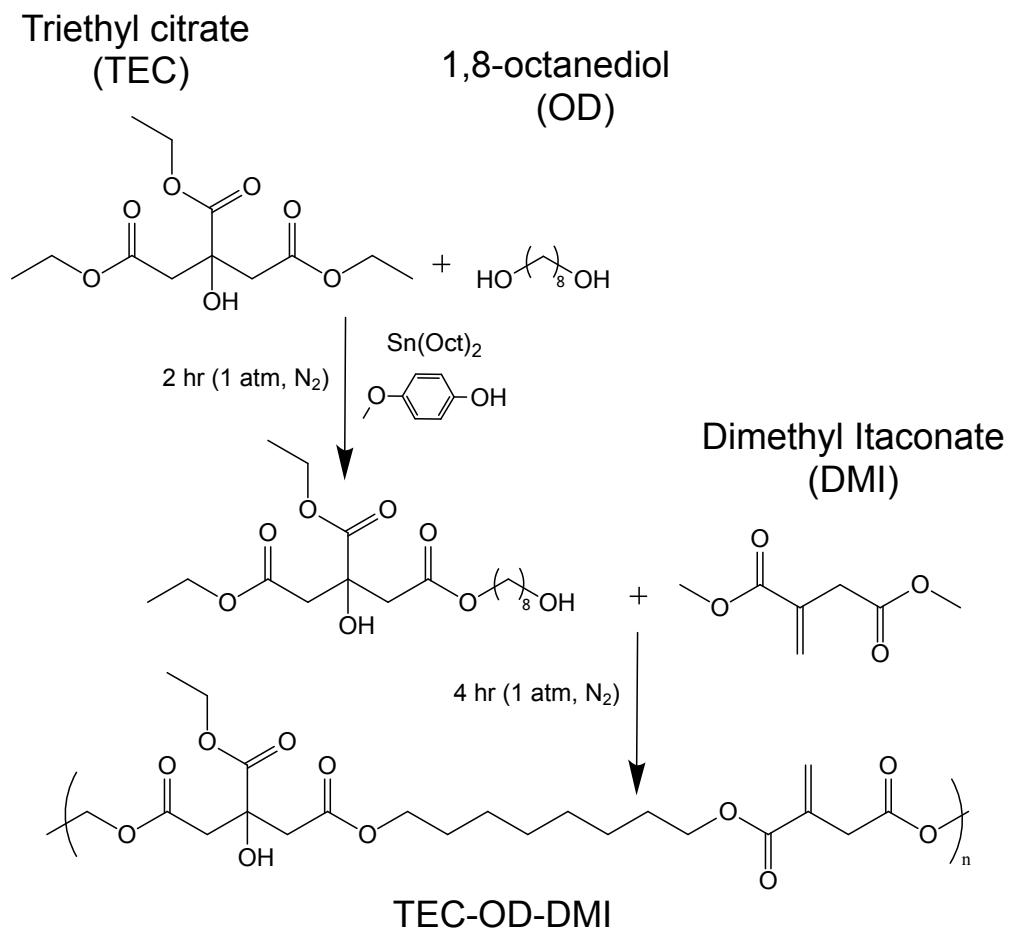
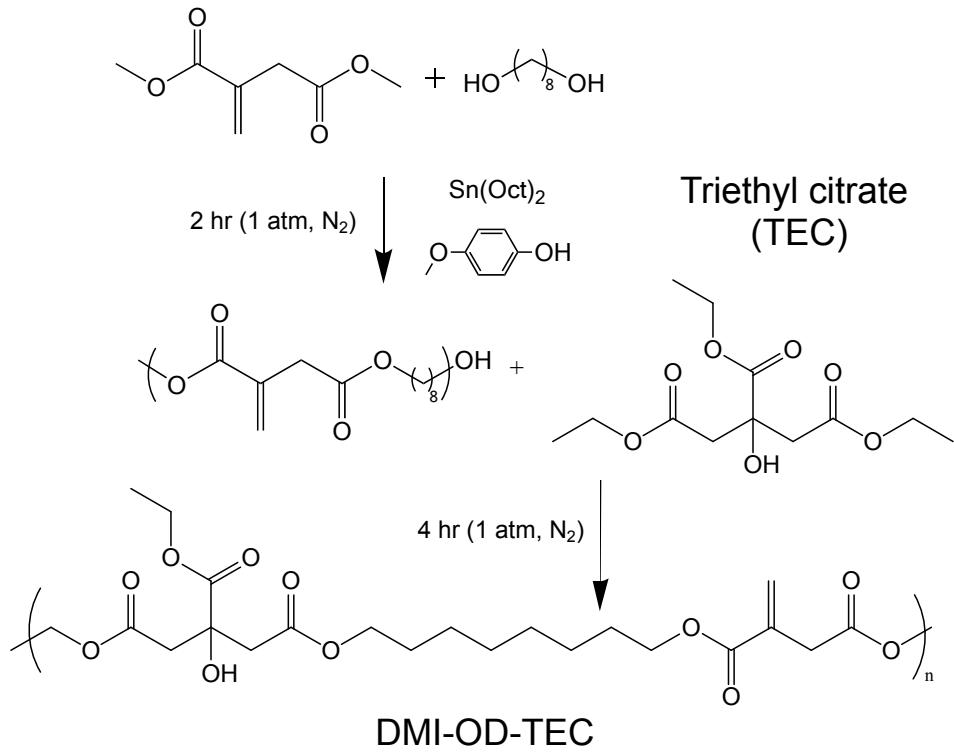


## Supplementary Figures



Supplementary Figure 1: Synthesis scheme for TEC-OD-DMI

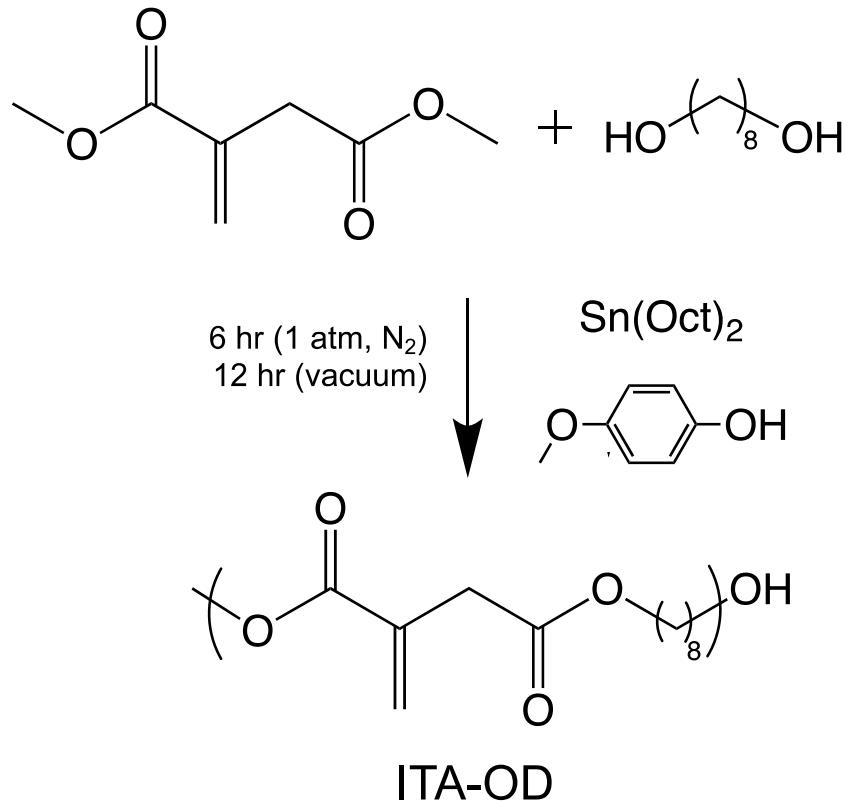
Dimethyl Itaconate  
(DMI)      1,8-octanediol  
(OD)



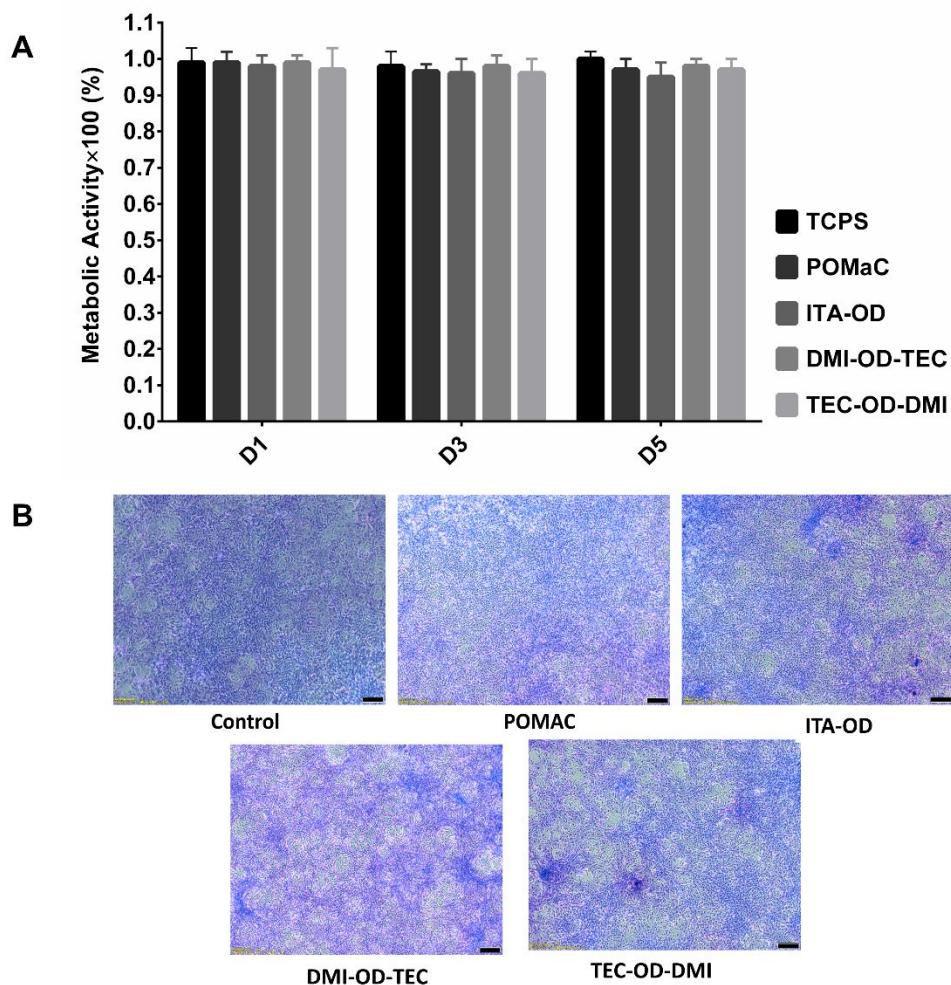
**Supplementary Figure 2: Synthesis scheme for DMI-OD-TEC**

Dimethyl Itaconate  
(DMI)

1,8-octanediol  
(OD)



Supplementary Figure 3: Synthesis scheme for ITA-OD



**Supplementary Figure 4. New bioelastomers exhibit no measurable cytotoxicity on cardiac fibroblasts.** A) Indirect cytotoxicity test of the photocrosslinked bioelastomers (N=3, n=4) ( $p>0.05$ ); B) Representative crystal violet images of CFs after exposure to the material extracts showing no significant morphological changes of CFs. Scale bar (200  $\mu\text{m}$ )

**Supplementary Movie 1: Formation and beating of cardiac tissue around the microtube after 7 days in culture.**