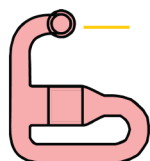


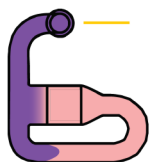
Miniaturized HCA Neutrophil Chemotaxis Assay

Chemotaxis, the movement of cells in the direction of a chemical gradient, is a fundamental process in inflammation. The iuvo Chemotaxis Assay Plate is a new approach for quantitative measurements of cell chemotaxis in a plate designed for use with automated liquid handling and HCA platforms. The plates are constructed in a single piece with no filters or membranes and are compliant with the SBS/ANSI standard for microplates. A chemical gradient is formed at one end of a microchannel and remains stable for several hours. Microscopic imaging of cell movement into the gradient region provides quantitative data on the number of cells migrating and distance traveled.

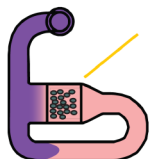
Fully Automated Assay Method in a 96-Point Array



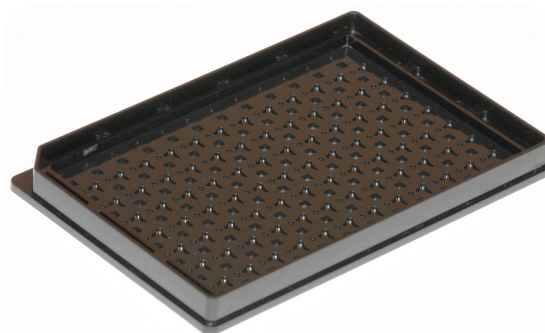
Fill device with 20 μL media through attractant addition port.



Add 3 μL chemoattractant to attractant addition port. Gradient will stabilize in 30-90 minutes.



Add 3 μL (<10,000) cells to cell addition port.



EFFICIENT REAGENT USE

Assay requires less than 12,000 cells per data point.

STABLE GRADIENT

Cells migrate in stable gradient of chemoattractant.

SIMPLE & EASY-TO-USE

Addition-only assay; no inserts or masks required.

AUTOMATABLE

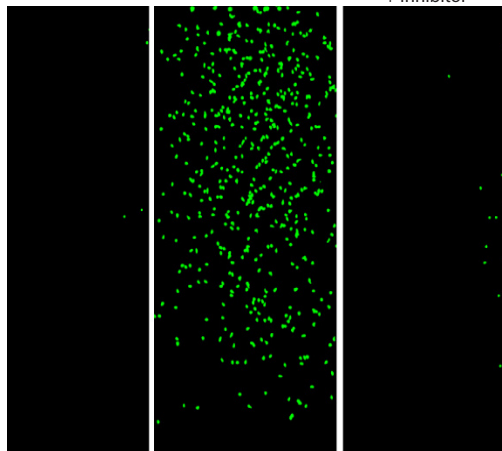
Fully compatible with standard automated liquid dispensing and HCA platforms.

CONVENIENT PROTOCOL

Compound treatment of cells is performed directly in assay plate.

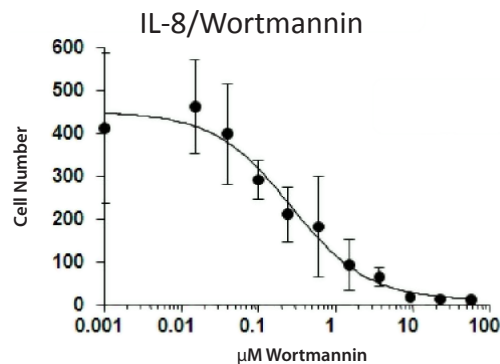
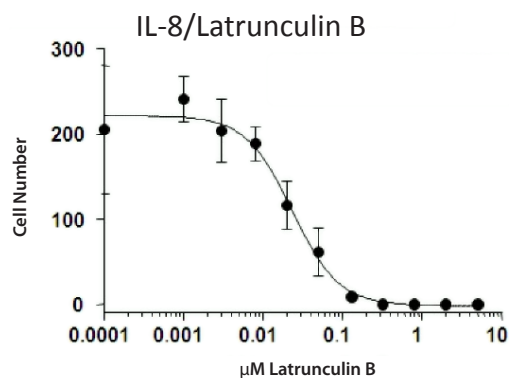
Image-Based Detection

No Chemoattractant Chemoattractant Chemoattractant + Inhibitor



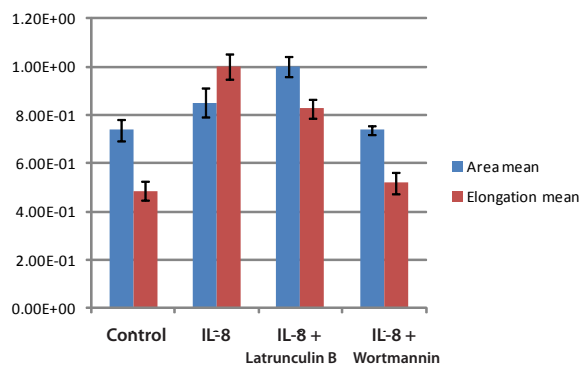
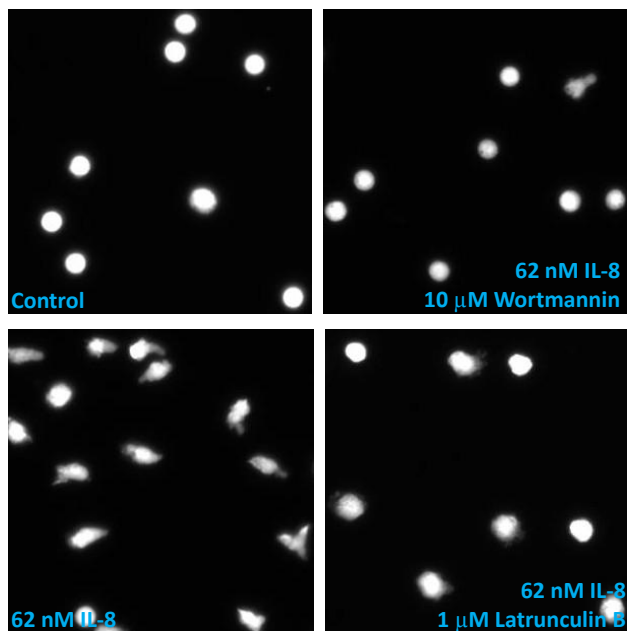
Determination of cell number and distance traveled. 10x images of individual gradient microchannels. Gradient (low to high) is oriented right to left.

Quantitative Inhibitor Profiling



Dose response inhibition of IL-8-induced PMN chemotaxis. ~12,000 cells/channel were pre-treated with the indicated amount of inhibitor in the plate for 30 min. Upon addition of chemoattractant (62 nM IL-8), the plate was incubated for 2.5h. The graphs show the mean and standard deviation for replicates of 4.

Morphological Analysis of Chemotactic Neutrophils



Cells were loaded into the device via wick filling such that neutrophils were present in the gradient region at the beginning of the assay. Cells were then subjected to gradient of IL-8 chemoattractant and inhibitors as noted. 15X images were taken and shown above. Cells were analyzed for elongation (ratio of major to minor axes) and total cell area. Student's T-test was used to calculate p-values as shown in graph.

Ordering Information

Product	Catalog #	Quantity
iuvo™ Chemotaxis Assay Plate	6006	1 Plate (96 microchannels)