Electronic Supplementary Material (ESI) for Integrative Biology.

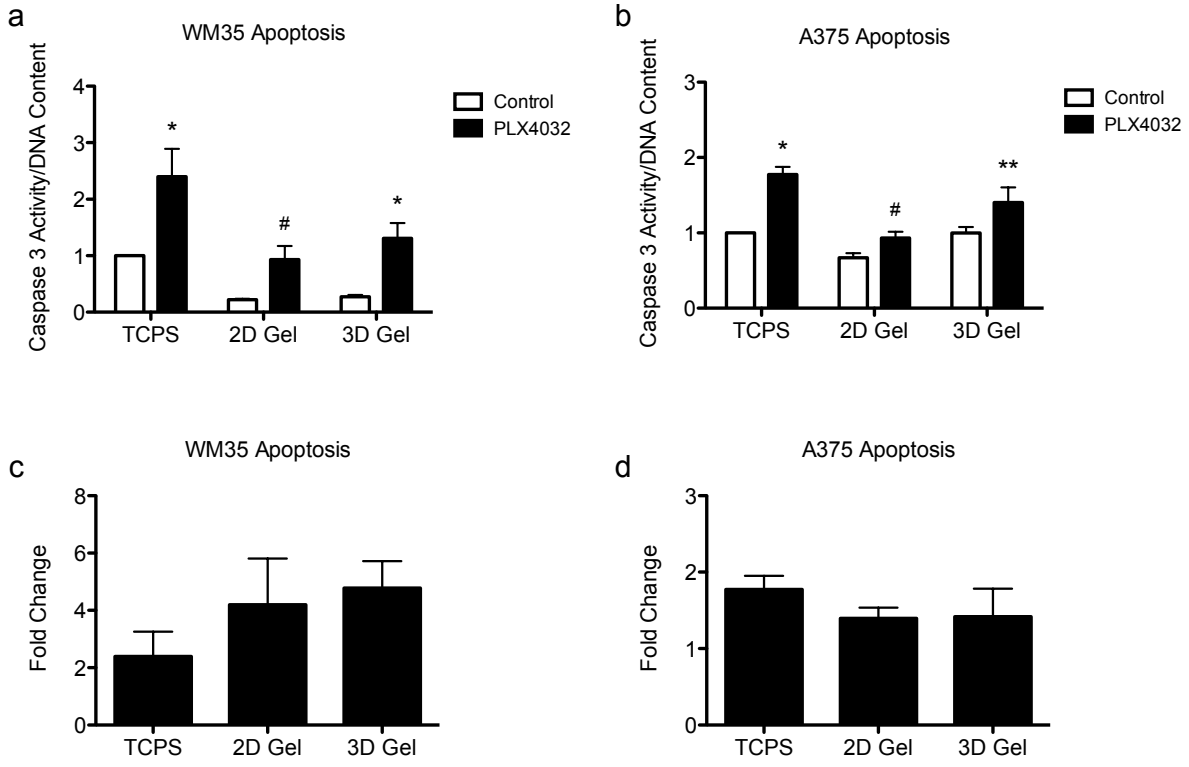

Figure S1. Apoptosis of WM35 and A375 cells in stiff hydrogels (4 kPa) after 48 hours of PLX4032 treatment. (a, b) Apoptosis was measured via caspase 3 activity. The WM35 cells exhibited lower levels of caspase activity under control conditions on top of or encapsulated within hydrogels compared to TCPS. A375s showed similar basal levels of caspase 3 across all culture conditions tested. Both cell types exhibited increases in caspase 3 in response to PLX4032 treatment. (c, d) Fold change in apoptosis due to PLX4032 treatment compared to each respective control for each culture condition. The A375 cells expressed lower fold increases in apoptosis in response to drug treatment compared to the WM35 cells. *$p < 0.05$ compared to respective control condition, #$p < 0.05$ compared to respective condition on TCPS, **$p < 0.05$ between A375 2D hydrogel and 3D PLX4032 samples.

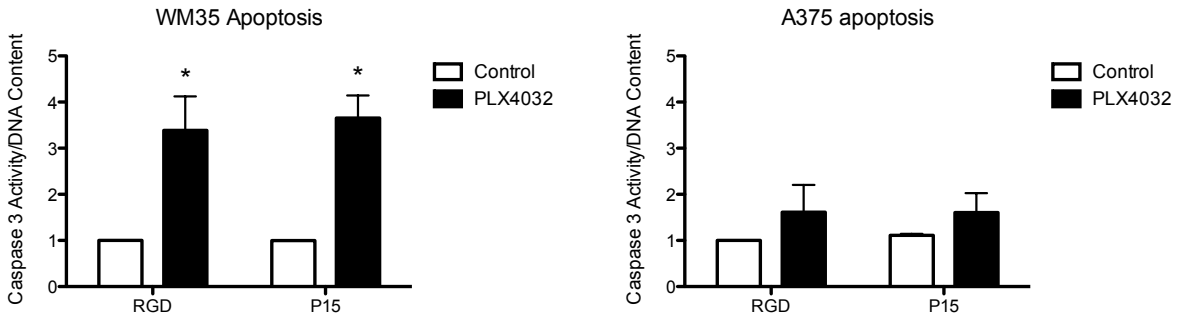

Figure S2. Apoptosis of WM35 and A375 cells in 3D as a function of the adhesive ligand (fibronectin-derived RGD versus collagen I P15 peptide). Apoptosis was measured via caspase 3 activity after 48 hours of drug treatment. The collagen I peptide did not differentially affect caspase 3 activity levels in either cell type compared to RGD. *$p < 0.05$ compared to respective control condition.

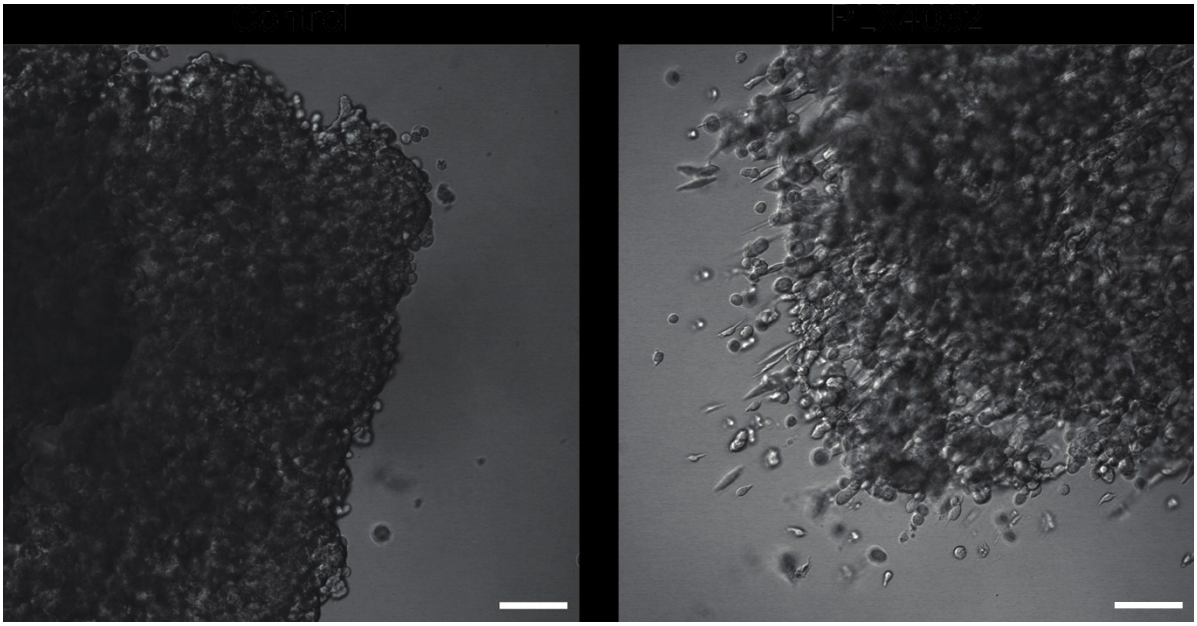

Figure S3. Brightfield images of spheroids encapsulated within PEG-peptide hydrogels. Scale bar, 100 μm.

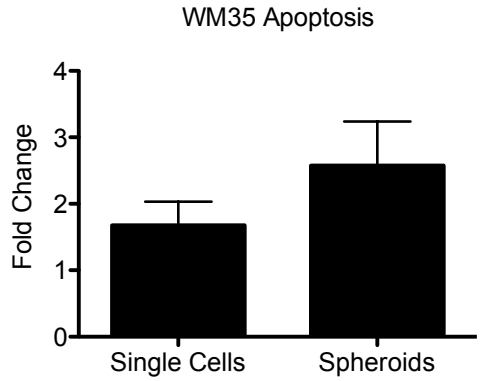

Figure S4. Fold change in apoptosis in single cells versus spheroids. When the caspase 3 activity was normalized to each respective control, the fold change found to be approximately 1.7 and 2.6 for single cells and spheroids respectively. The difference was not found to be statistically significant based on a student's t-test.