

Supplementary file

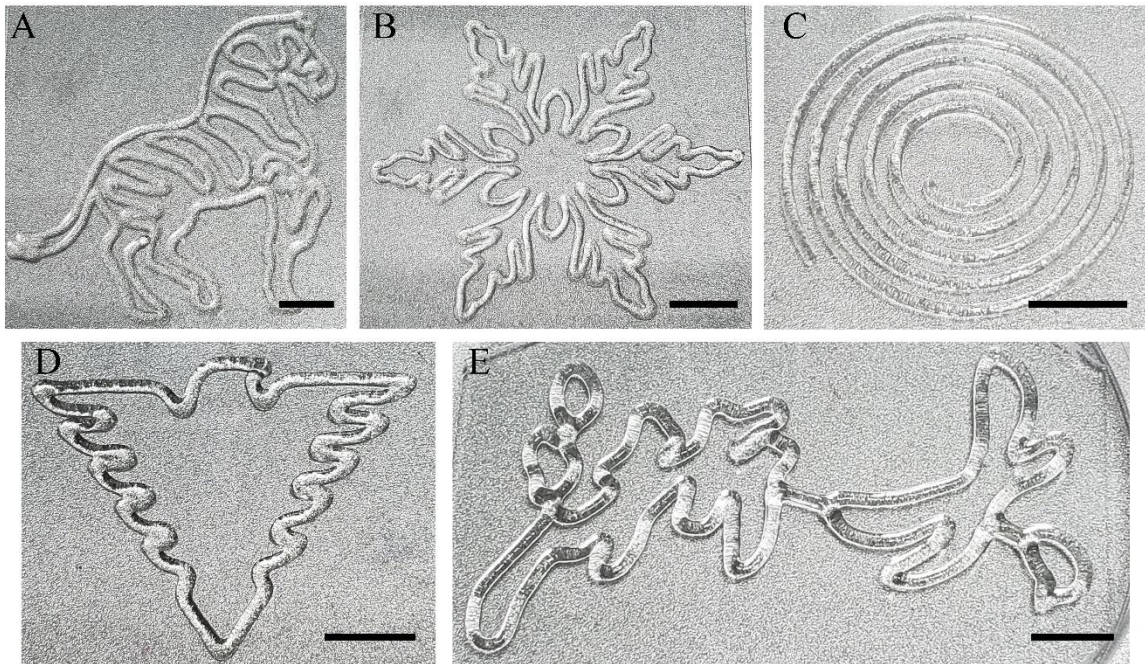


Figure S1. Photos of printed unicursal patterns by hollow filament. (Scale bars: 10 mm) (A) A horse. (B) A snowflake. (C) An Archimedes curve. (D) Mascot of Zhejiang University: Qiushi eagle. (E) Abbreviation of Zhejiang University in Chinese.

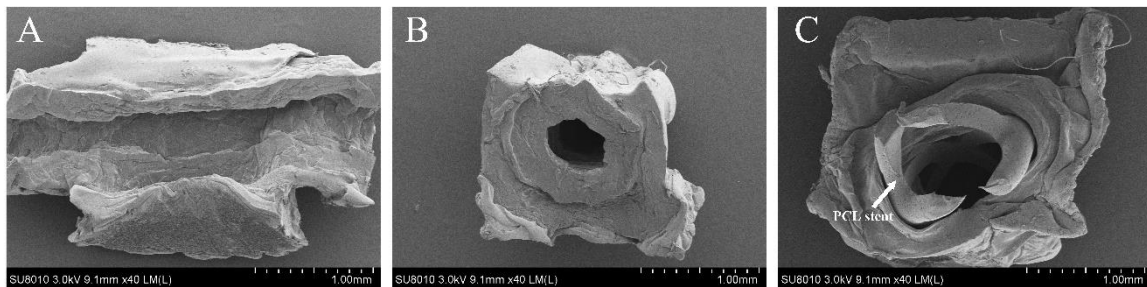


Figure S2. SEM images of hydrogel bulks containing tubes with/without a stent. (A) The lateral section of bulk without stent. (B) The cross section of bulk without stent. (C) The cross section of bulk with a stent.

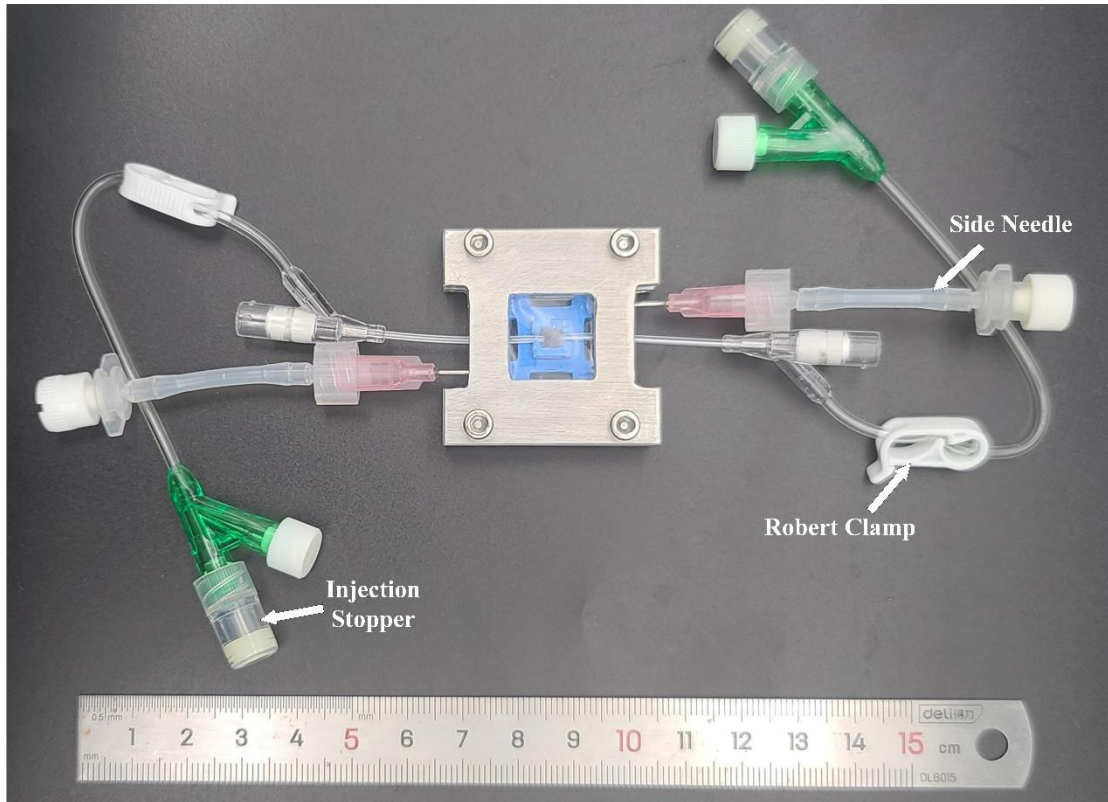


Figure S3. Quickly-separable perfusion chip.

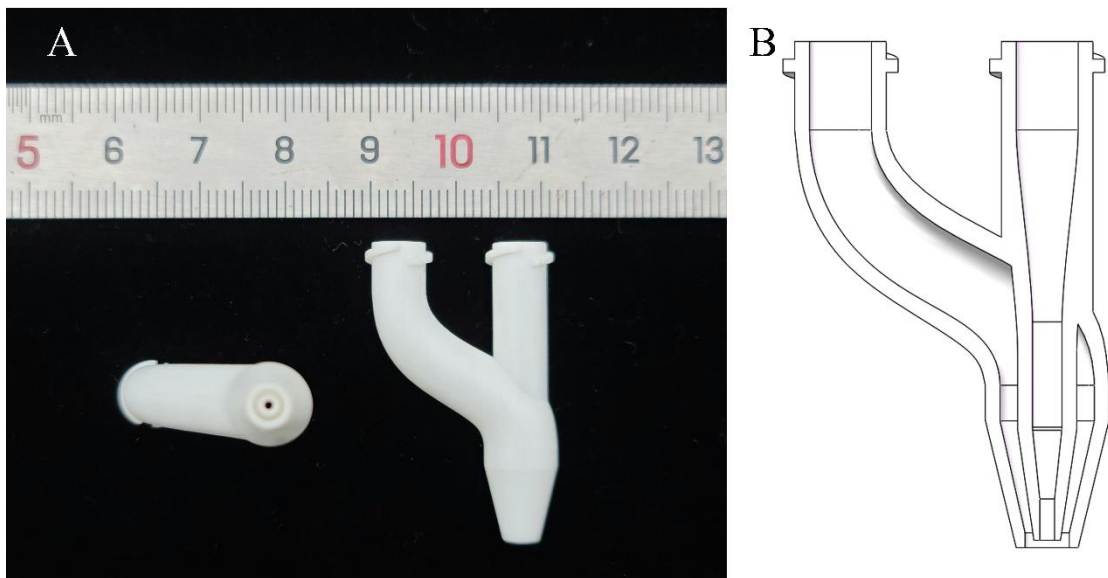


Figure S4. Coaxial nozzles manufactured by 3D ceramic printer. (A) Photo of coaxial nozzle-1-3. (B) Section view of coaxial nozzle-1-3 (exported from Solidworks 2016).

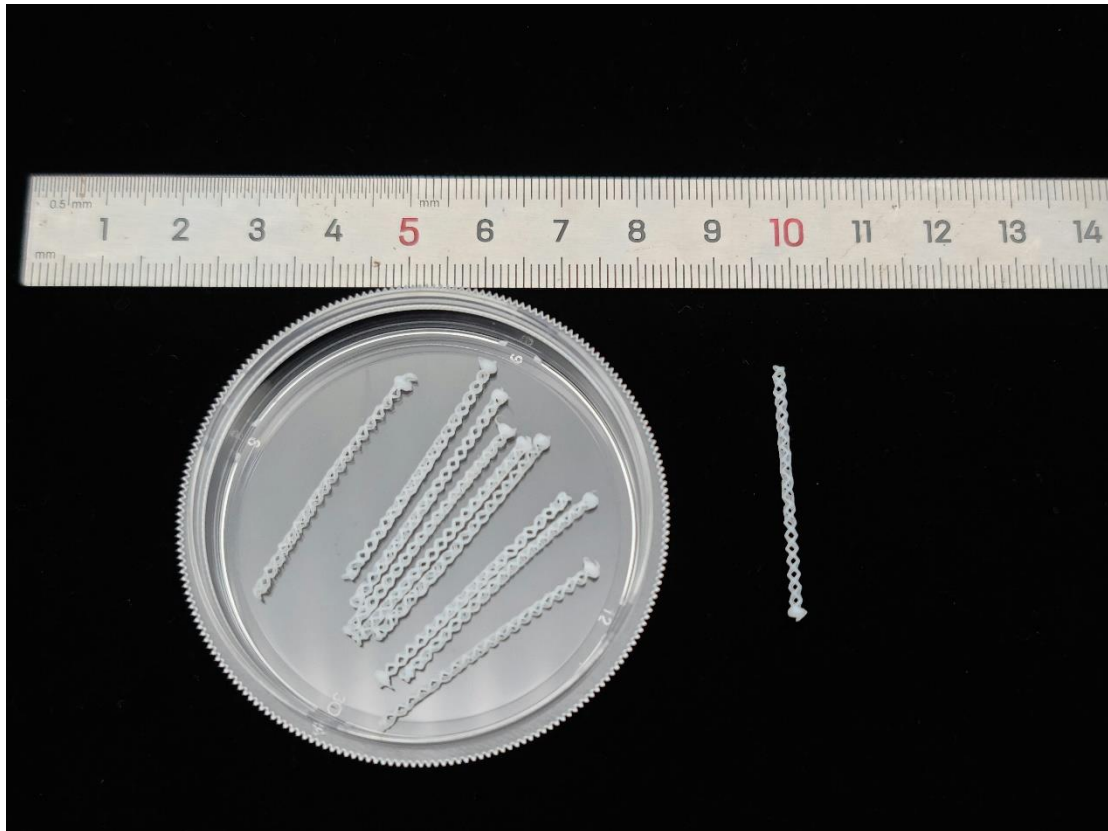


Figure S5. PCL stents (would be cut into segments of 5 mm long to fit the perfusion chip).

Supplementary videoclip

Videoclip S1. Perfusion performance of hydrogel tube with/without stent.

Videoclip S2. Sprouting of HUVECs in perfusion culture.