

Oris™ Cell Migration Assay

Reveal More Cell Migration Data

The Oris™ Cell Migration Assay offers a versatile method for data capture and image analysis of migrating cells all in the same microplate well. The Oris™ assay utilizes patent pending cell seeding stoppers to create a pristine, 2 mm diameter detection zone in the center of each well. Cells are dispensed into each well of a 96-well microplate populated with the Oris™ Cell Seeding Stoppers. After cells adhere to the surface around the stopper tip, the stoppers are removed and the cells are allowed to migrate into the detection zone.

Cells can be stained and those in the detection zone can be quantified using a microplate reader when the Oris™ Detection Mask is attached to the bottom of the microplate (Fig. 1). Image analysis can be performed without the mask in place allowing for further characterization of the migration events using multiple staining techniques (Fig. 2). Staining live cells at the beginning of the experiment permits real-time images to be captured at any time point. Both end-point and kinetic data can be generated with microplate readers, microscopy or high content imaging systems.

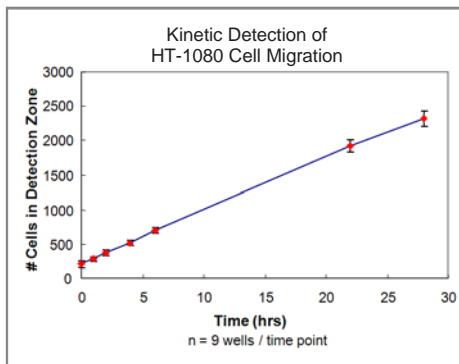


Figure 1. Oris™ Cell Migration Analysis - Kinetic Detection: Wells were seeded with 50,000 HT-1080 cells. Cells adhered after 4 hours and the Oris™ stoppers were removed. All wells received CellTracker™ Green to fluorescently stain the cells. The assay was then incubated for 28 hours to permit cell migration and at various time points the fluorescence in the detection zone was measured using a BioTek Synergy™ 2 microplate reader. The graph depicts a real-time analysis of cell migration that was prepared by transforming the fluorescent signal into number of cells.

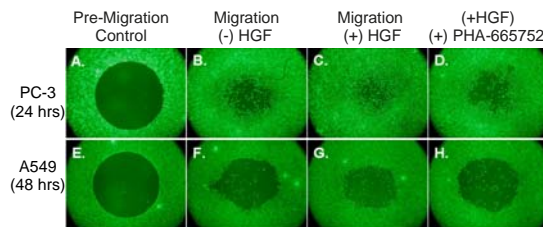


Figure 2. Use of a c-Met Inhibitor to Block HGF-Stimulated Cell Migration: PC-3 and A549 cells were allowed to migrate in growth media (B&F), in the presence of 40 ng/mL Hepatocyte Growth Factor (HGF), and in the presence of HGF and PHA-665752, an inhibitor of c-Met. Cells incubated in HGF (C&G) migrated more completely into the central region compared to those incubated in growth media. The addition of PHA-665752 (D&H) reduced the migration into the detection zone to the levels observed in wells incubated in the absence of HGF.

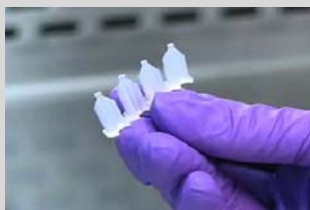
Product Highlights

- **Generate More Data per Well** - Analyze cells treated with multiple fluorescent probes, labels or stains by using a microplate reader, microscope or high content imaging system.
- **Reproducible Results** - Unique design offers lower well-to-well CV's than the scratch assay.
- **Real-time Monitoring** - Changes in cell movement and morphology can be tracked as migration progresses.
- **Membrane-free Cell Migration** - No cumbersome cell culture inserts or transmembrane devices to hinder direct observation of cells; compatible with HTS and HCS applications.

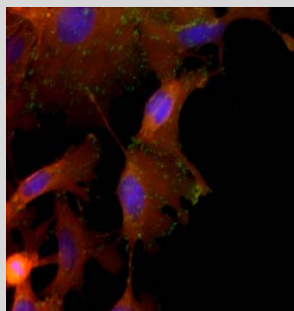
Platypus
Technologies

5520 Nobel Drive, Suite 100, Madison, WI 53711
Toll Free: 866.296.4455
Phone: 608.237.1270
Fax: 608.237.1271
www.platypustech.com

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ORIS™ CELL SEEDING
STOPPERS (patent pending)



MULTIPLEXED
CELL STAINING

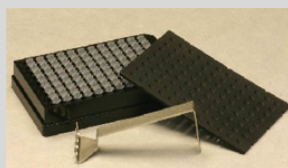


ORIS™ CELL MIGRATION
ASSAY

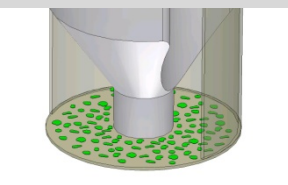
Product Details & Data



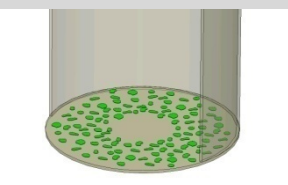
Oris™ Assay Steps



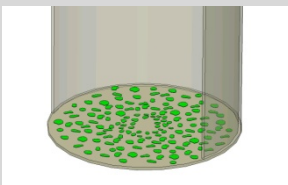
Seed & Adhere Cells onto Oris™ Plate



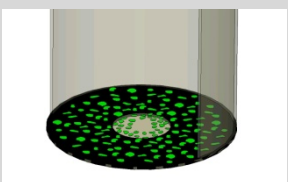
Remove Stoppers to Create Detection Zone



Allow Cells to Migrate into Detection Zone



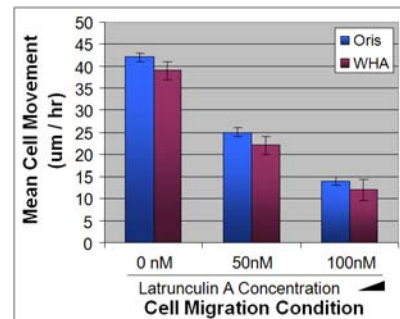
Analyze Detection Zone



Microplate Reader Analysis - with mask
Image Analysis - without mask

Novel Alternative to Scratch Assay

The Oris™ Cell Migration Assay offers an easier, more reproducible alternative to a 2-D wound healing assay (WHA) or scratch assay. A comparison (Fig 3.) of both assays was conducted using HT-1080 fibrosarcoma cells in the presence of varying concentrations of the actin polymerization inhibitor, Latrunculin A. Cells were incubated for 6 hours and allowed to migrate. Images of the wells were captured by using a Zeiss Axiovert microscope to quantify the distance of cell movement into the detection zone. These results demonstrated that HT-1080 cell migration can be inhibited by Latrunculin A in a dose-dependent manner and that the amount of cell movement was similar in both assays. However, the Oris™ Cell Migration Assay demonstrated lower well-to-well CVs than the WHA, which provides for more reproducible data. The graph represents the mean cell movement +/- S.E.M. of at least 7 wells.



Coefficient of Variance (CV)

[Latrunculin]	Oris™ CMA	WHA
0	6%	16%
50 nM	12%	25%
100 nM	19%	42%

Figure 3. Comparison of a Wound Healing Assay (WHA) with the Oris™ Cell Migration Assay (CMA).

Product Listing

PROD. NO.	DESCRIPTION*	SIZE
CMA1.101	Oris™ Cell Migration Assay – Tissue Culture Treated	1- pack
CMA5.101	Oris™ Cell Migration Assay – Tissue Culture Treated	5-pack
CMACC1.101	Oris™ Cell Migration Assay - Collagen I Coated	1- pack
CMACC5.101	Oris™ Cell Migration Assay - Collagen I Coated	5-pack
CMAFN1.101	Oris™ Cell Migration Assay - Fibronectin Coated	1- pack
CMAFN5.101	Oris™ Cell Migration Assay - Fibronectin Coated	5-pack
CMATR1.101	Oris™ Cell Migration Assay – TriCoated Tissue Culture Treated wells, Collagen I wells, Fibronectin wells	1- pack
CMATR5.101	Oris™ Cell Migration Assay – TriCoated Tissue Culture Treated wells, Collagen I wells, Fibronectin wells	5-pack

* All Oris™ Cell Migration Kits are supplied with one Oris™ Detection Mask, one Oris™ Stopper Tool, and either one or five Oris™ microplates populated with Oris™ Cell Seeding Stoppers.

Additional Oris™ Cell-Based Assays and instructional videos are available at www.platypustech.com

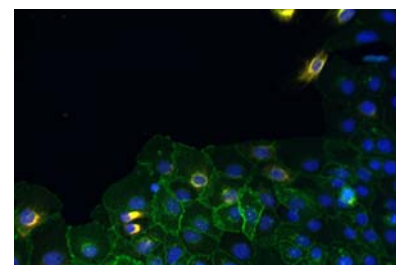


Figure 4. Multiplexed Analysis: NCI H1650 cells were seeded on Oris™ Cell Migration Assay - Fibronectin Coated plates. Migrated cells were fixed and analyzed on a Perkin Elmer Opera™ HCS System for expression of: Nuclei (blue), Vimentin (yellow), and E-cadherin (green).

Platypus
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5520 Nobel Drive, Suite 100, Madison, WI 53711
Toll Free: 866.296.4455
Phone: 608.237.1270
Fax: 608.237.1271
www.platypustech.com

