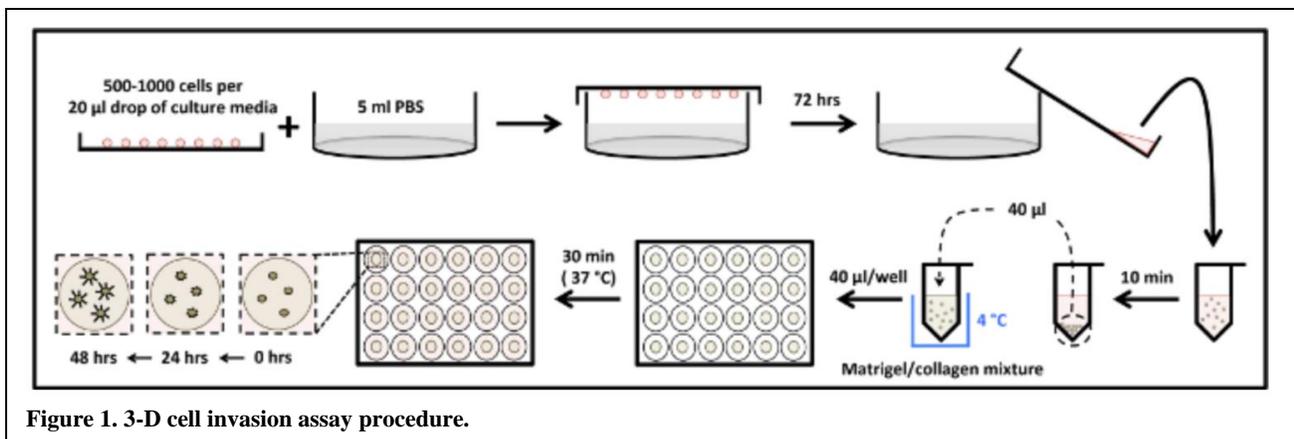


3 Dimensional Cell Invasion Assay with ColloVine™

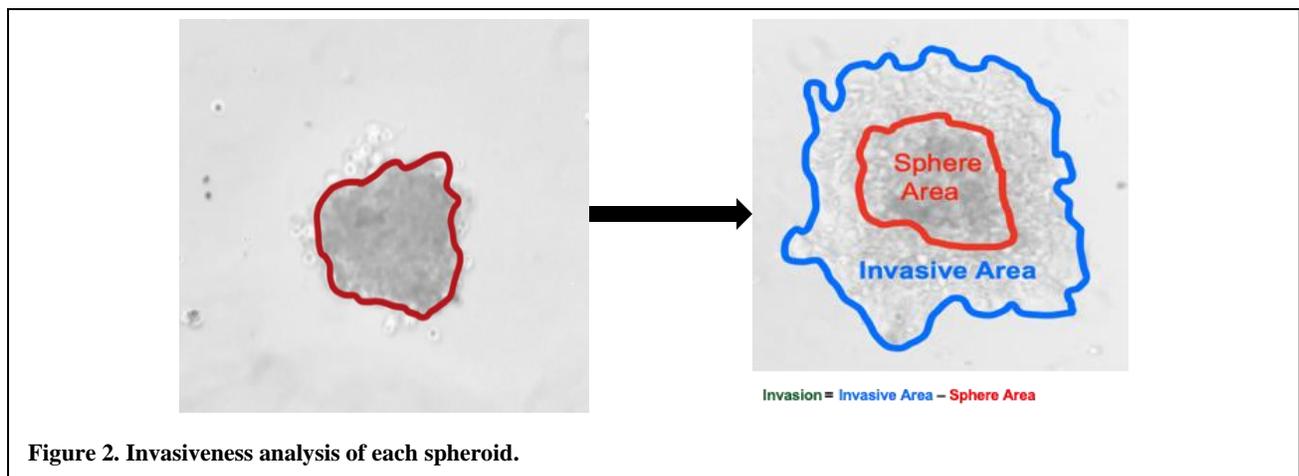
This test compared the performance of OviGenex collagen with Type I collagen from other vendors in a 3-dimensional (3-D) cell invasion assay.

Methods

The 3-D cell invasion assay was performed based on the method described by Berens et al. (*J. Vis. Exp.* (105), e53409, doi:10.3791/53409 (2015)). The BT549 breast cancer cells (ATCC HTB-122) that are highly invasive were used in the assay. The 3-D matrix used in the invasion assay was prepared by mixing either ColloVine, or Type I collagen from other vendors, with Matrigel GFR Membrane Matrix (Corning, Cat: 356230). The cell spheres were imbedded in the 3D matrix and the invasiveness of the cells was analyzed by measuring the expansion of cell front lines. **Figure 1** illustrates the experimental procedure.



The invasiveness of the BT549 cells were observed 24 hr or 48 hr after the spheroids were plated. The invasiveness of each spheroid was determined by the distance of the invasive cell front line (blue) from the original sphere area (red) (see **Figure 2**).



Results

Figure 3 shows that a similar 3-D invasion assay result could be obtained from 3-D matrix prepared with CollOvine at a much lower concentration (0.25 mg/mL) when compared to a rat tail collagen obtained from Vendor A, which was used at a concentration of 2 mg/mL. **Figure 4** shows that CollOvine works well or better than other commercially available collagen in a 3-D invasion assay; it also shows that there is low lot-to-lot variations in function for the CollOvine.

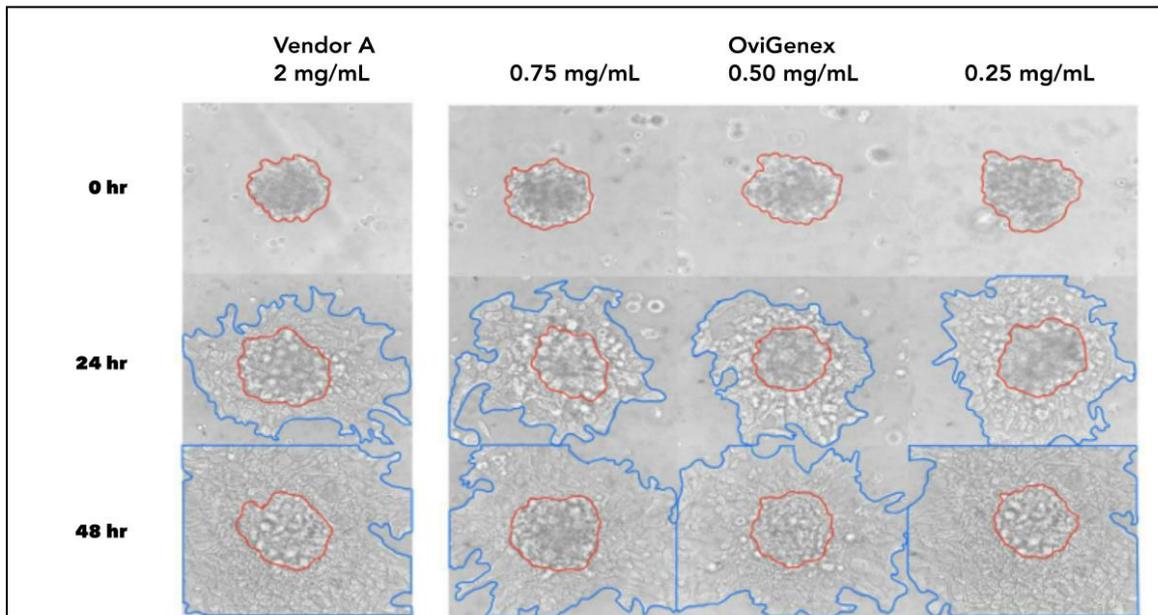


Figure 3. Effectiveness of CollOvine in 3-D invasion assay at lower concentrations.

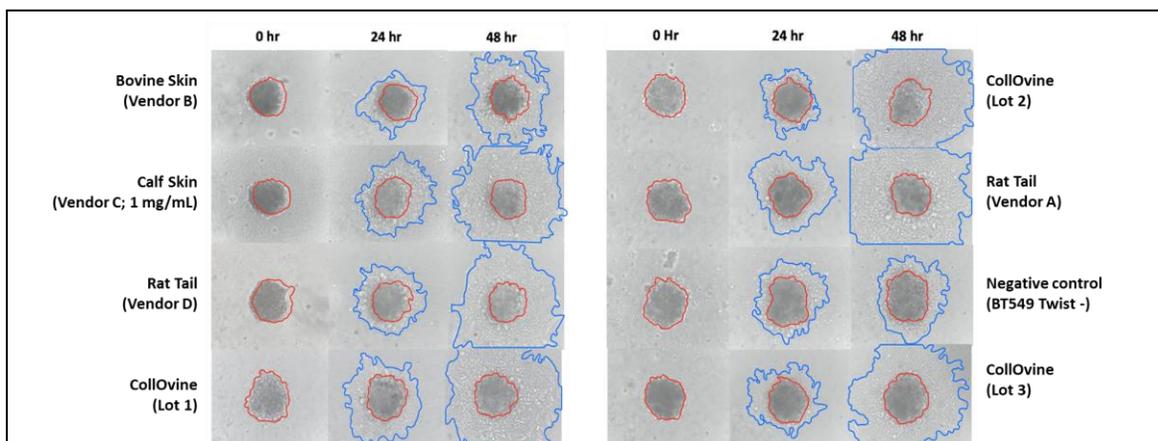


Figure 4. Comparison of CollOvine to collagen from other vendors in a 3-D invasion assay.