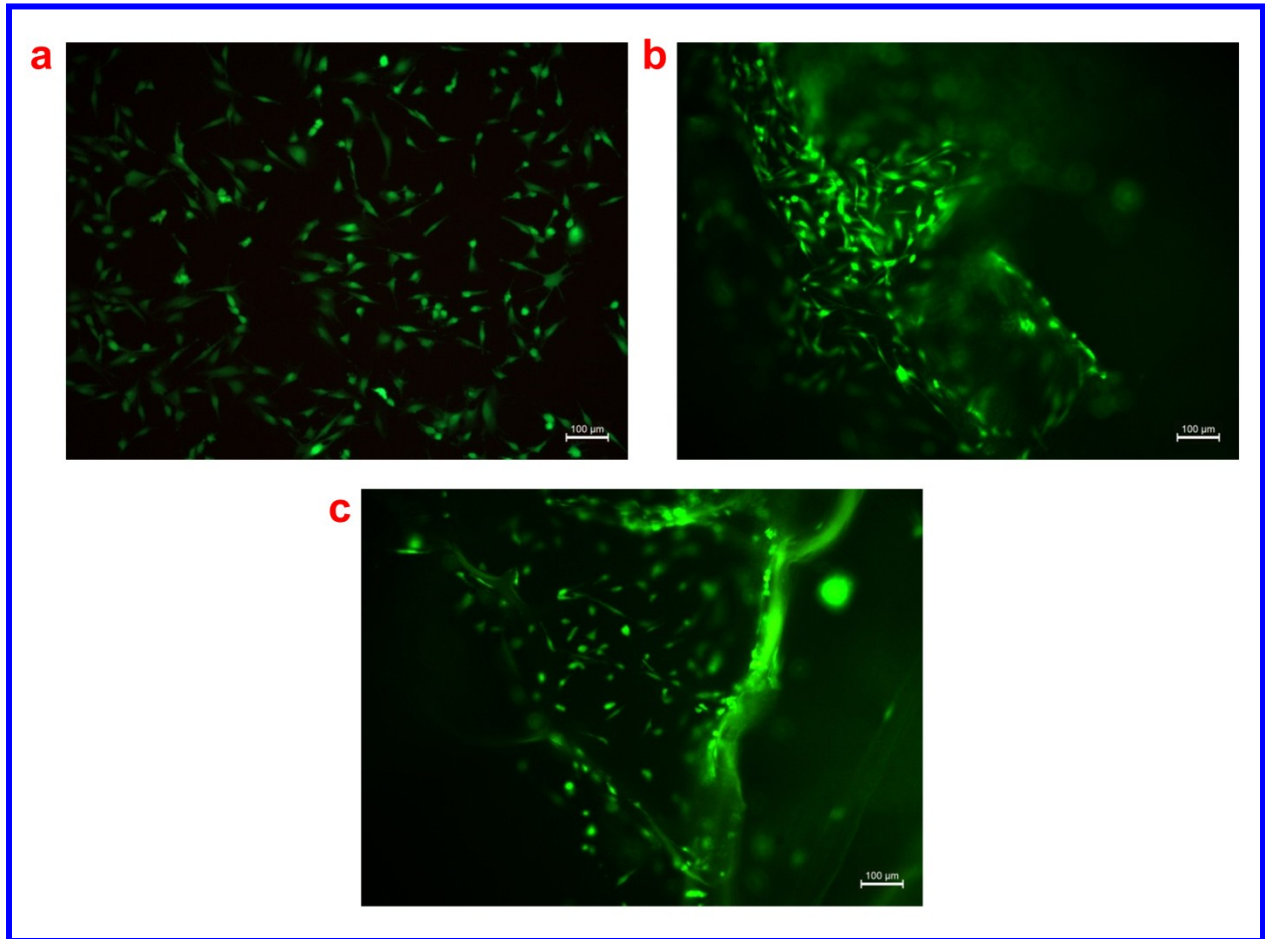


Fig. S5. Individual fluorescence microscopic images of fluorescein diacetate stained Swiss 3T6 mouse fibroblast cells on the 100/0, 100/100 wt.% C/PDAGA and 100/100 wt.% C/PDAGA loaded with melatonin hybrid scaffolds at 72 h culture period.

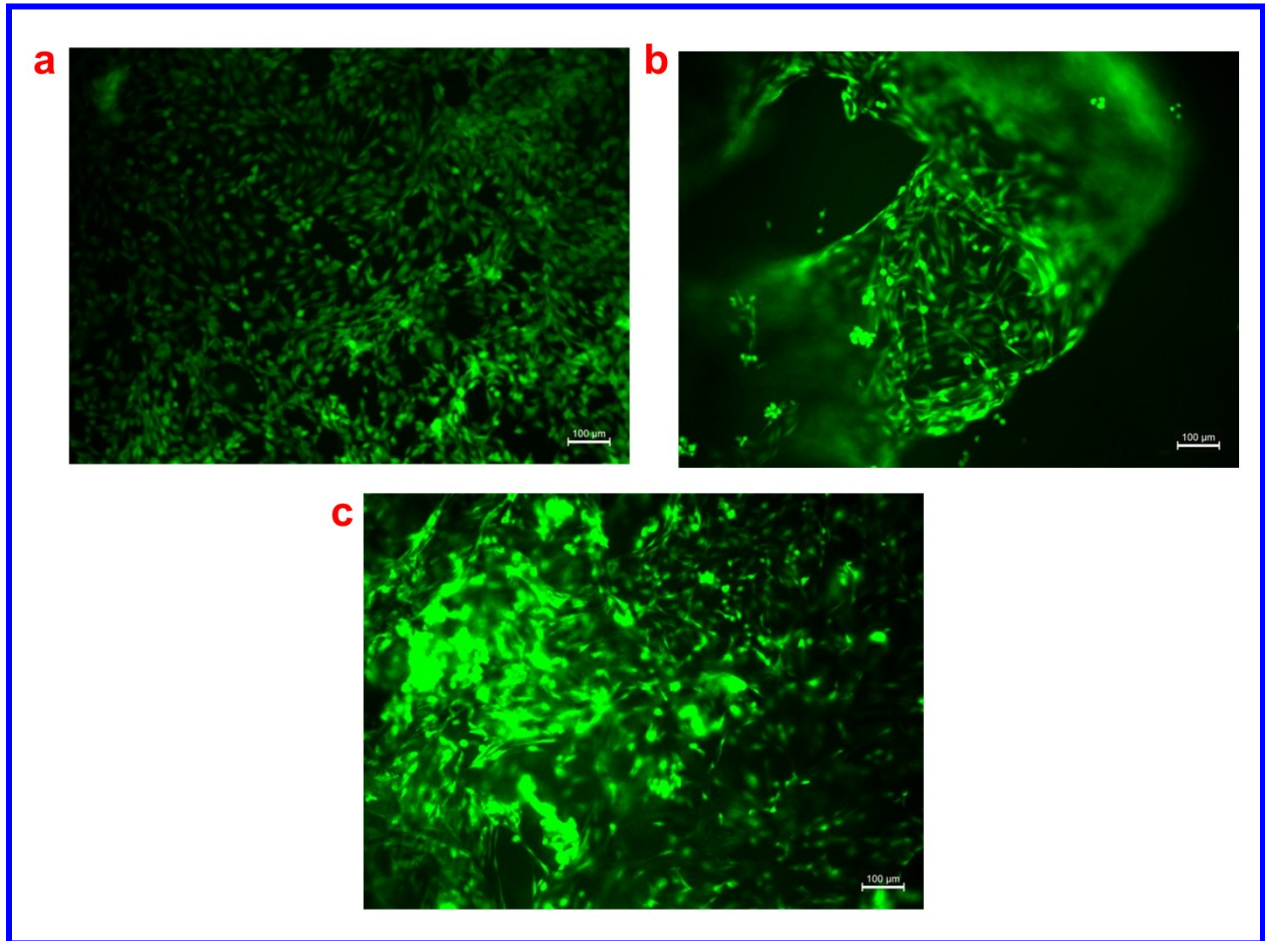


Fig. S6. Individual photomicrographs of control group after haematoxylin and eosin staining at (a) 4th, (b) 8th and (c) 12th day of granulation tissue. F and M refer to fibroblasts and macrophages, respectively. Schematic shows the structural morphology of fibroblasts, inflammatory cells and blood vessels.

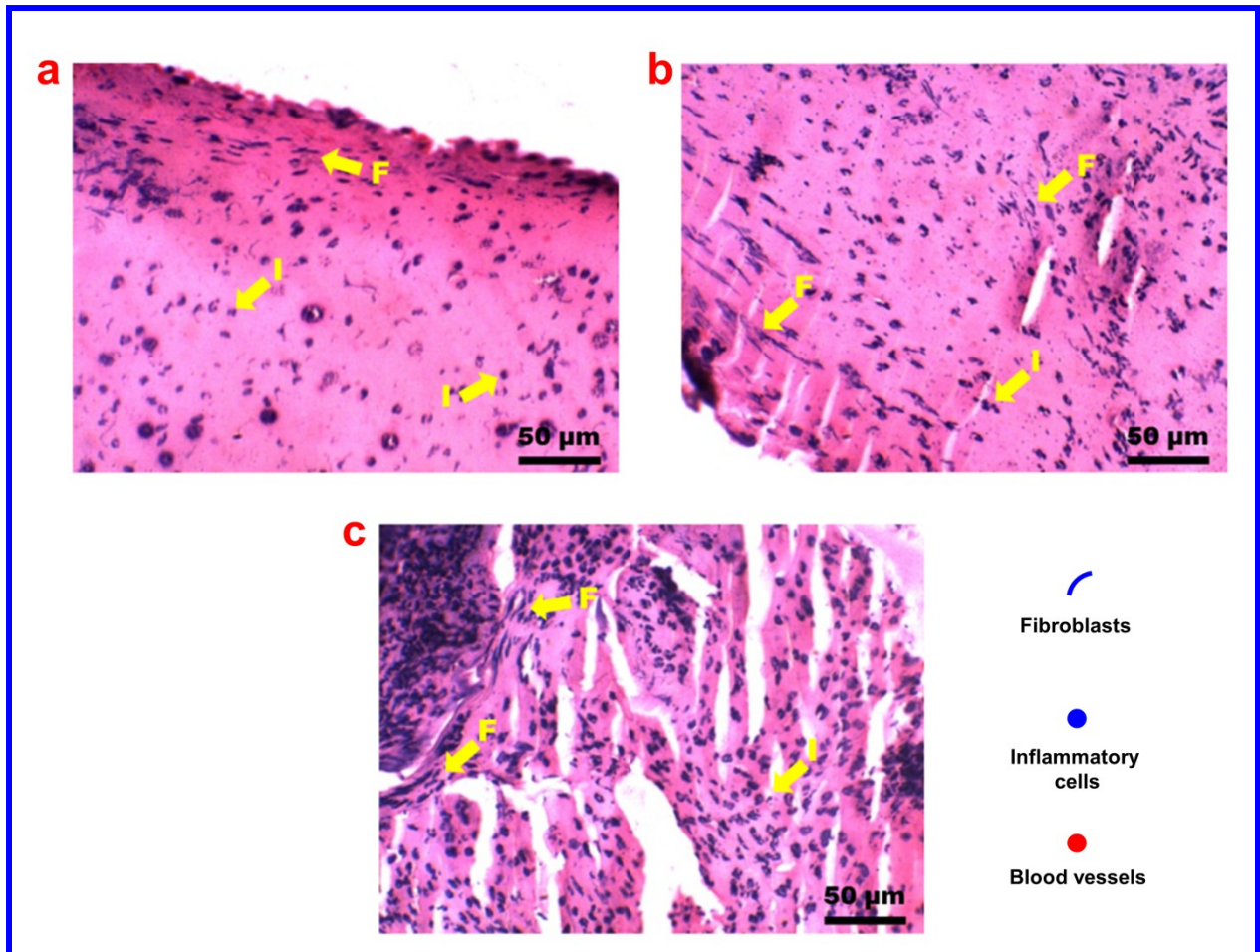


Fig. S7. Individual photomicrographs of 100/0 wt.% C/PDAGA hybrid scaffold treated group after haematoxylin and eosin staining at (a) 4th, (b) 8th and (c) 12th day of granulation tissue. F and M refer to fibroblasts and macrophages, respectively. Schematic shows the structural morphology of fibroblasts, inflammatory cells and blood vessels.

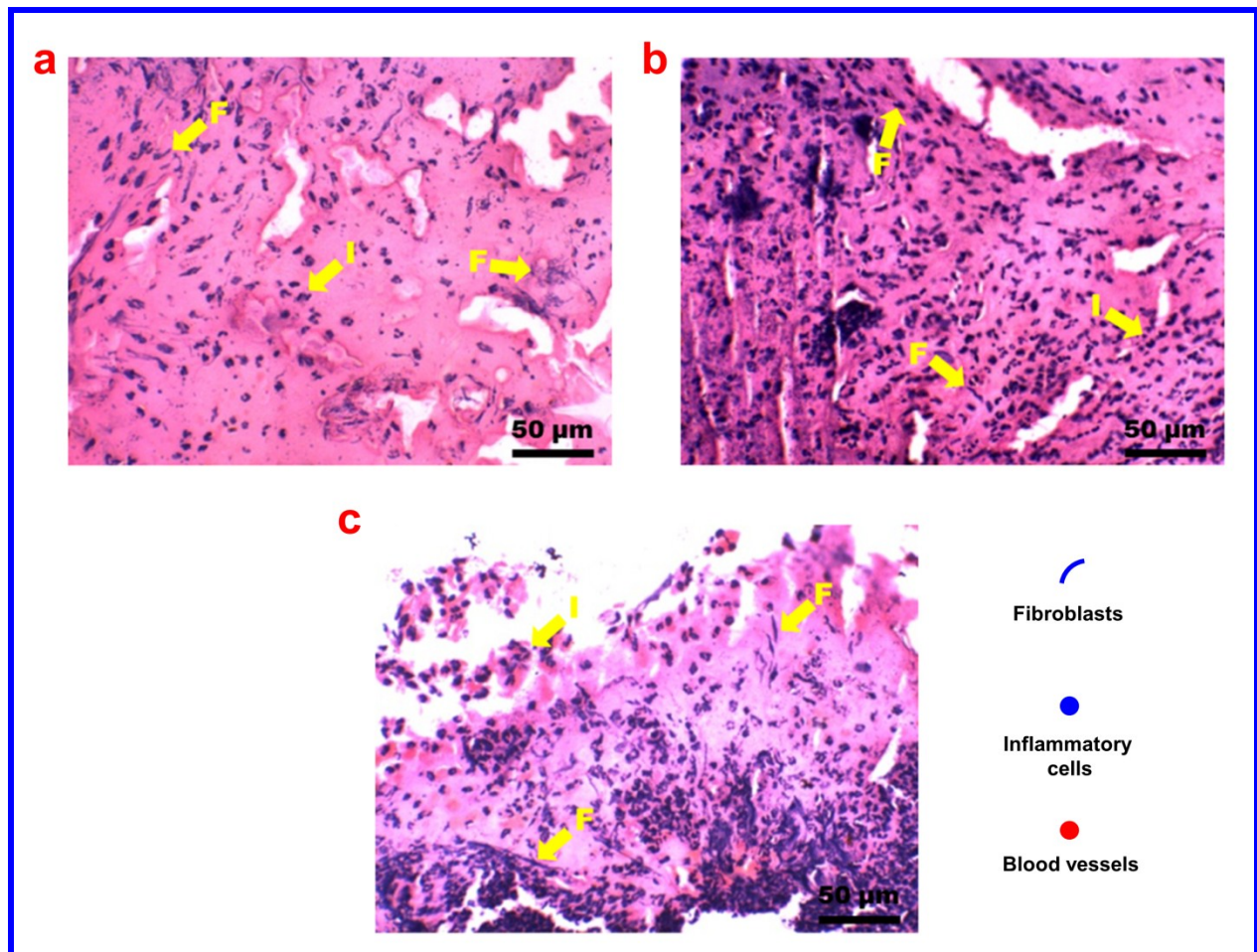


Fig. S8. Individual photomicrographs of 100/100 wt.% C/PDAGA hybrid scaffold treated group after haematoxylin and eosin staining at (a) 4th, (b) 8th and (c) 12th day of granulation tissue. F and M refer to fibroblasts and macrophages, respectively. Schematic shows the structural morphology of fibroblasts, inflammatory cells and blood vessels.

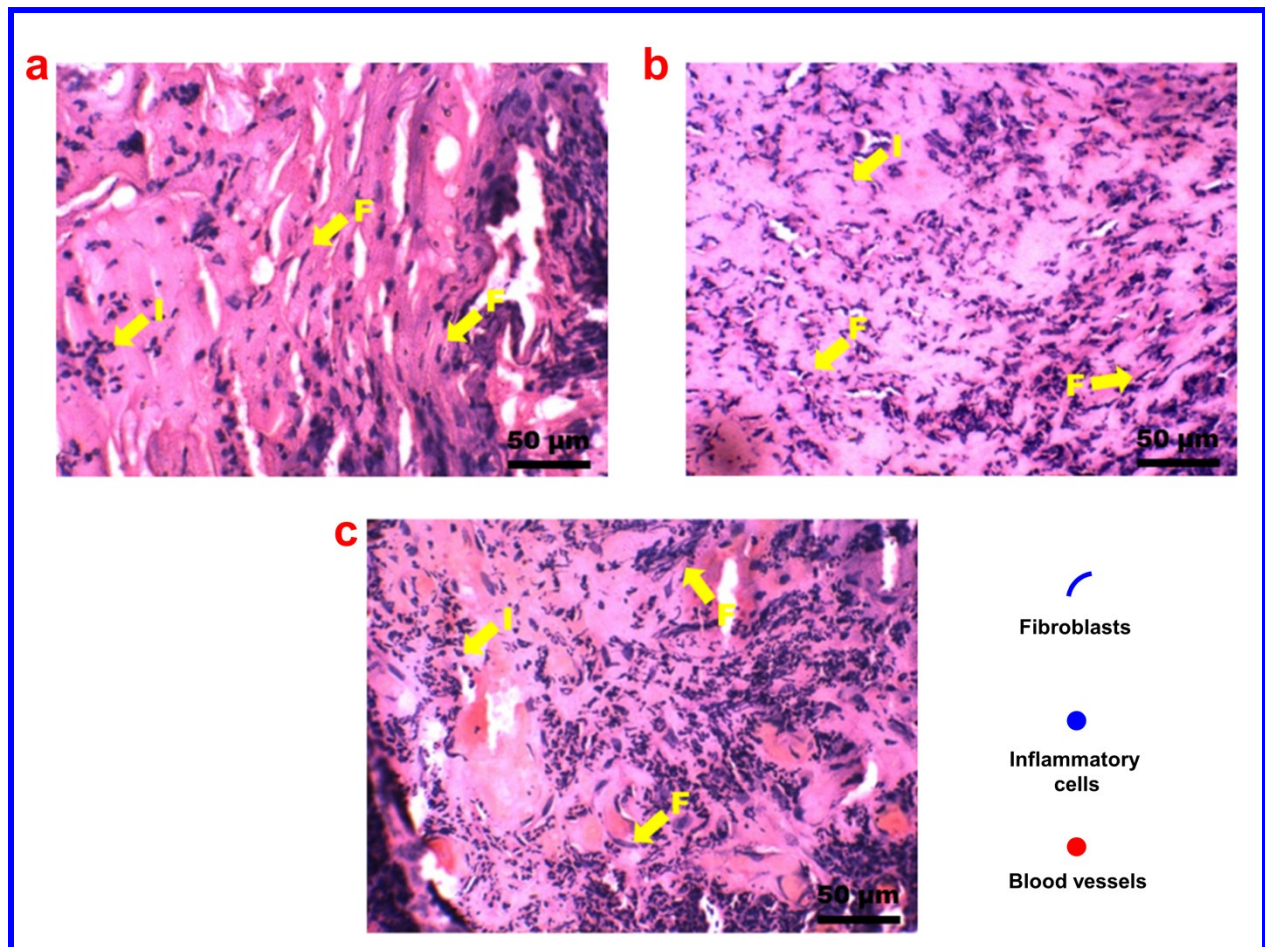


Fig. S9. Individual photomicrographs of 100/100 wt.% C/PDAGA loaded with melatonin hybrid scaffold treated group after haematoxylin and eosin staining at (a) 4th, (b) 8th and (c) 12th day of granulation tissue. F, M and BV refer to fibroblasts, macrophages and blood vessels, respectively. Schematic shows the structural morphology of fibroblasts, inflammatory cells and blood vessels.

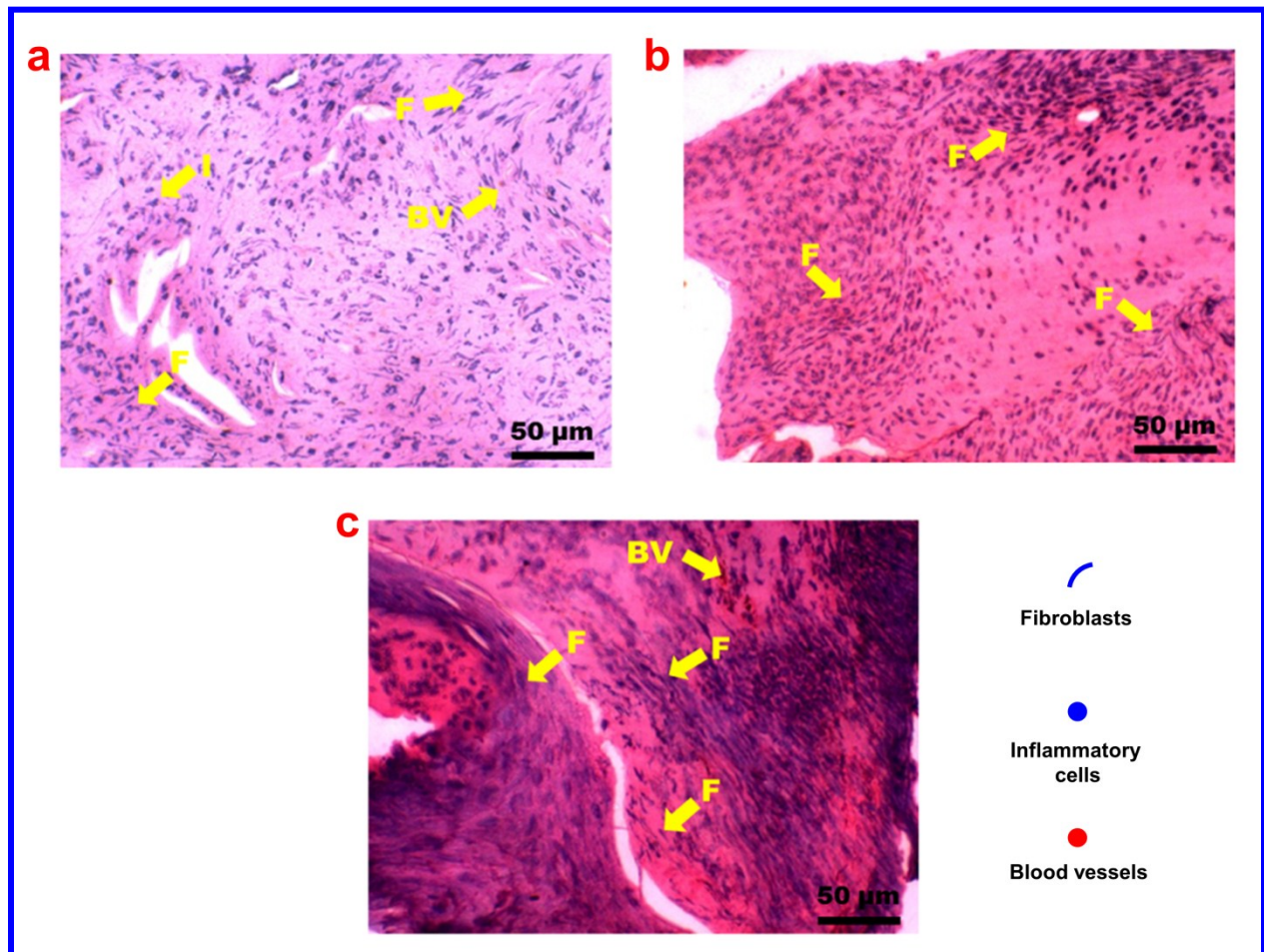


Fig. S10. Individual photomicrographs of control group after Masson's trichrome staining at (a) 4th, (b) 8th and (c) 12th day of granulation tissue. Blue colour stained region in the images indicates the collagen formation.

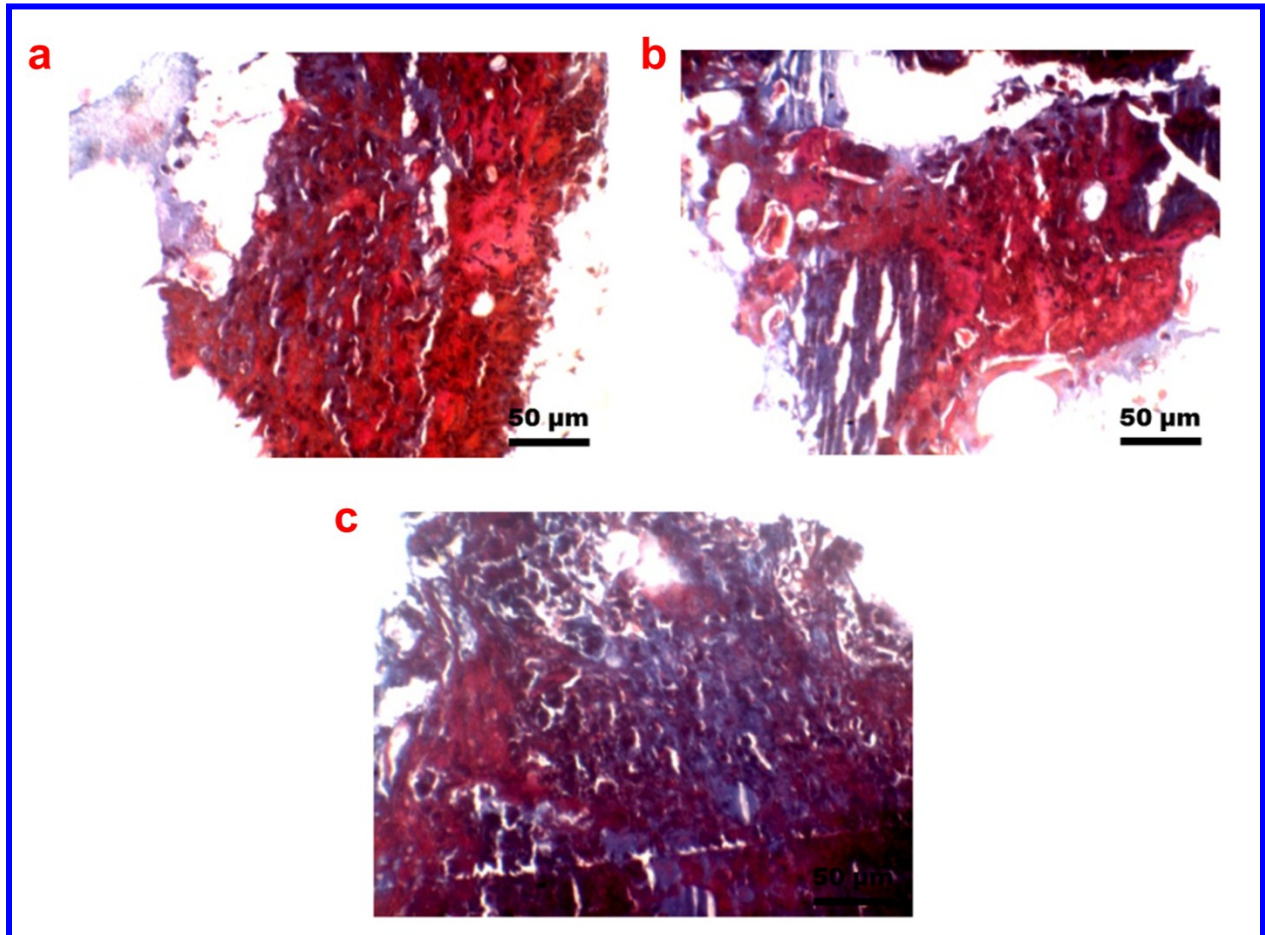


Fig. S11. Individual photomicrographs of 100/0 wt.% C/PDAGA hybrid scaffold treated group after Masson's trichrome staining at (a) 4th, (b) 8th and (c) 12th day of granulation tissue. Blue colour stained region in the images indicates the collagen formation.

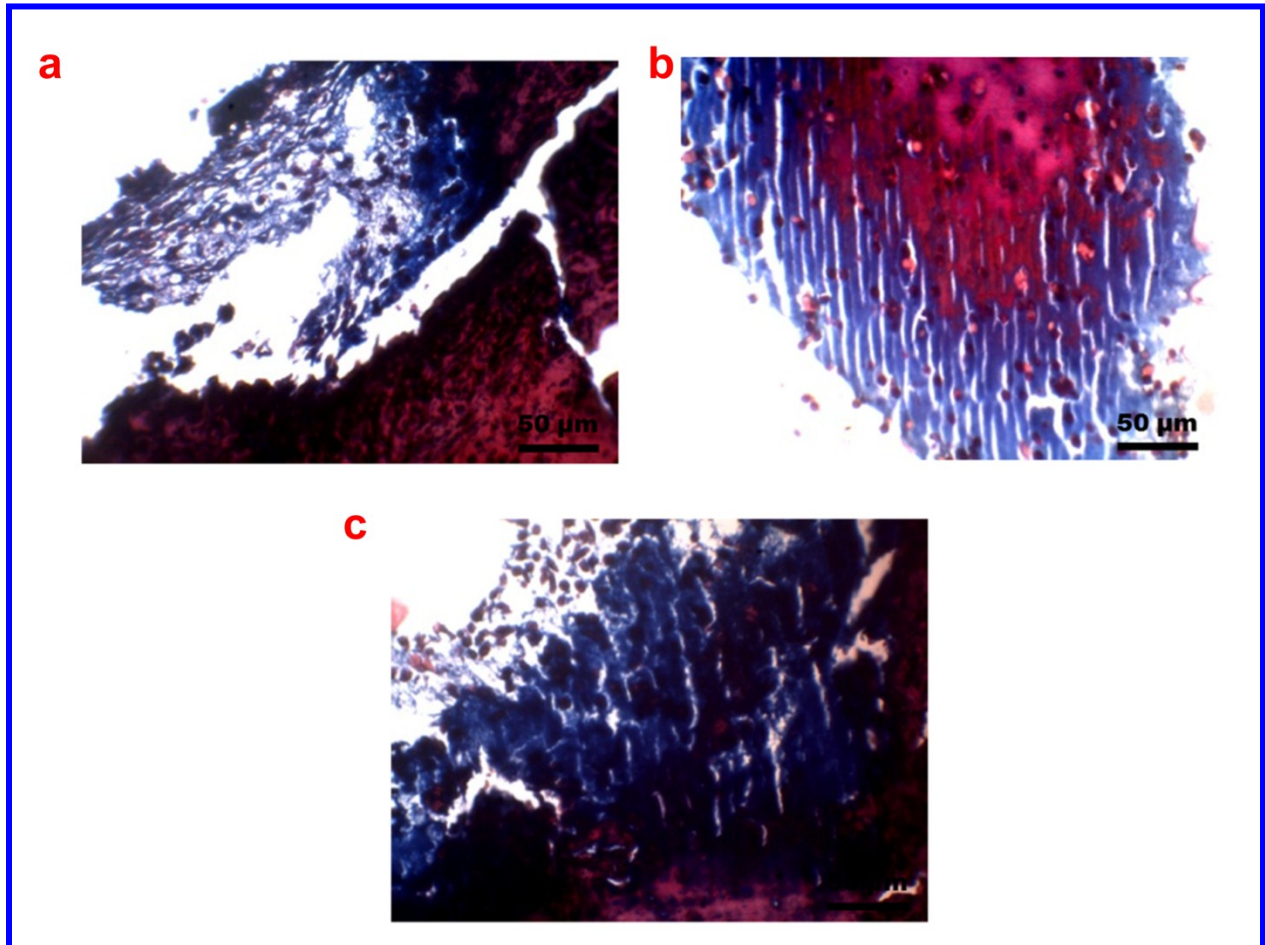


Fig. S12. Individual photomicrographs of 100/100 wt.% C/PDAGA hybrid scaffold treated group after Masson's trichrome staining at (a) 4th, (b) 8th and (c) 12th day of granulation tissue. Blue colour stained region in the images indicates the collagen formation.

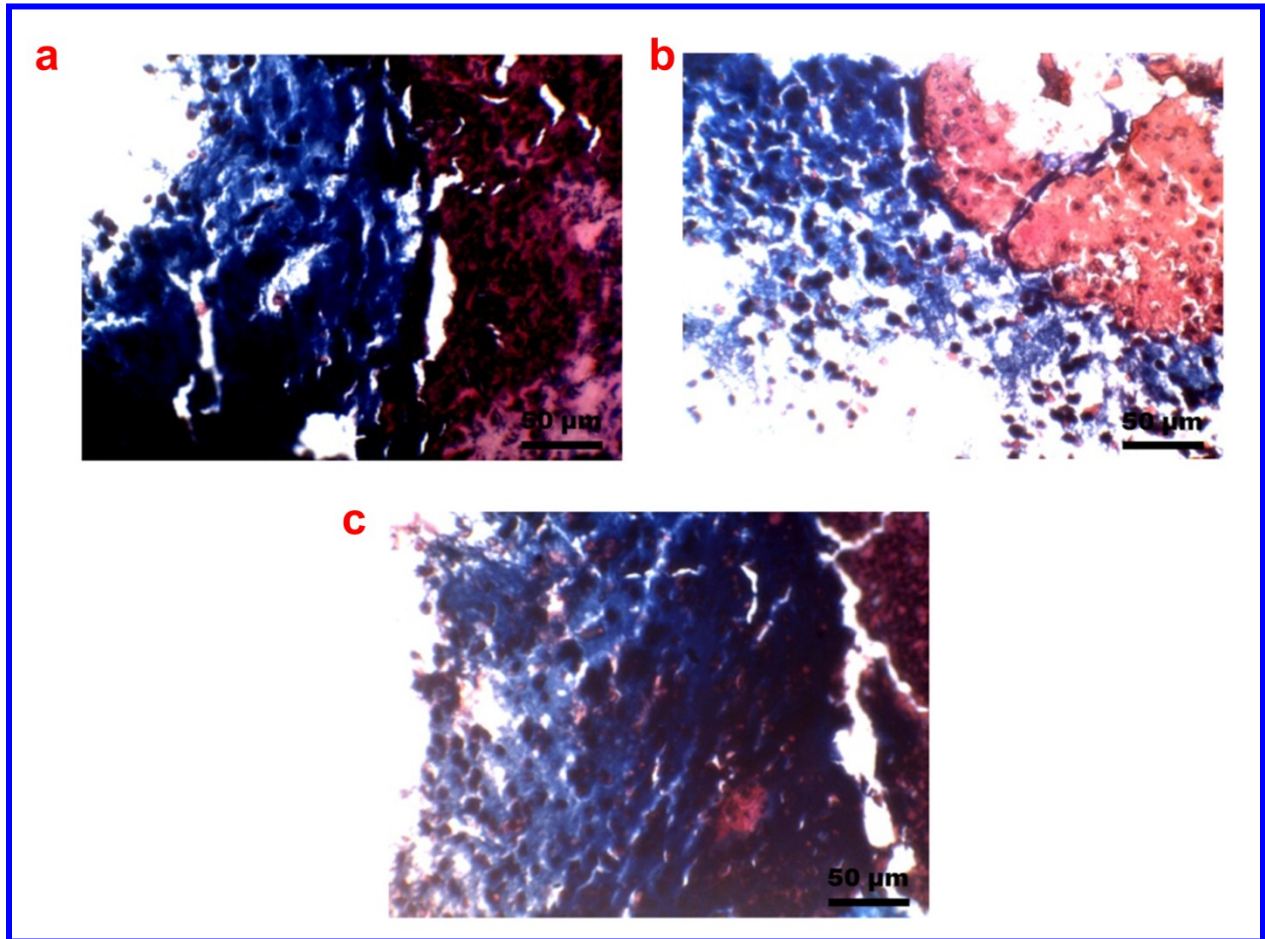


Fig. S13. Individual photomicrographs of 100/100 wt.% C/PDAGA loaded with melatonin hybrid scaffold treated group after Masson's trichrome staining at (a) 4th, (b) 8th and (c) 12th day of granulation tissue. Blue colour stained region in the images indicates the collagen formation.

