

Supporting Information

Title: Formulation and characterization of 3D printed grafts as vascular access for potential use in hemodialysis

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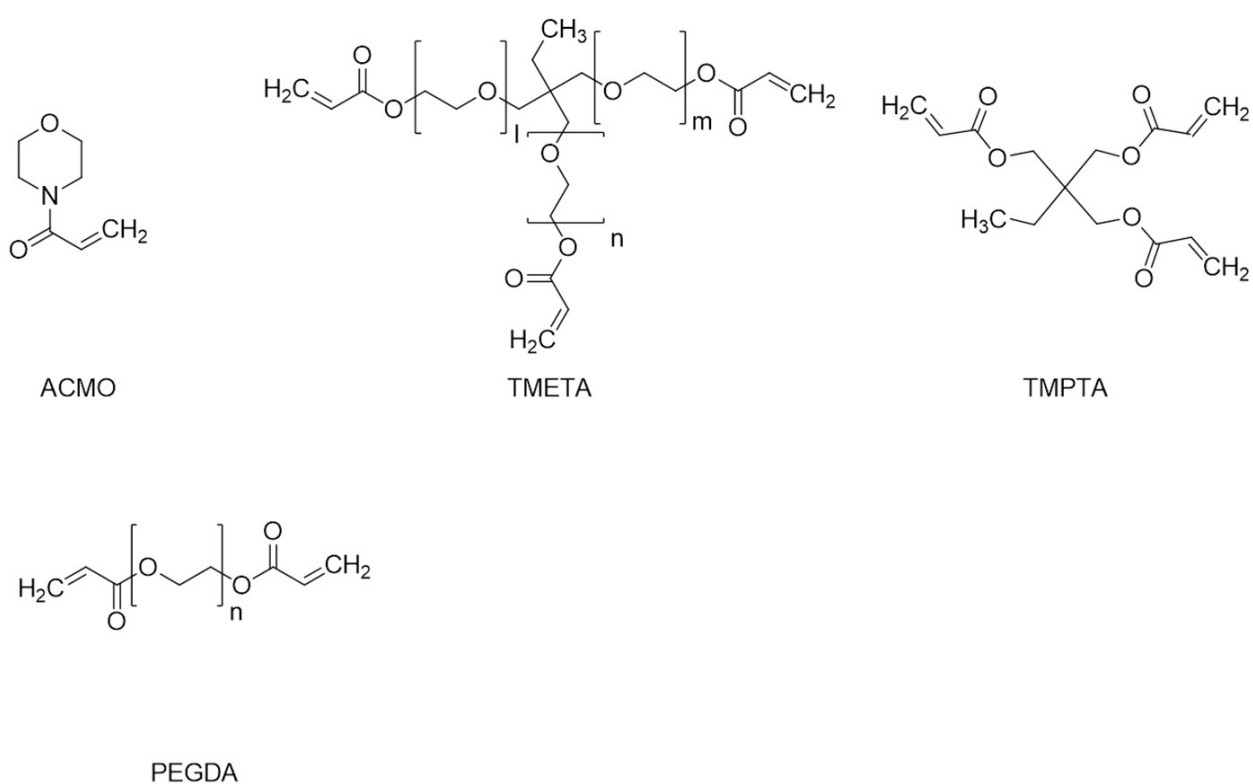


Figure S1. Chemical structures of the polymers used in fabricating the 3D printed AVG.

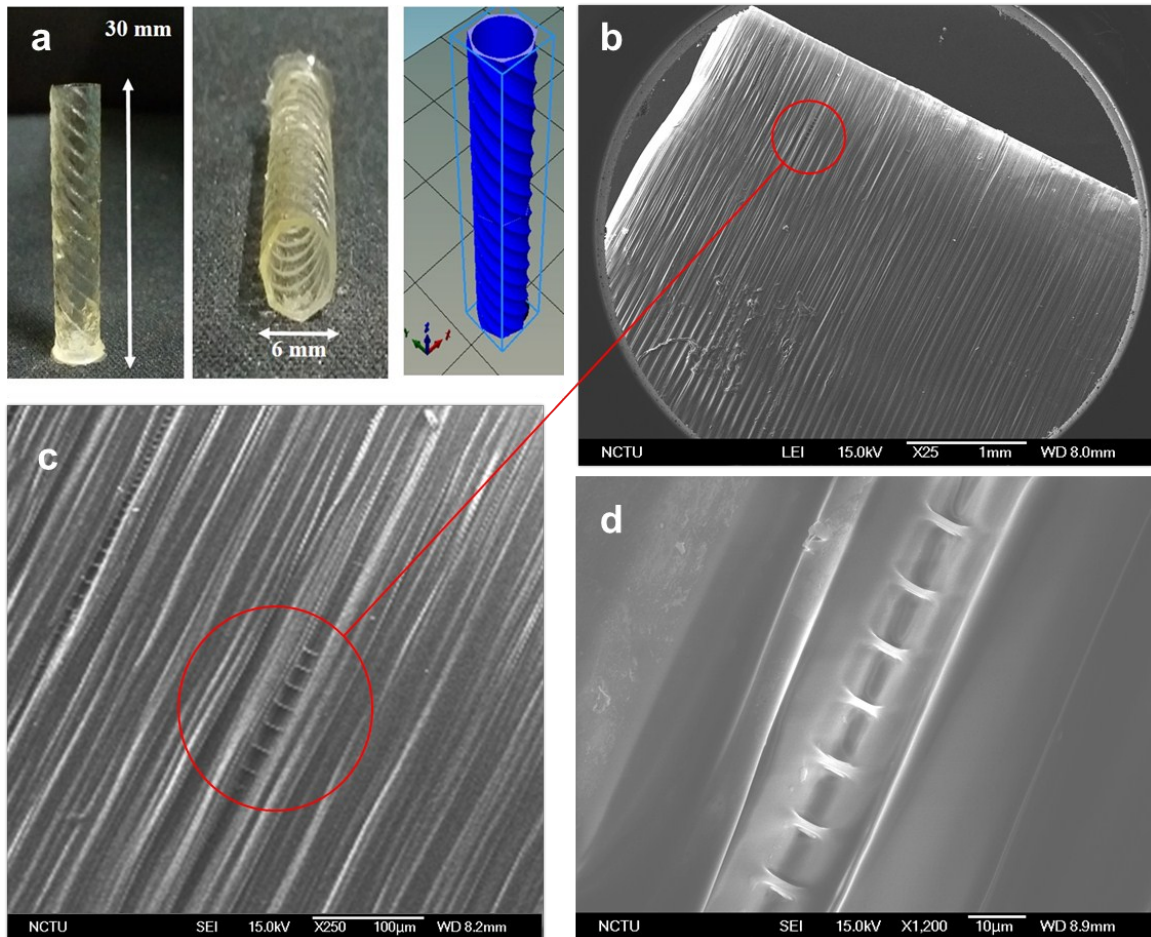


Figure S2. The PEDA ink formulation was 3D printed into (a) PEGDA-AVG with twisted outer rim. (b) SEM image at 25 \times ; scale bar: 1 mm. (c) SEM image showed the small area contained layer splitting (red circle); scale bar: 10 μm . (d) The amplified image of (c); scale bar: 100 μm

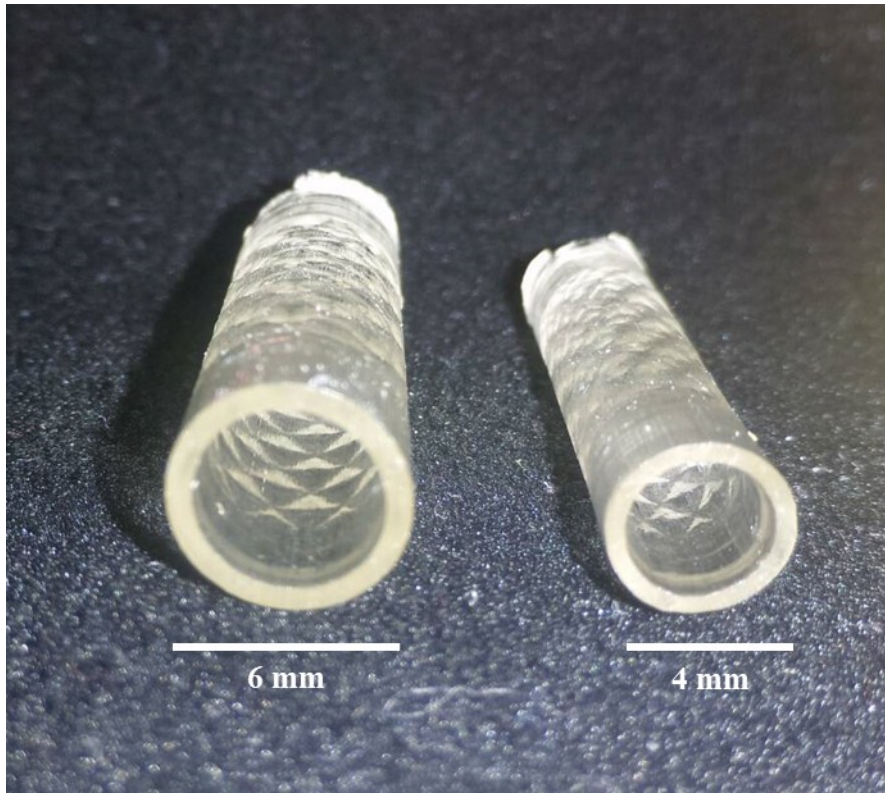
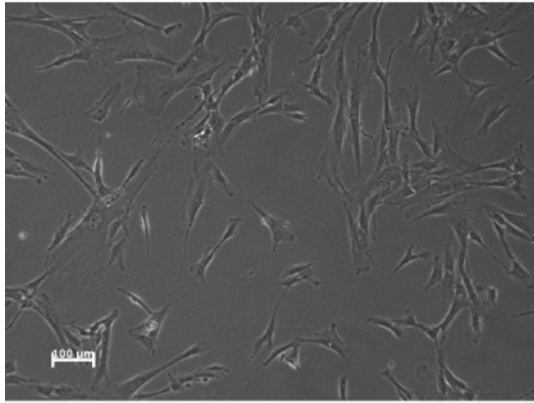
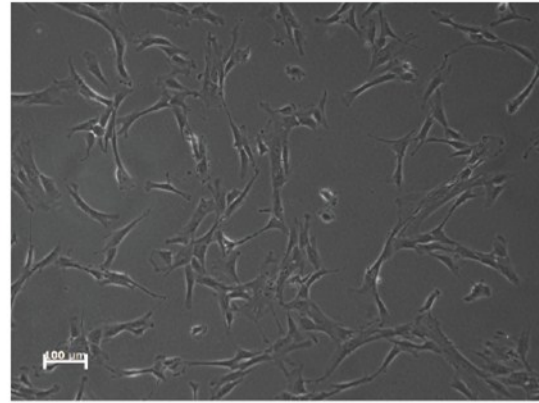


Figure S3. The 3D printed ACMO-AVG with different diameters.

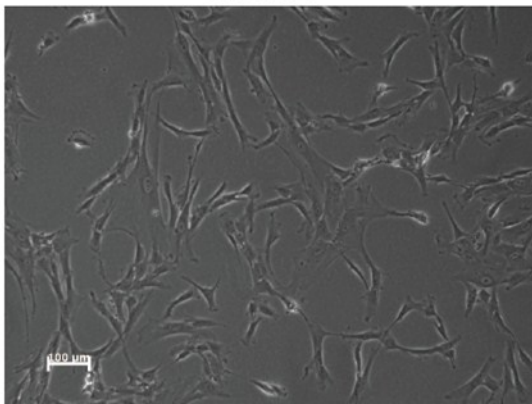
Culture Plate



ePTFE



ACMO



PEGDA

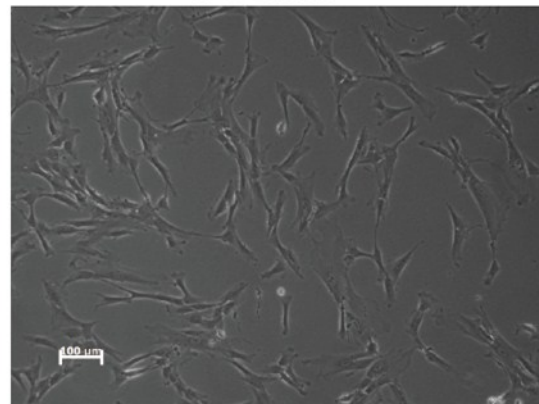


Figure S4. After being incubated in the culture media that had been pre-exposed to different AVG materials for 72 hour, the cell morphology of human skin fibroblast, WS1, in each incubated media was analysed with a light microscope.

Table S1. Summary of the ACMO-AVG with different outer rim design

Outer Rim Design	Splitting occurred during 3D printing	Layer splitting visible under TEM	Structurally stable after 3D printed
Twisted	No	No	Yes
Hexagonal	Yes	Yes	No
Cylindrical	Yes	Yes	No

Table S2. Fracture energy analysis of different AVG expressed as mJ/mm³

	ePTFE	PEGDA	ACMO
Tensile Strength	85.34409	21.18079	146.83013
Suture Retention	5.36547	0.24382	3.59071