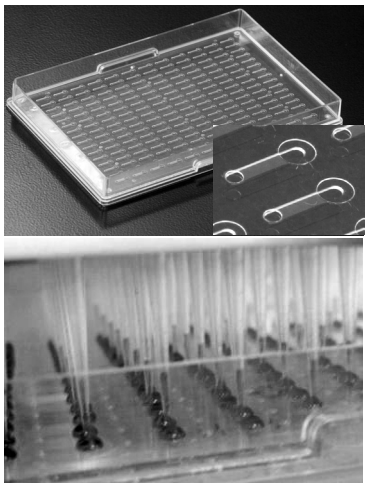
3D Invasion Assays

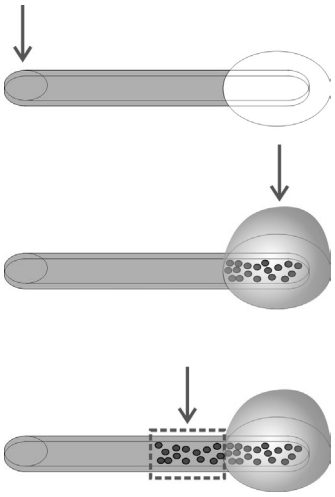
BellBrook Labs

iuvo™ 3D ECM Invasion Assay Profiling Service

Invasion of tumor cells through ECM is one of the hallmarks of cancer, yet the process is poorly modeled *in vitro*, especially in an automated format. BellBrook Labs is now offering compound profiling services for information rich, 3D tumor cell invasion assays using their novel iuvo microconduit array platform. The fully automated assay uses microscopic imaging of cell movement through horizontally-oriented, collagen filled microchannels to provide quantitative data on cell number and distance traveled. Furthermore, the channels facilitate post-assay staining, which dramatically increases the information content of the assays. Offered as an improvement to Boyden chamber assays, Bellbrook's new service is unique in providing quantitative potency measurements on cell migration in a 3D matrix, as well as information on the effect of inhibitors on cell health.

Proprietary iuvo™ Platform Enables High Content Cell Migration Assays:

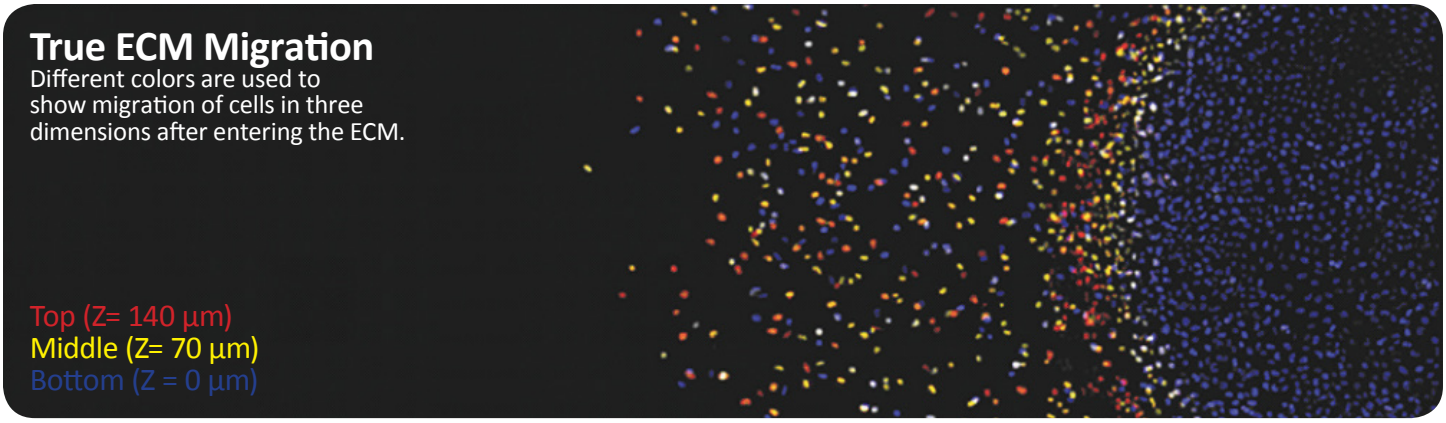




Microchannels are filled with collagen; surface tension prevents flow of collagen into the cell addition port.

Cells with test compounds are added to the cell addition port.

Tumor cells invade the collagen filled channel and migrate in three dimensions.



For a quote, or more information, contact us at 866-313-7881, info@bellbrooklabs.com, or visit www.bellbrooklabs.com

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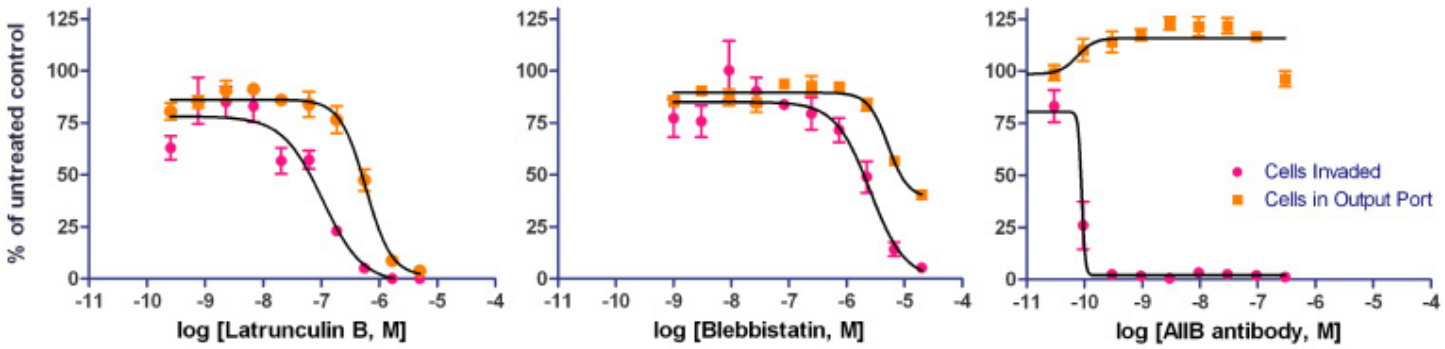
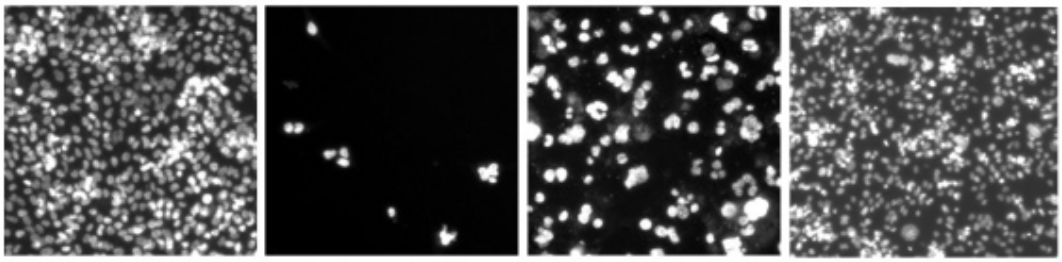
iUVO™ Microconduit Array

3D Invasion Assays

Information Rich Data:

- Number of cells invading, distance traveled, and effects on proliferation.
- Quantitative potency data including IC_{50} and magnitude of effect.
- Differentation between true anti-invasive effects and cytotoxicity.
- In situ molecular staining allows pathway and mechanism analysis.





Upper panel: PC3-M cells were allowed to migrate into type I collagen-filled microchannels over 5 days and media containing a titrated dose of inhibitor was replenished daily. The number of cells that migrated greater than 150 µm was quantified and shown normalized to the untreated control (n = 4). Cells remaining in the output port (origin) were also counted to provide information on the toxicity of test compounds. **Lower panel:** Images of Hoescht stained cells in the output port at the end of the assay, indicating the degree of cytotoxicity.

Rapid Turnaround:

Profiling projects are generally completed within three to four weeks. Reports include raw imaging files and distance traveled for each cell, dose response curves, IC_{50} values, and summary of proliferation/ toxicity effects.

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