

Supplementary Information

for

**Extracellular nanofiber orchestrated cytoskeletal reorganization and
mediated directional migration of cancer cell**

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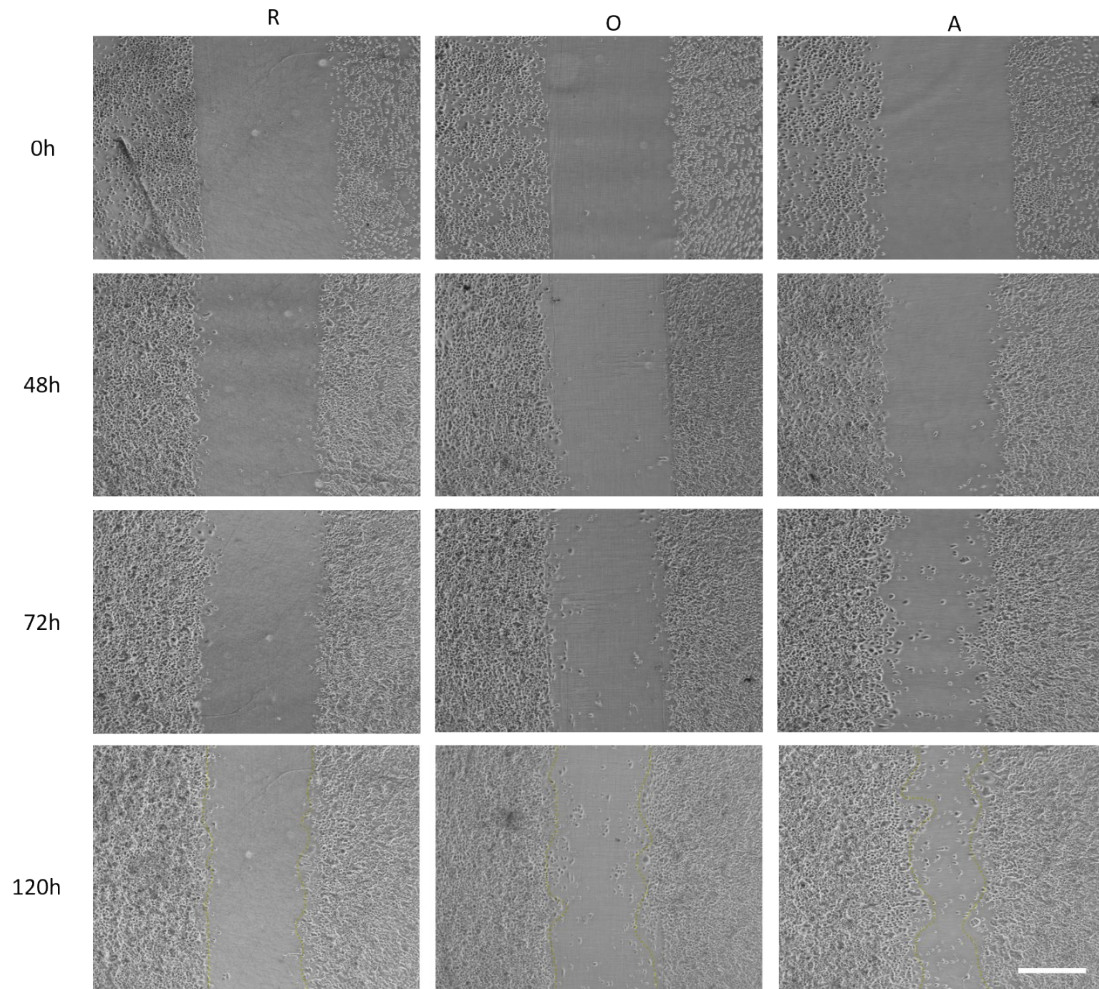


Fig. S1. Time-lapse images on wound healing assay. Cells on random nanofibers (left panels), orthogonal nanofibers (middle panels) and aligned nanofibers (right panels) were seeded for 18 hours until a monolayer was formed. Images were produced after scraping for 0 hour, 48 hours, 72 hours and 120 hours. Scale bar, 500 μm .

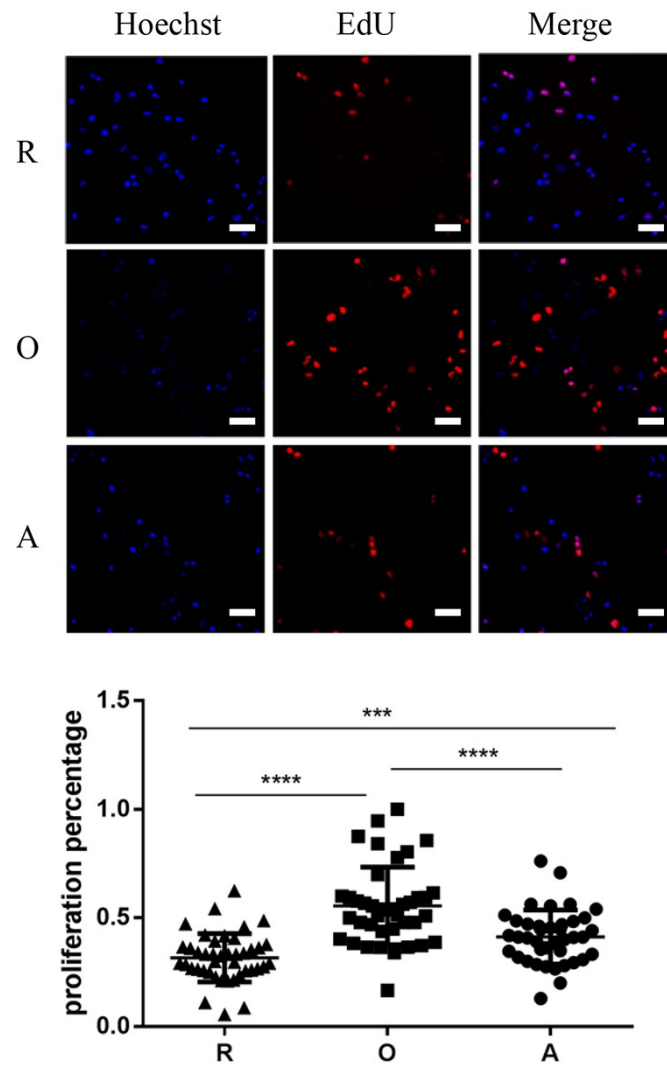


Fig. S2. Proliferation fluorescent images and proliferation rate of PANC-1 cells on random nanofibers, orthogonal nanofibers and aligned nanofibers. Statistical analysis of cell proliferation rate was assessed by EdU. Data were shown by mean with SD, statistical differences were calculated using unpaired t-test.

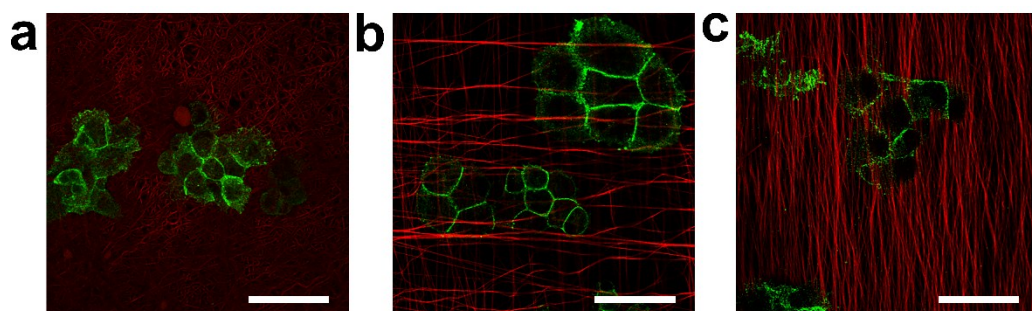


Fig. S3. Location of β -catenin in cells on (a) random, (b) orthogonal and (c) aligned nanofibers. Scale bar, 50 μm .

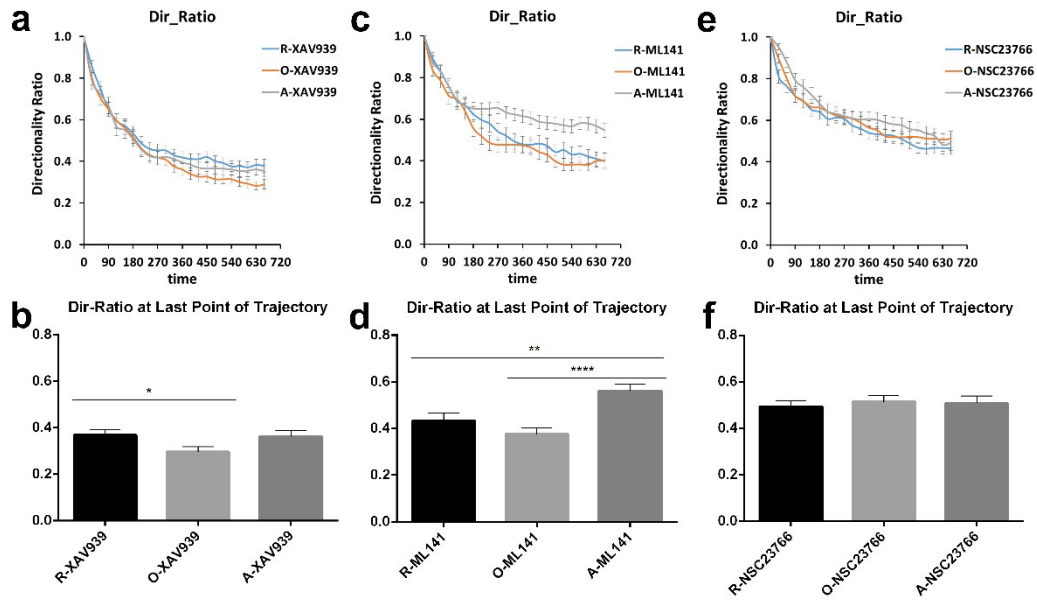


Fig. S4. Directionality ratio. (a, b) Directionality ratio over time and directionality ratio at last point of trajectory for cells on nanofibers of different topologies after treating with XAV939. (c, d) Directionality ratio over time and directionality ratio at last point of trajectory for cells on nanofibers of different topologies after treating with ML141. (e, f) Directionality ratio over time and directionality ratio at last point of trajectory for cells on nanofibers of different topologies after treating with NSC23766.

Description of

Auxiliary Supplementary Materials

Videos

Supplementary Movie 1.

Migratory behavior of PANC-1 on random nanofibers (left), orthogonal nanofibers (middle) and aligned nanofibers (right). Scale bar, 50 μm .

Supplementary Movie 2.

Migratory behavior of PANC-1 on random nanofibers (left), orthogonal nanofibers (middle) and aligned nanofibers (right) after treating with DMSO. Scale bar, 50 μm .

Supplementary Movie 3.

Migratory behavior of PANC-1 on random nanofibers (left), orthogonal nanofibers (middle) and aligned nanofibers (right) after treating with XAV939. Scale bar, 50 μm .

Supplementary Movie 4.

Migratory behavior of PANC-1 on random nanofibers (left), orthogonal nanofibers (middle) and aligned nanofibers (right) after treating with ML141. Scale bar, 50 μm .

Supplementary Movie 5.

Migratory behavior of PANC-1 on random nanofibers (left), orthogonal nanofibers (middle) and aligned nanofibers (right) after treating with NSC23766. Scale bar, 50 μm .