

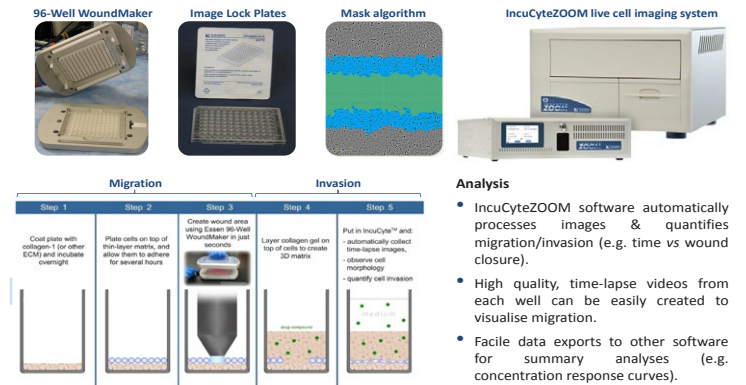
Differential Biology of Tumor Cell Migration and Invasion Through Bio-Matrices Measured with 96-Well Live-Cell Kinetic Imaging Assays

T.Dale, T.O'Callaghan, M. Roddy, K. Patel, S. Alcantara, C. Szybut, D. Appledorn, V. Appledorn, V. Groppi, and D. Trezise
Essen BioScience Ltd, Welwyn Garden City, AL7 3AX UK and Essen BioScience Inc, Ann Arbor, Michigan, 48108 USA

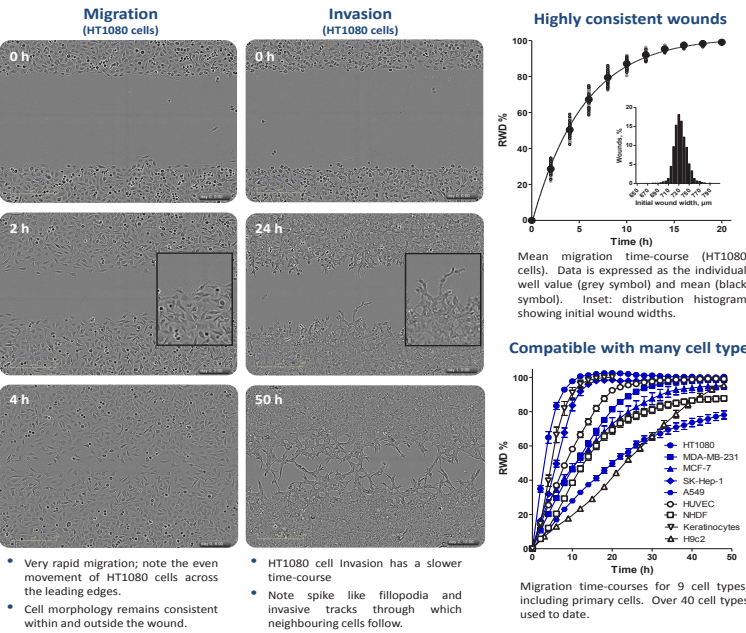
Summary and Impact

- Cell migration and invasion is a pivotal event in a range of physiological and pathological processes including inflammation, wound healing & tumour development
- We have evolved the scratch wound method into an image-based, facile, robust, fully kinetic 96-well model of both cell migration and invasion.
- The approach is amenable to many cell types and screening of small molecules, biologics and gene-interference reagents (e.g. siRNA, miRNA).
- Kinetic analysis reveals temporal differences in the profile of different pharmacological agents.
- Differential pharmacology was seen when a bio-matrix was included in the model. Notably, bio-matrix-dependent effects were also observed.
- This model displays morphological, temporal and pharmacological hallmarks of *in vitro* tumour cell migration and invasion.

96-well Scratch Wound Assay - An Integrated Solution

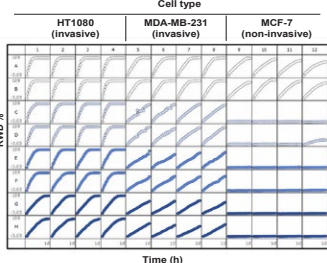


Validation of Cell Morphology and Wound Quality

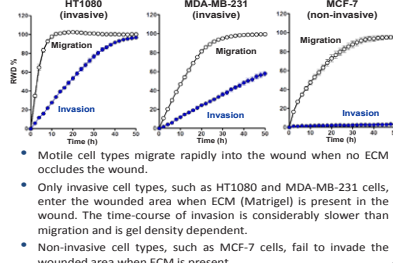


Migration and Invasion Time - Courses

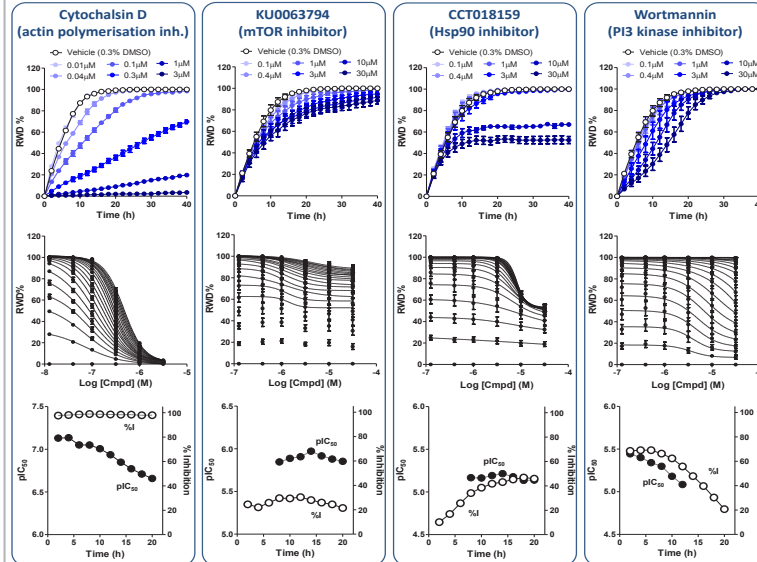
96-well plate view



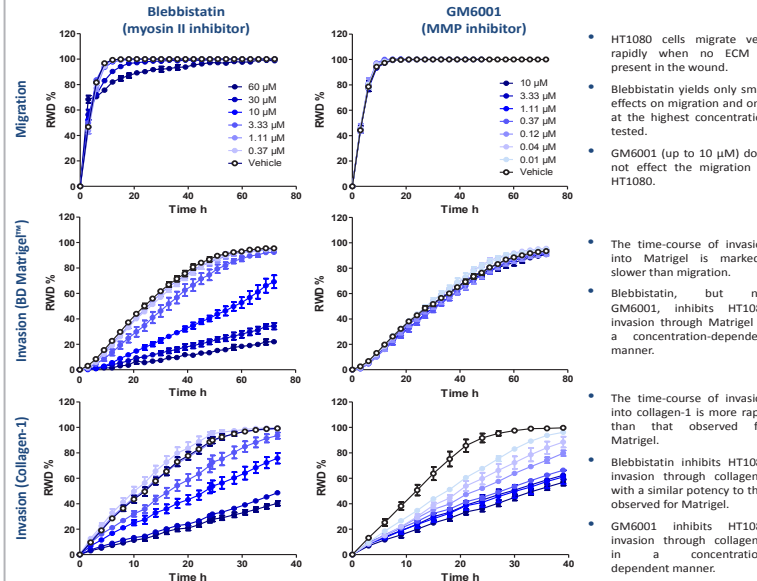
Migration vs invasion (BD-Matrigel™)



Cell Signaling Inhibitors Yield Different Temporal Profiles



Differential Biology of Cell Migration and Invasion



More Complex Models: Invasion in Co-Culture

