Supplementary Information

PTEN deletion potentiates invasion of colorectal cancer spheroidal cells through 3D Matrigel

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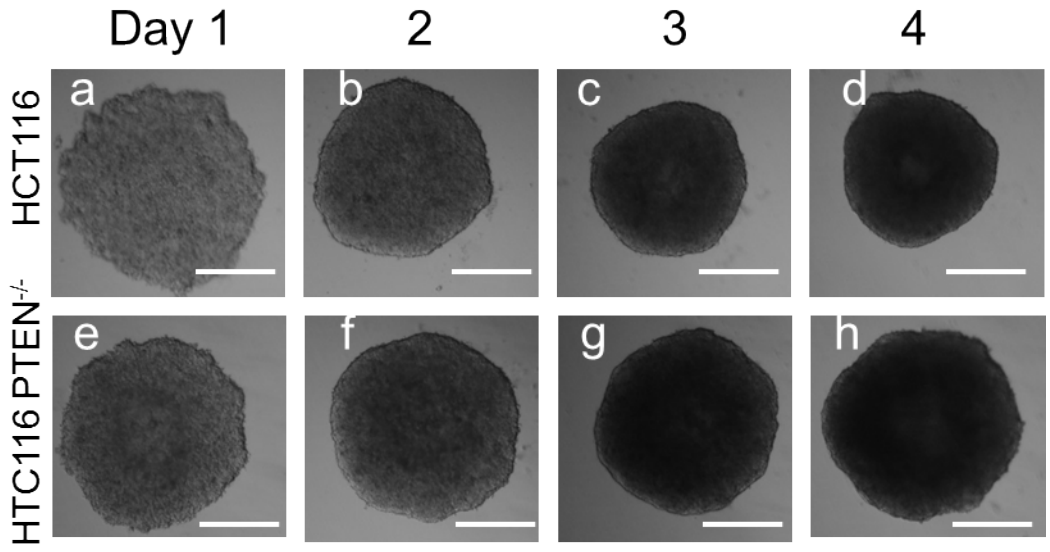

Figure S1. Light microscopic imaging reveals distinct growth pattern of spheroidal cells in 96-well round-bottom ULA surface when the seeding density is high (20000 cells per well). (a-d) HCT116 WT cells at Day 1 to Day 4; (e-h) HCT116-PTEN-/- cells at day 1 to day 4. Scale bar: 500µm.

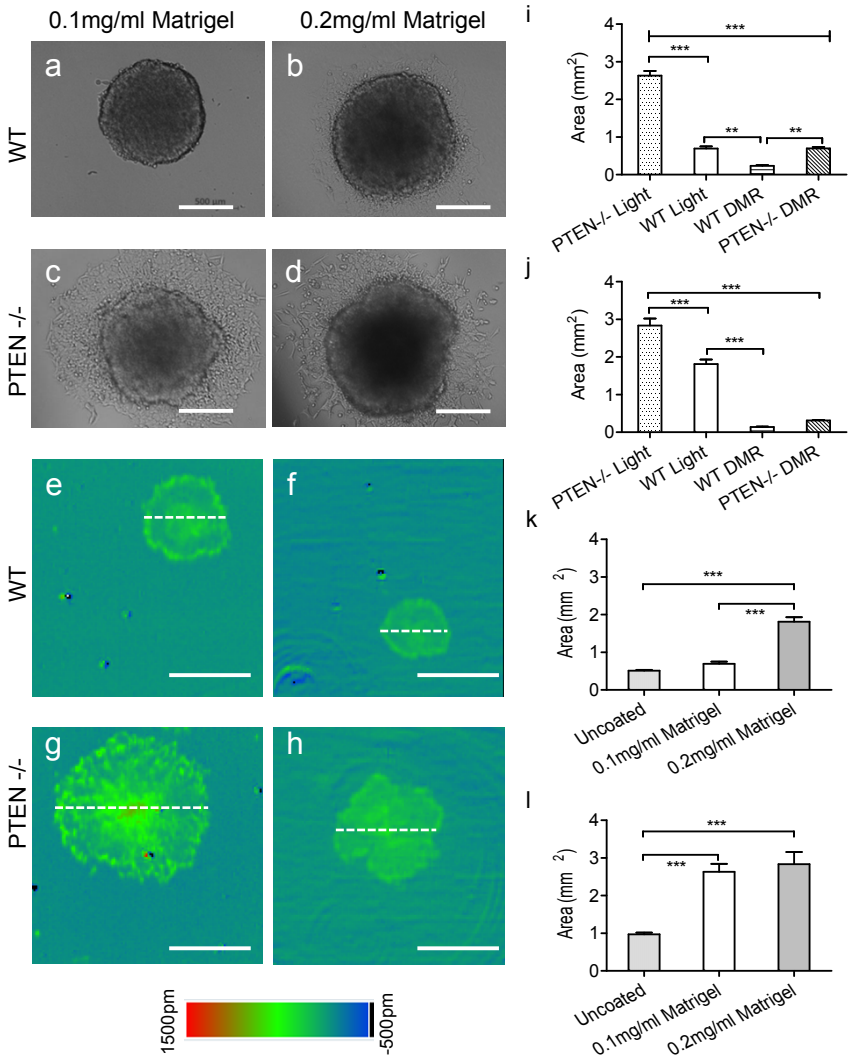

Figure S2. PTEN deletion accelerates the spontaneous transfer of cells in the spheroid onto the top surface of Matrigel coating, as well as the invasion through the 3D Matrigel. (a-d) Representative light microscopic images of the wide-type cells (a,b), or the PTEN-/- cells (c,d); (e-h) Representative DMR images of the wide-type cells (e,f), or the PTEN-/- cells (g,h). (a,c,e,g) Images of spheroidal cells on 0.1mg/ml Matrigel coated surface; (b,d,f,h) Images of spheroidal cells on 0.2mg/ml Matrigel coated surfaces. (i,j) Comparison of the area of cells detected using light microscopic and DMR imaging on 0.1mg/ml Matrigel (i), or 0.2mg/ml Matrigel coated surfaces (j). (k,l) The adhesion area as a function of different surfaces for the parental (k) and PTEN-/- cell line (l). For (k,l), the adhesion area was determined using RWG imager for the uncoated surface, but using light microscopy for the two coating surfaces. All images were obtained 24hrs after a spheroid was placed onto the respective surface. Scale bar for (a-h): 500µm. False colour bar for (e-h): -500 to 1500pm. Data in (i-l) represents mean±s.d. (n=3). Bonferroni's multiple comparison test was used to determine the significance in difference. ** $p<0.01$; *** $p<0.001$.

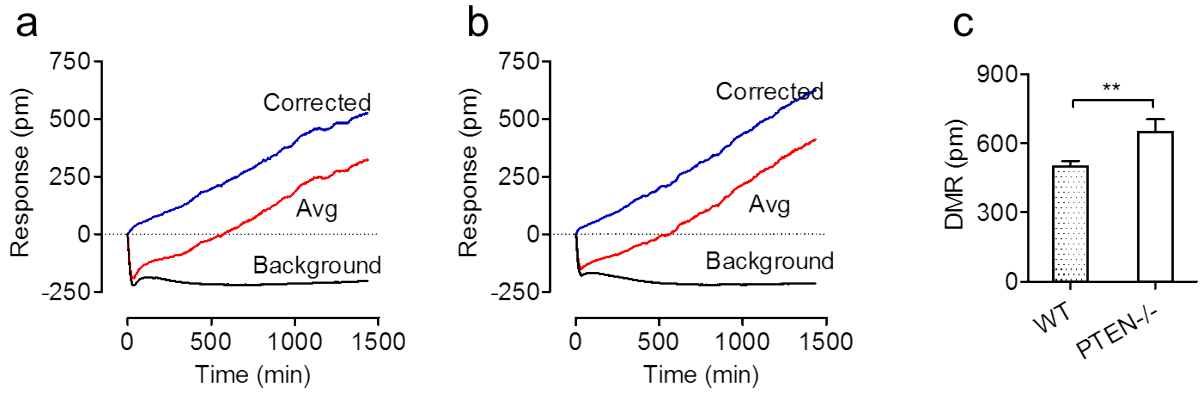

Figure S3. PTEN deletion increases the averaged DMR after the cells are transferred from the spheroid to the bare sensor surface. (a) The averaged DMR of the parental cells at cell adhesion area (Avg) and cell-free area (background), and their net difference (corrected). (b) The averaged DMR of the PTEN-/- cells at cell adhesion area (Avg) and cell-free area (background), and their net difference (corrected). (c) The averaged DMR at 24hrs *versus* cell types. Data represents mean±s.d. for c (n = 3). Student's t test was used to determine the significance in difference. ** $p<0.01$.