

## Supplementary Information

### Tracking the tumor invasion front using long-term fluidic tumoroid culture

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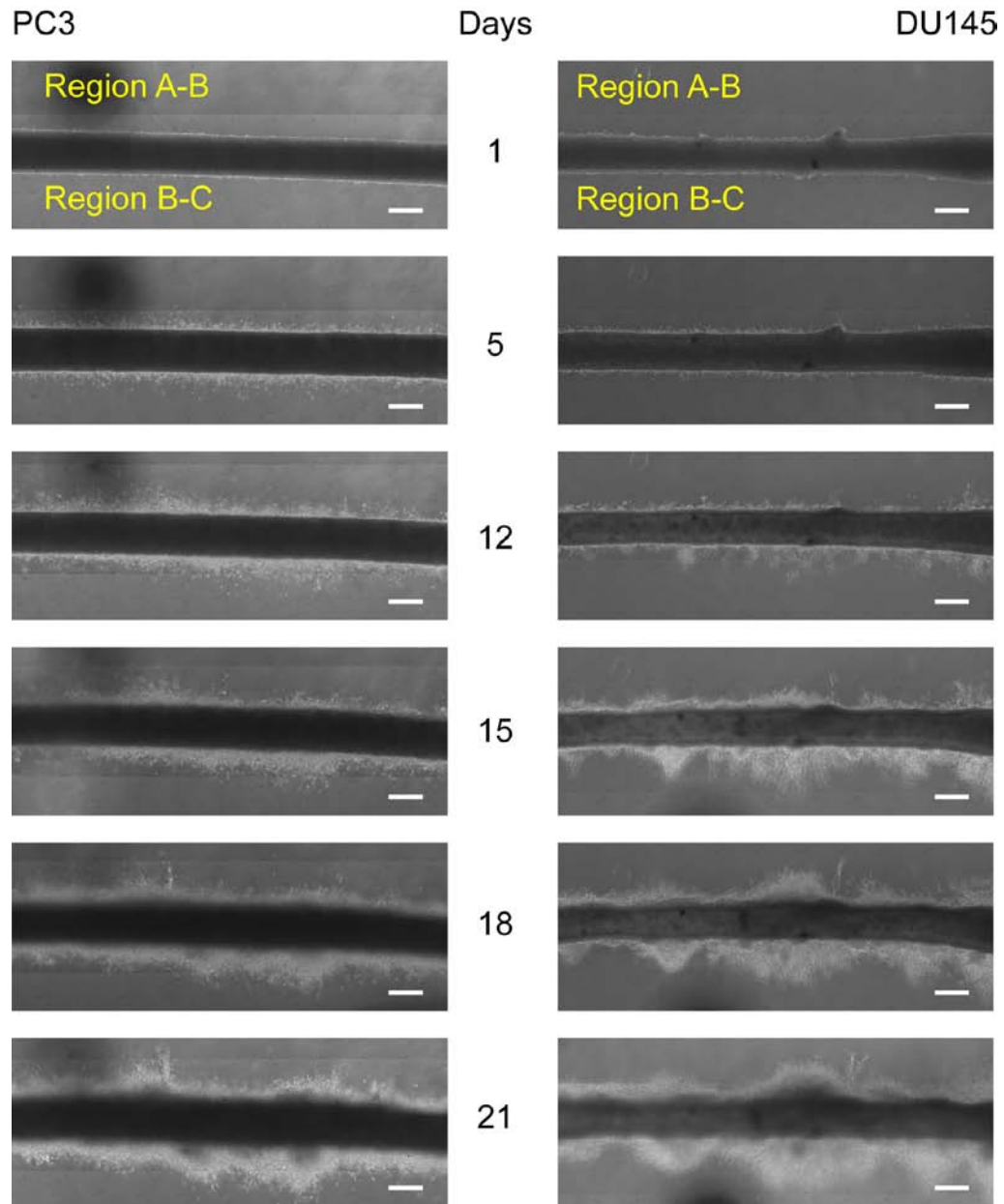
#### **Disclosure**

The authors declare that there are no conflicts of interest.

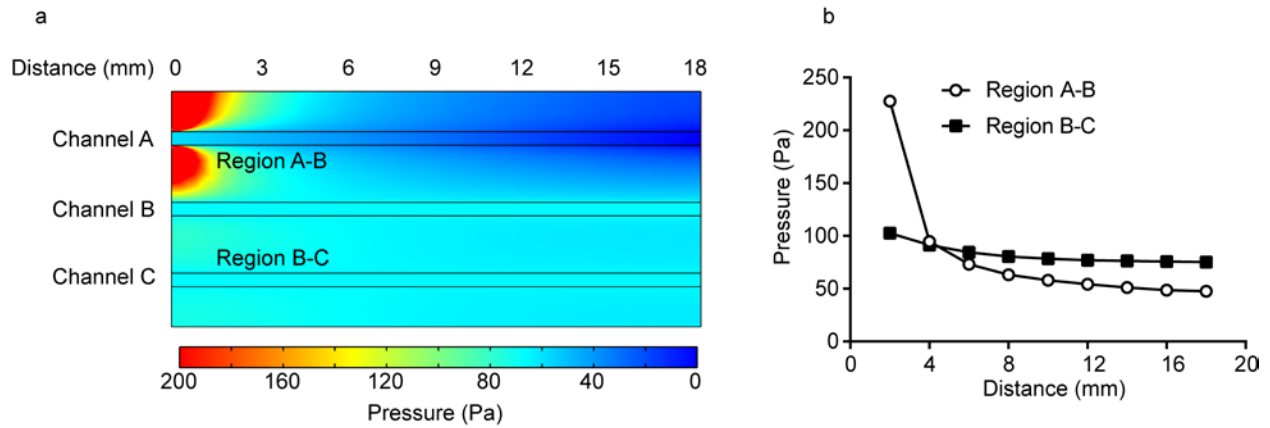
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## SUPPLEMENTARY FIGURES AND CAPTIONS

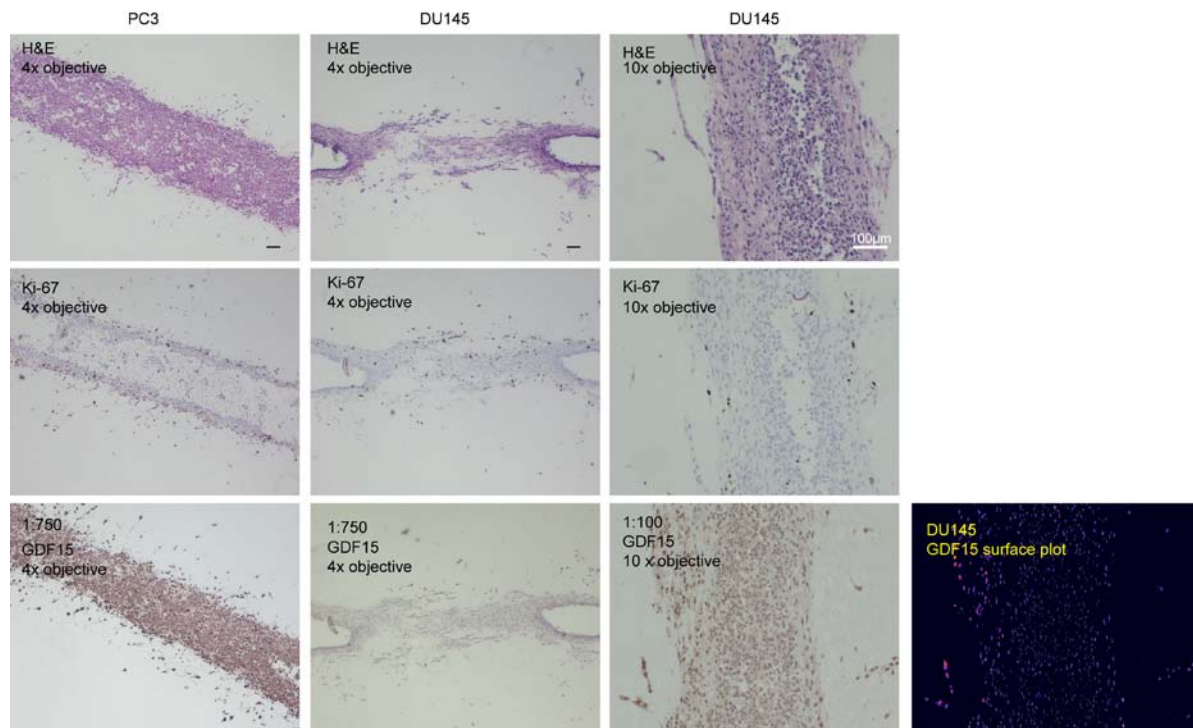


**Supplementary Figure 1. Development of the invasion front in cultured tumoroids.** Mosaic phase images of the entire tumoroid were taken over time to demonstrate the formation of the invasion front into regions A-B and B-C. Spatiotemporal analysis of PC3 (left) and DU145 (right) tumoroids shows the formation of multiple invasion fronts from the tumoroid. Scale bars, 500  $\mu\text{m}$ .



**Supplementary Figure 2. Heat map showing hydrostatic pressure within the fluidic device.**

(a) Heat map revealed an initial region in region A-B with elevated pressure near the opening of channel A. Pressure within region A-B decreased rapidly as fluid flowed through channel A. The overall pressure within region B-C was higher than in region A-B. (b) Plot of average pressure values distribution in both regions throughout the length of the device.



**Supplementary Figure 3. Low power magnification of PC3 and DU145 tumoroids.** H&E, Ki-67 and GDF15 IHC images were taken using 4x objective. PC3 tumoroids are shown on the left-most column and DU145 on the right three columns. H&E (top row), Ki-67 (middle row) and GDF15 (bottom row). Ki-67 and GDF15 staining were observed to be stronger at the tumoroid interface and invading cells in PC3 and DU145 tumoroids. Scale bars=100 $\mu$ m.