

## **Supplemental Materials**

### **Nanotopography Influences Adhesion, Spreading, and Self-renewal of Human Embryonic Stem Cells**

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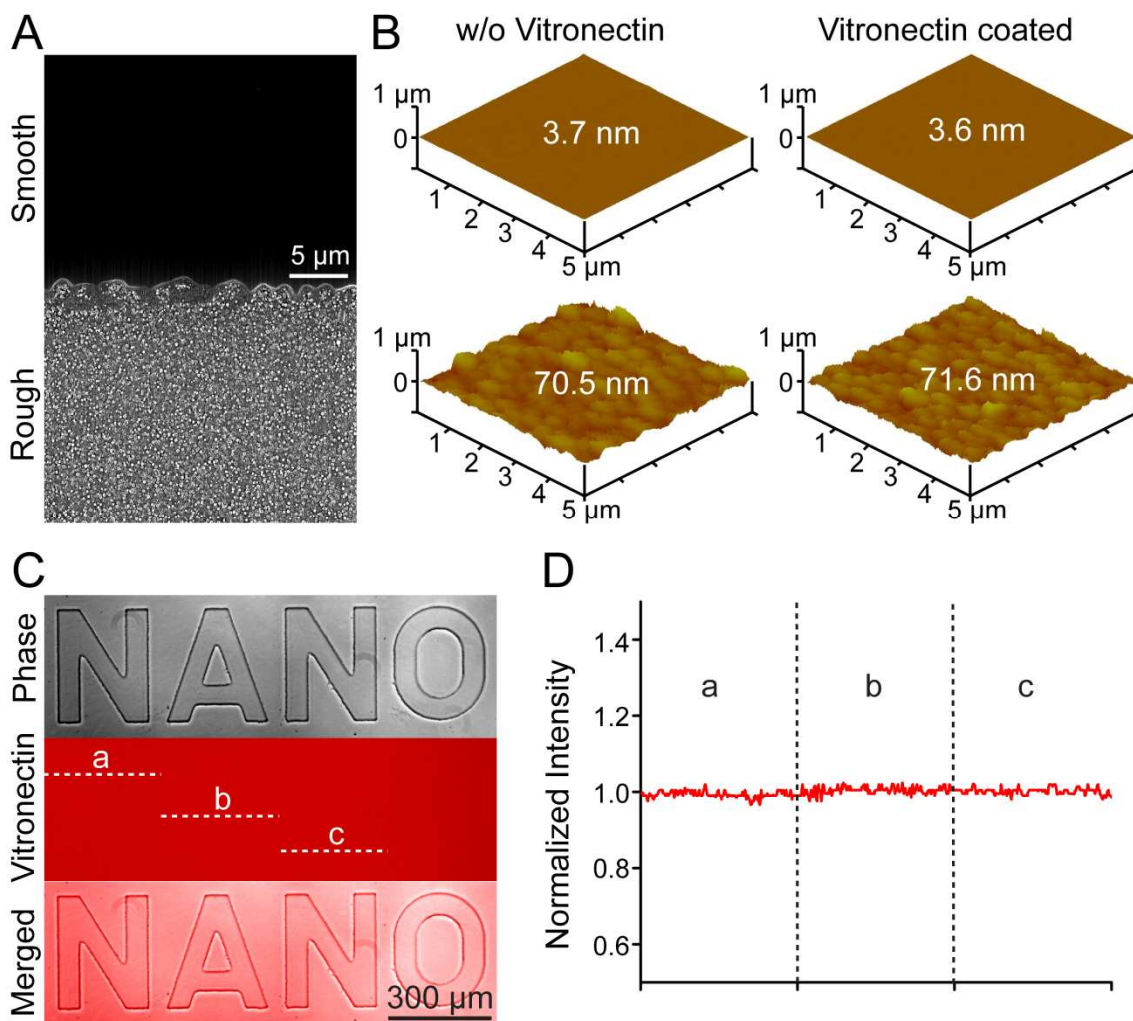
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#### **This Supplemental Materials includes:**

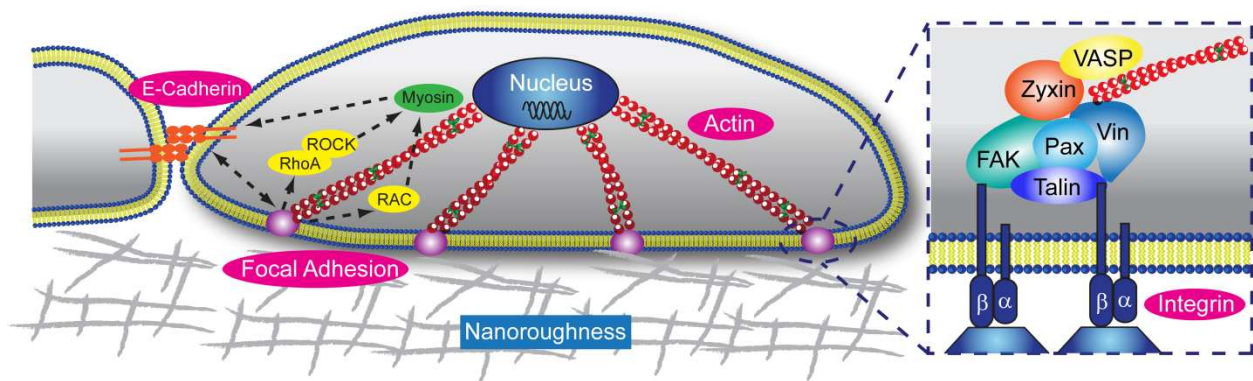
Supplemental Figures (Fig. S1-S2) with the captions.

Supplemental Figures  
Supplemental Figure S1



**Supplemental Figure S1.** (A) Top-view SEM image showing a patterned glass surface with smooth (top) and nanorough (bottom) regions on the same substrate as indicated. (B) AFM topographs of the smooth and nanorough regions of the glass substrate shown in A with (right) or without (left) vitronectin coating. The values of the RMS roughness  $R_q$  were indicated on the topographs. (C) Phase-contrast (top), immunofluorescence (middle), and merged (bottom) images of a glass surface patterned with nanorough letters (NANO). The patterned glass surface was coated uniformly with vitronectin (5  $\mu\text{g}/\text{mL}$ ). A fluorescence conjugated antibody was used for visualization of vitronectin. (D) Normalized fluorescence intensity along the three dashed lines (a-c) shown in C.

## Supplemental Figure S2



**Supplemental Figure S2.** Schematic showing a feedback regulation and mechanical-biochemical integration involving FA, NMMIIA, and E-cadherin engaged in the topological sensing of hESCs by their cross-regulation of intercellular adhesion and cell-ECM interactions. Focal adhesion kinase (FAK), talin, paxillin (Pax), vinculin, zyxin, and vasodilator-stimulated phosphoprotein (VASP) are mechanosensitive proteins contained in the FA plaque.