

## Supplementary Information

### **Micropatterned coculture of cardiac myocytes on fibrous scaffolds for predictive screening of drug cardiotoxicities**

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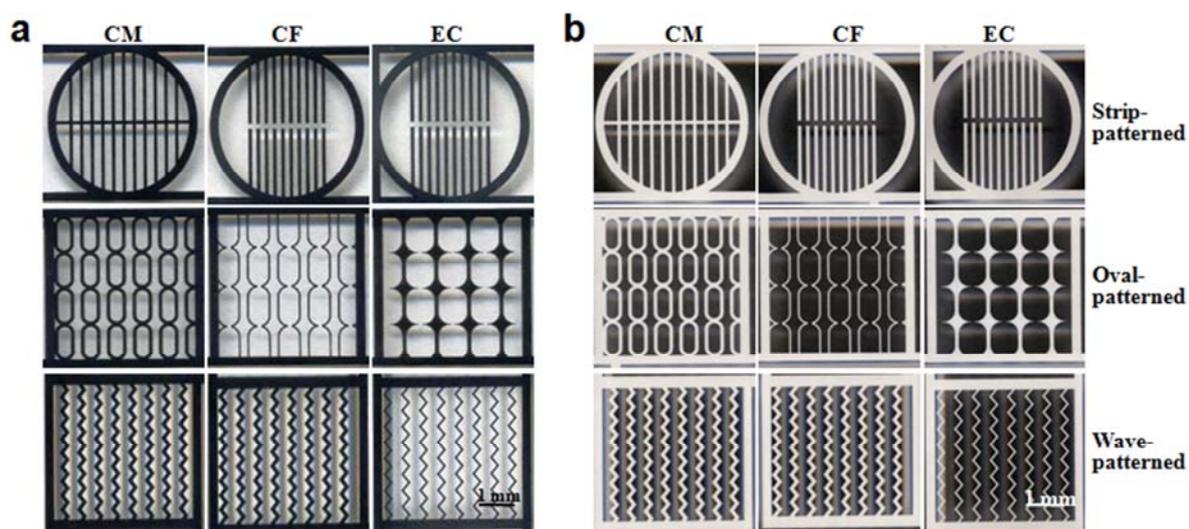
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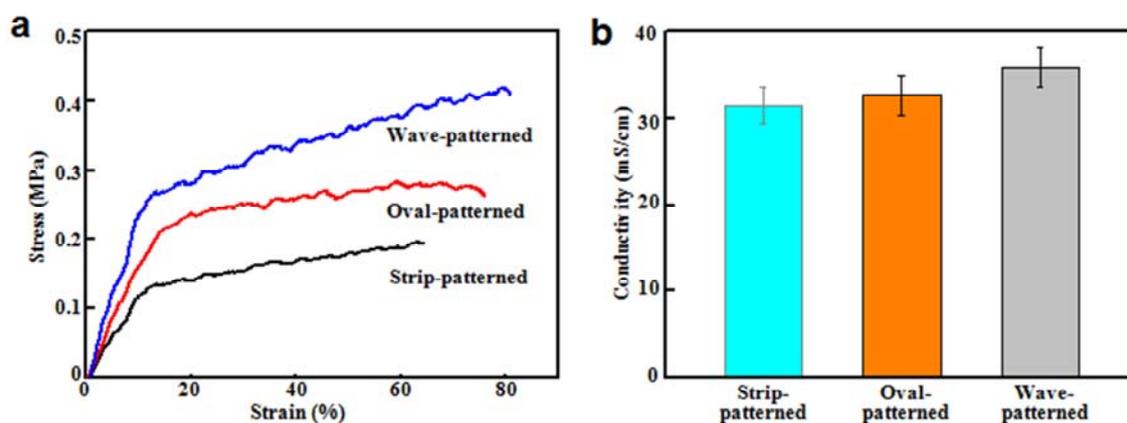
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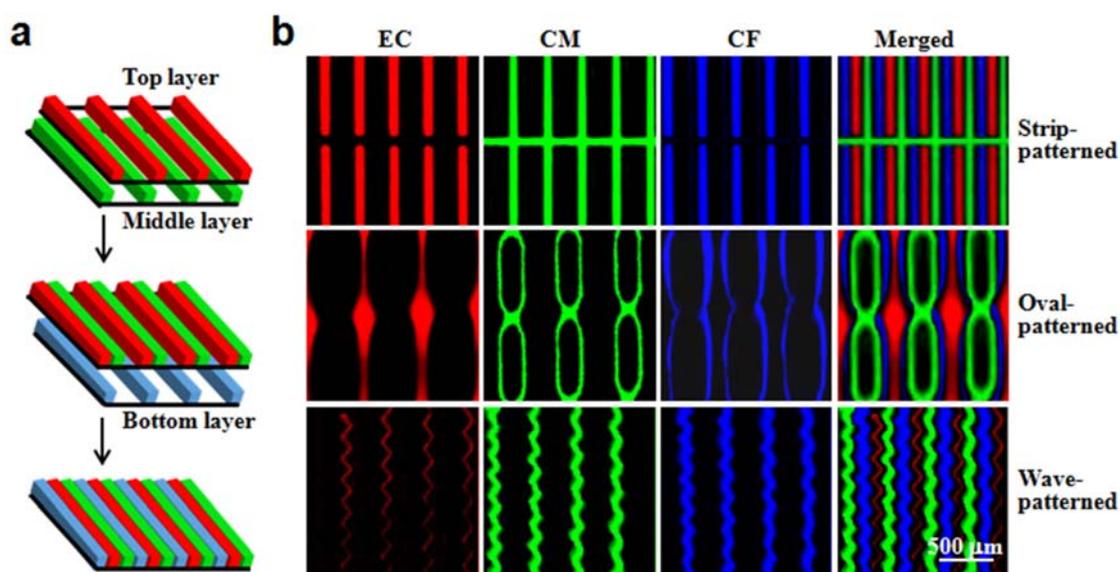
E-mail Address: [xhli@swjtu.edu.cn](mailto:xhli@swjtu.edu.cn)



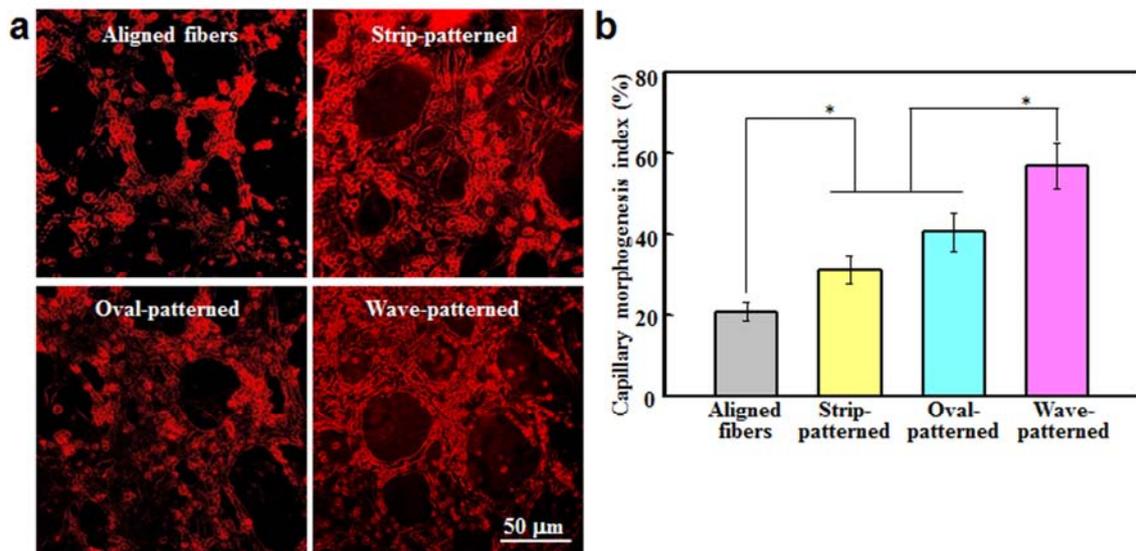
**Fig. S1** (a) Digital images of photomasks printed by an E-beam lithography system and (b) micropatterned collectors for preparing strip-, oval- and wave-patterned electrospun mats to load CMs, CFs and ECs.



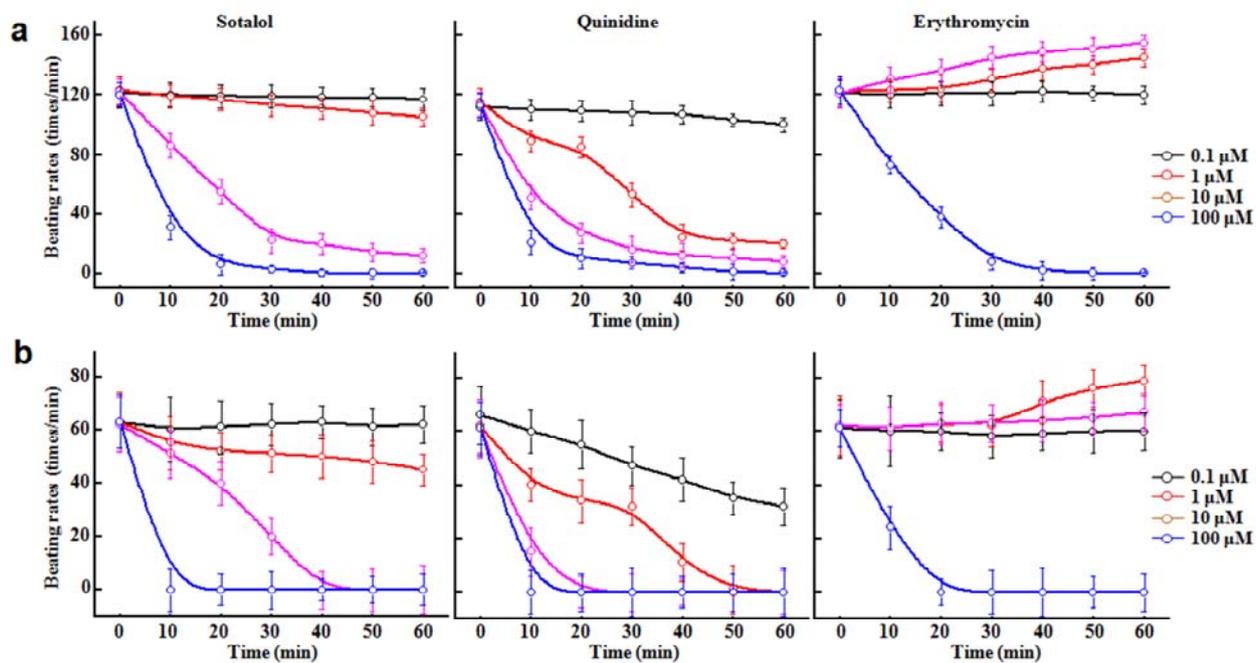
**Fig. S2** (a) Stress-strain curves and (b) conductivities of strip-, oval- and wave-patterned fibrous mats for CM loadings ( $n = 3$ ).



**Fig. S3** (a) Schematic drawing of the precisely stacking of micropatterned fibrous mats for coculture of CMs with ECs and ECs. (b) CLSM images of strip-, oval- and wave-patterned fibrous mats labelled with FITC (green), DAPI (blue), and rhodamine B (red) for loadings of CMs, CFs and ECs, respectively, and the merged images of precisely stacked micropatterned fibrous mats.



**Fig. S4** (a) Typical CLSM images of Matrigel-induced capillary morphogenesis *via* CM-DiI staining of ECs after coculture on strip-, oval- and wave-patterned fibrous mats and culture on aligned fibers for 15 day. (b) CMI of ECs after micropatterned coculture and cultured alone, defined as the percentage of the areas covered by CM-DiI-positive ECs compared with the top surface area of the Matrigel layer (n = 3; \* p < 0.05).



**Fig. S5** (a) Beating rate changes of CMs cocultured on wave-patterned fibrous mats and (b) CMs cultured alone on aligned fibers for 7 days after treatment with sotalol, quinidine and erythromycin for different time periods (n = 5).