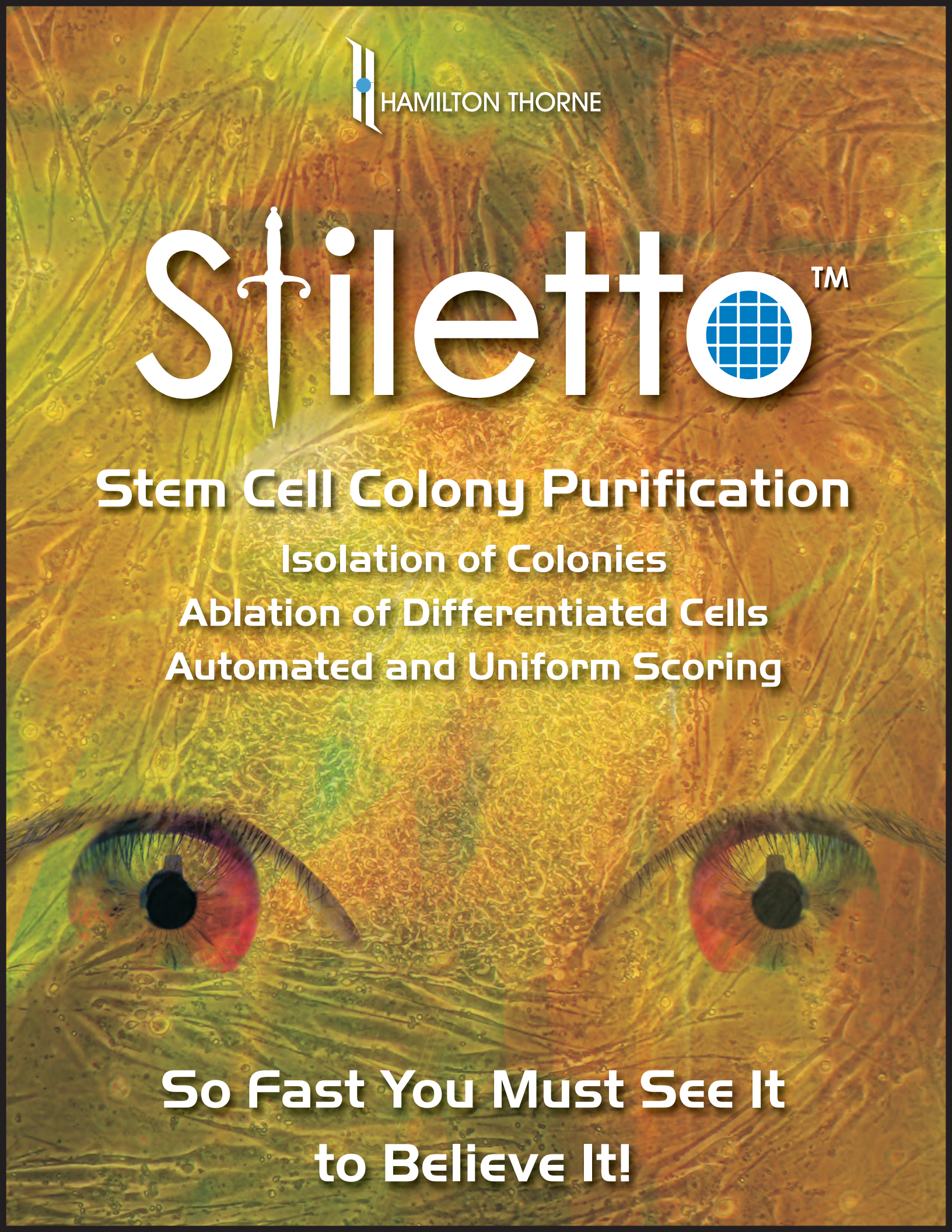

HAMILTON THORNE
Stiletto™
Stem Cell Colony Purification
Isolation of Colonies
Ablation of Differentiated Cells
Automated and Uniform Scoring
So Fast You Must See It
to Believe It!

Stiletto™

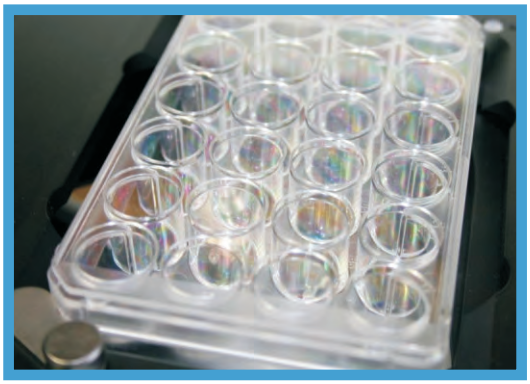
What is Stiletto?

The Stiletto laser system combines a proprietary laser, controller software and an automated stage for high speed scoring and separation of adherent cells in culture, such as stem cells. This represents a new method and technology in which cells are pushed aside from the laser beam in a novel hydrodynamic effect, as opposed to using the laser to superheat or cauterize for cutting. This development minimizes damage to adjacent cells when scoring cell colonies and dislodges cells for easy removal of unwanted cells from culture.

Benefits of Stiletto

- Streamline derivation workflow with Stiletto's automated features
- Select multiple areas across an entire plate and Stiletto automatically ablates cells inside or outside of each designated zone, or along a path
- Integrates seamlessly with your current workflow: no extra preparation needed for your cell samples
- Quickly scores cell colonies into sections of user-defined dimensions
- Offers precision technology that provides consistent results between different users
- Reduces risk of contamination: non-contact laser means plate lid is kept in place during laser application
- Stem cell characteristics and gene expression maintained throughout laser-assisted sequential passaging
- Cost-effective and flexible alternative to closed processing workstations

Stiletto Features

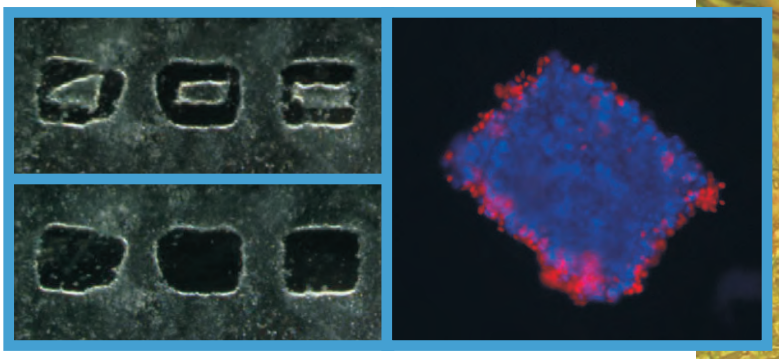


- 20x objective module with integrated laser attaches to the turret like a standard objective
- Automated X-Y-Z stage with "remembered focus" at each selected area
- Proprietary software interface features include:
  - Modes for auto-scoring, ablation within selected area, outside selected area and along a perimeter
  - User-specified well map to easily navigate from well to well
- Designate multiple target areas and modes throughout the entire plate/dish
- Stores parameters and automatically returns to each location to perform the user-defined tasks
- Ability to select target areas under a lower magnification, thereby providing a larger field of view
- Uses your standard petri dishes and multi-well plates - no need to purchase "special" dishes

Stem Cell Colony Purification

Isolation of Stem Cell Colonies

Stiletto streamlines stem cell derivation while giving you complete control over isolation of selected colonies or cell areas. The laser offers more precision and consistency during isolation and passaging than current mechanical methods. Stiletto operates without the removal of the plate lid, which reduces likelihood of contamination. Using low level magnification, wells may be quickly scanned to select the cells to isolate. Once your selections are made and the Stiletto objective is positioned, simply activate the laser and the stage automatically moves to each well where the laser is applied according to the user-defined modes.

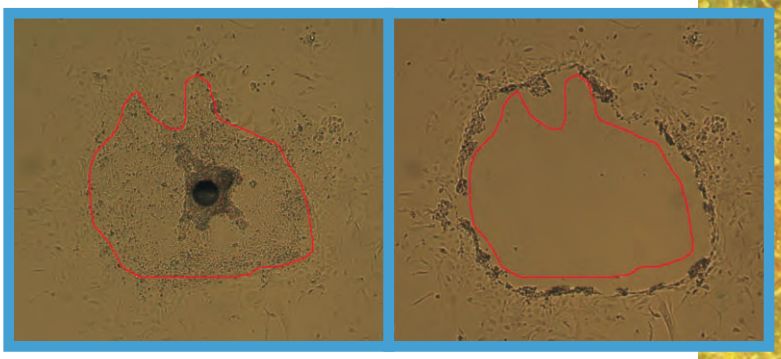


Stiletto Cell Isolation (top)
Post Pipet Removal (bottom)

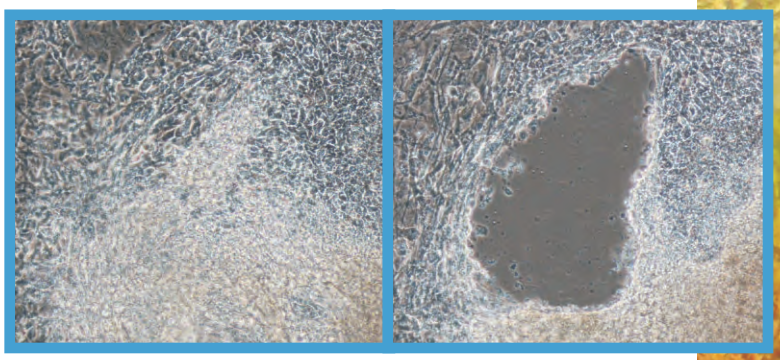
Live/Dead Stain on Isolated Cells

Ablation of Differentiated Stem Cells

By applying the laser pulses, unwanted cell areas are quickly ablated while cells of interest are preserved. The Stileto allows you to designate multiple areas to be targeted for ablation. Using any or all of the built-in path drawing tools, you can choose to ablate along a perimeter path or inside/outside a selected area. This non-contact laser-based elimination of cells permits removal of unwanted cells while preserving the viability and genetic integrity of the stem cell colony throughout sequential passaging.



Before Stiletto Ablation **After Stiletto Ablation**

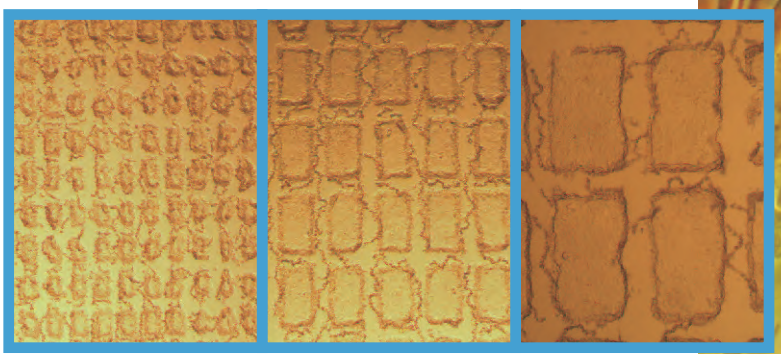


Before Stiletto Ablation **After Stiletto Ablation**

Above images courtesy of Dr. Nikica Zaninovic and Dr. Qiansheng Zhan, Weill Cornell Medical College of Cornell University, New York

Automated and Uniform Scoring

Stiletto gives researchers an opportunity to standardize their protocol for passaging stem cell colonies across all users. Automated scoring results in uniformly sized sections of undifferentiated stem cells and user-defined settings allow precise control over the size of resultant sections.

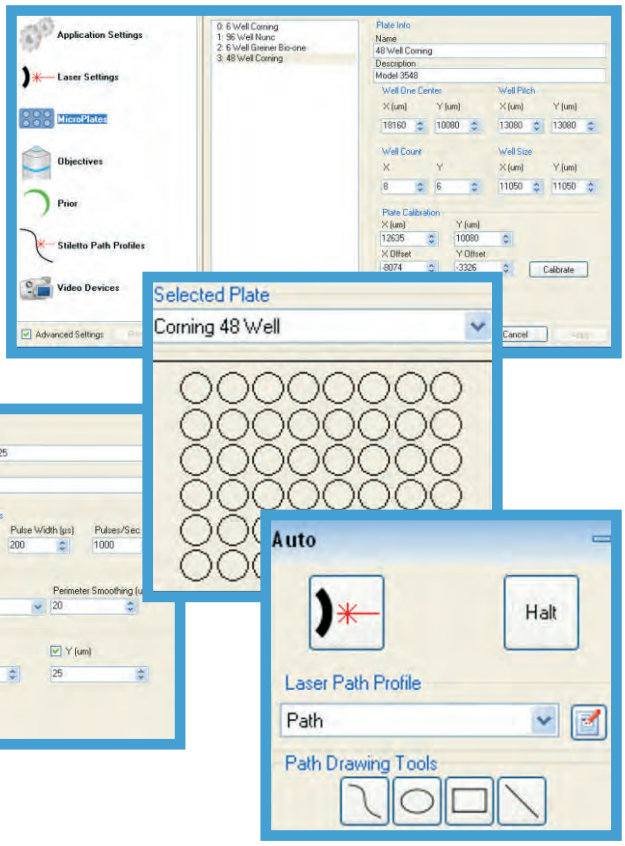


100 x 150 microns **200 x 300 microns** **400 x 600 microns**

View videos of Stiletto in action at hamiltonthorne.com

Stiletto Software

- Save Stiletto path profiles with:
  - Laser power, pulse width, and pulses per second
  - Ablation mode (inside, outside, perimeter)
  - X and Y hatch size, in microns
- Pre-configured clickable well maps for standard multi-well plates plus ability to create new maps
- Elliptical, rectangular, straight line and freehand drawing tools
- Video and image capture
- Calibrate and save multiple objectives for accuracy in well positioning and measurements on captured images
- Image annotation tools
- Easy to use stage controls



Stiletto Components

- Stiletto laser module with 20x fluorescence compatible objective
- Laser controller
- Stiletto proprietary software
- Prior automated stage with stage insert for multi-well plates or dishes
- Digital camera
- Desktop computer with monitor, keyboard and mouse

Stage Top Incubator

- Optional Tokai Hit stage top incubator for precision temperature, humidity and CO_2 control in a compact design
- Various models to accommodate multi-well plates and small dishes

Join our Stiletto email list to be notified of product updates and new applications

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