Electronic Supplementary Material (ESI) for Biomaterials Science.

Biocompatible sub-100 nm patterning of TiO_2 for the regulation of endothelial and smooth muscle cell functions

R. Muhammad,[a,b,#] S. H. Lim,[b,e,#] S. H. Goh, [a,b] J. B. K. Law,[b] M. S. M Saifullah,[b] G. W. Ho,[e] and E. K. F. Yim [a,c,d]*

Supplementary information

Imaging of patterned TiO_2 samples after incubation in cell culture media

Patterned TiO_2 samples were imaged after incubation in cell culture media to see the effect of media on sub-100 nm topography. For this purpose, the samples were incubated in complete cell culture media for 24 hrs at 37ºC. Subsequently, the samples were washed with 1X PBS once, fixed in 2% glutaraldehyde in 0.1M sodium cacodylate and 3mM calcium chloride buffer for 1 hr. After fixing, the samples were washed 3 times with the same buffer and serially dehydrated in ethanol gradient (15%, 30%, 50%, 70%, 90%, and 100%). Finally the samples were dried in critical point dryer (CPD 030, Blazers). The samples were imaged by using FESEM.

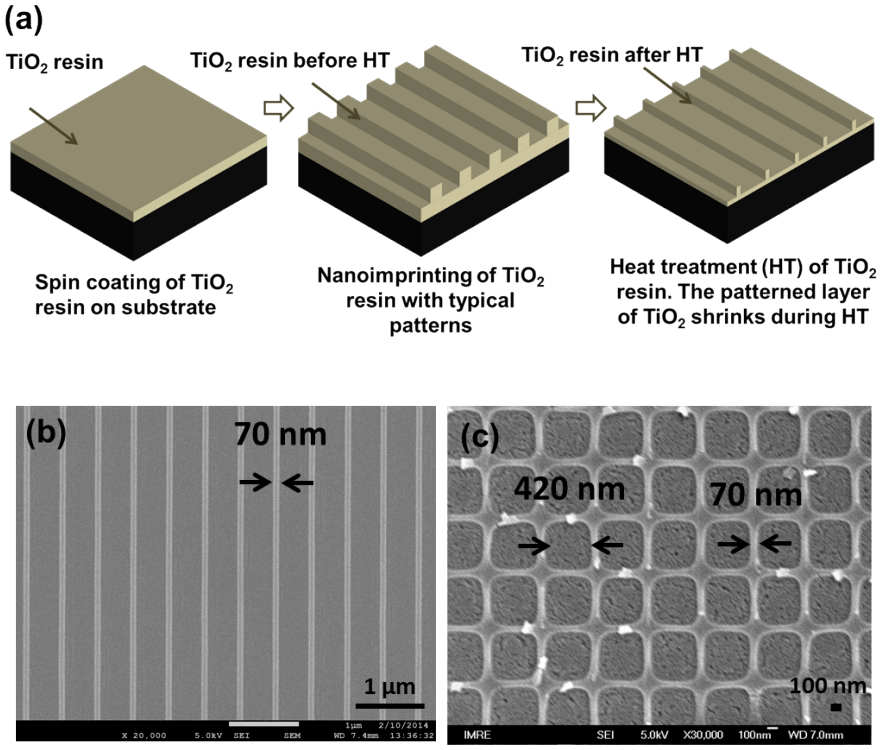

Figure S1: (a) Simplified schematic diagram of TiO_2 patterning. FESEM images of (b) 70 nm TiO_2 nano-gratings and (c) 420 nm TiO_2 square wells with 70 nm spacing after incubation in culture media for 24 hrs. The images reveal that serum proteins do not obscure the topography.