Figure 1 shows one field-of-view at each time point, demonstrating wound closure over time. Evidence of cell migration is seen as early as 2 hours post-wound creation and the cell-free space steadily decreases over time as the cells move to close the space completely. Image segmentation allowed quantification of the surface area occupied by cells (Figure 2).

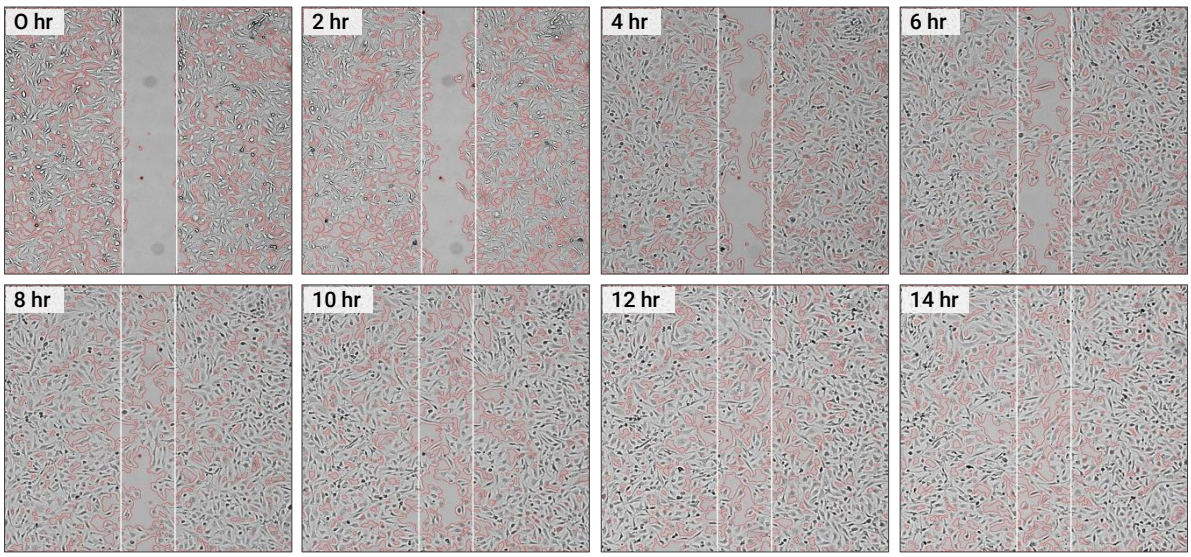

Figure 1. *Image analysis of BAEC cells showing wound closure over time. Red borders illustrate the separation between background and the areas covered by intact cells. The white boxes outline the initial wound site.*

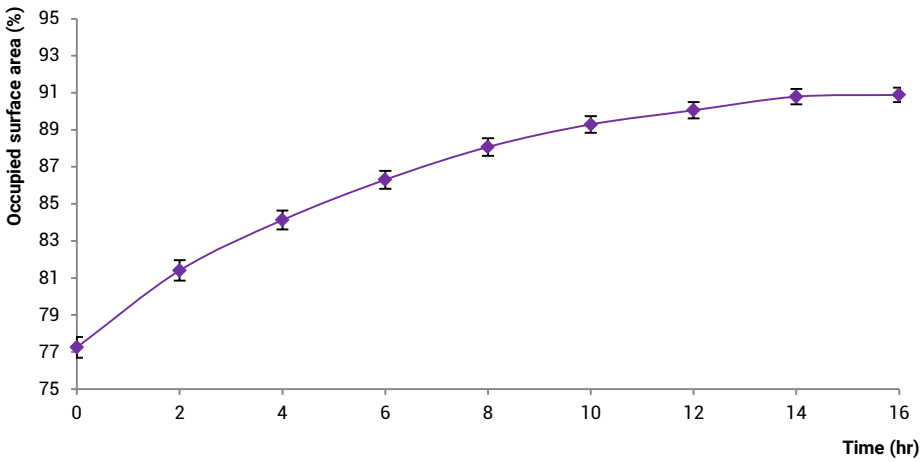

Figure 2. *Quantification of* in vitro *wound healing in BAEC cell images deduced from surface area occupied at the start and end of the experiment. N = 6 wells, 10 fields-of-view per well*

CONCLUSION

In this study, we defined a method to measure cell migration using the CELENA® X High Content Imaging System. Kinetic live cell imaging combined with quanitifcation of the change in cell surface area provides an easy-to-use, reproducible, and objective method to generate accurate cell migration data. Batch processing images for image segmentation analysis on Cell Analyzer is faster and more accurate than traditional image analysis methods. The method presented here can be modified for a variety of diverse experimental conditions and different multi-well plates, making it a high-throughput method for applications such as drug screening.

REFERENCES

Cory G. 2011. Scratch-wound assay. Methods Mol Biol. 769: 25-30.

De loso ML, Pei JV. 2018. An accurate and cost-effective alternative method for measuring cell migration with the circular wound closure assay. 38(5): BSR20180698.

Grada A, Otera-Vinas M, Prieto-Castrillo F, Obagi Z, Falanga V. Research techniques made simple: Analysis of collective cell migration using the wound healing assay. 137(2): e11-e16.

Scianna M. 2015. An extended Cellular Potts Model analyzing a wound healing assay. Comput Biol Med. 62: 33-54.

logos biosystems

Find out more at logosbio.com/cell-imaging/high-content-imaging-system/celena-x