

## **Supporting Information**

### **Surface Patterning and Innate Physico-Chemical Attributes of Silk Films Concomitantly Govern Vascular Cell Dynamics**

*Prerak Gupta, Joseph Christakiran Moses, and Biman B. Mandal\**

*Biomaterial and Tissue Engineering Laboratory, Department of Biosciences and Bioengineering,*

*Indian Institute of Technology Guwahati, Guwahati, Assam-781039, India*

#### ***\*Author for Correspondence***

*Dr. Biman B. Mandal*

*Associate Professor*

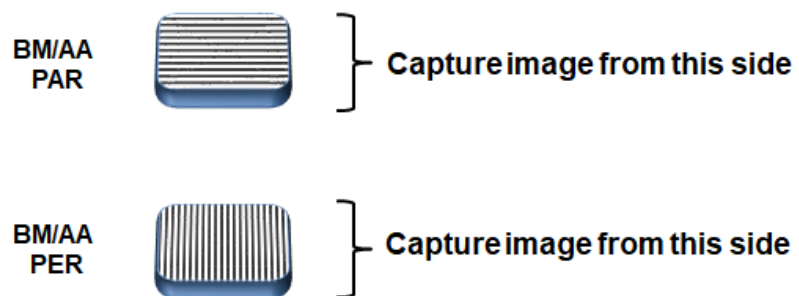
*Department of Biosciences and Bioengineering*

*Indian Institute of Technology Guwahati, India*

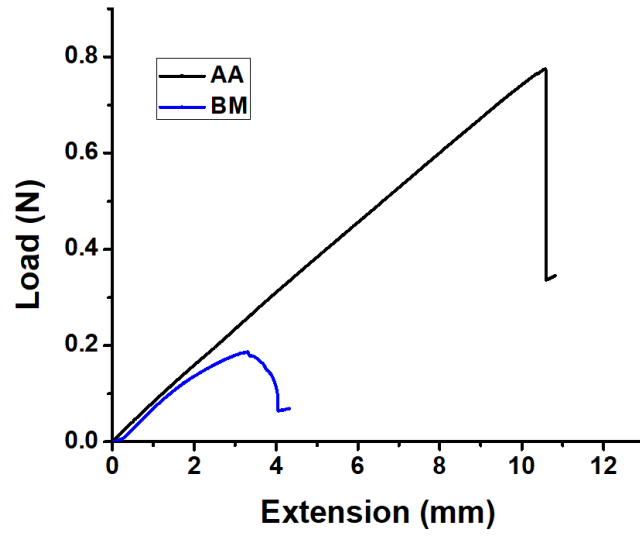
*Phone: +91-361-258 2225*

*Fax: +91 361 258 2249 (O)*

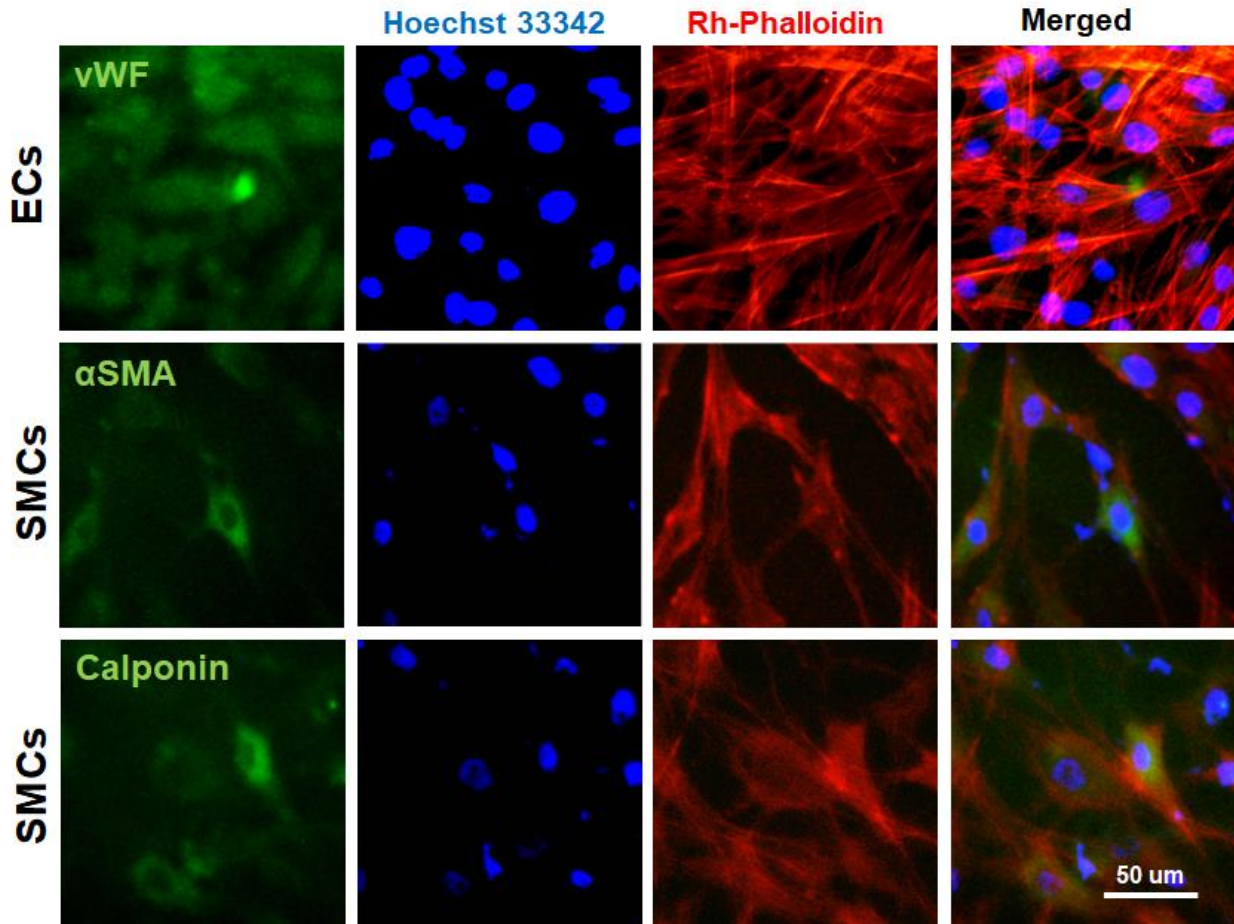
*E-mail: biman.mandal@iitg.ac.in*



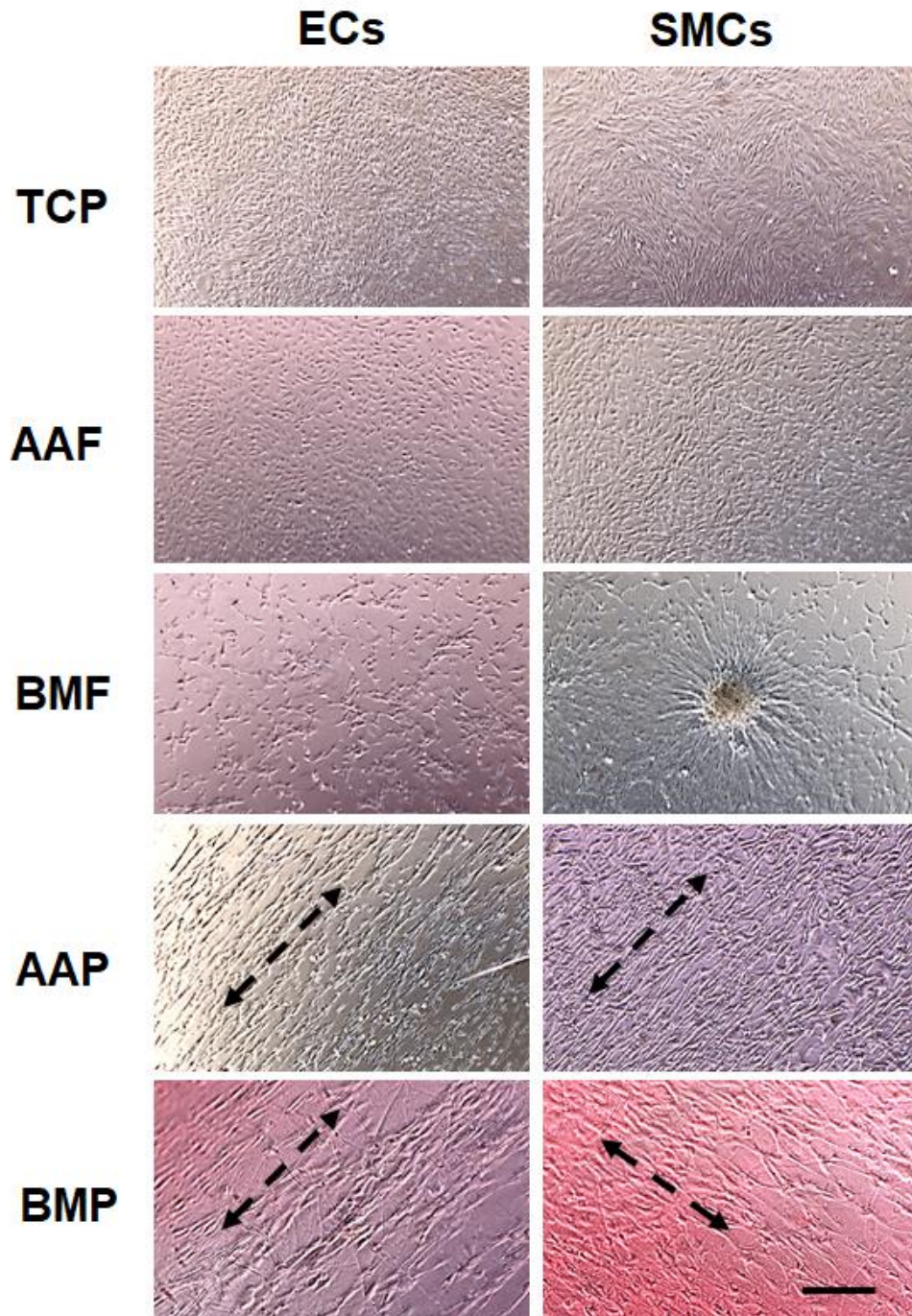
**Figure S1:** Schematic representation of contact angle measurement for patterned silk films. *BM/AA PAR* is representing that the image was captured parallel to the direction of pattern and *BM/AA PER* is representing that the image was captured perpendicular to the direction of pattern.



*Figure S2: Representative load-displacement curves of hydrated silk films.*



**Figure S3: Vascular cells' (ECs and SMCs) marker specific identification.** Vascular cells isolated from porcine aorta were characterized based on specific marker expression. Cells were cultured on standard tissue culture plate (TCP) and labelled with marker specific antibodies (vWF for endothelial cells,  $\alpha$ SMA and Calponin for smooth muscle cells: green color), Hoechst 33342 (for staining nucleus: blue color) and Rhodamine-phalloidin (for actin cytoskeleton: red color)



**Figure S4:** Representative lower magnification of vascular cells cultured on silk films. Scale bar represents 500  $\mu\text{m}$ . Black arrows represent direction of cell alignment.