LYKOS® & ZILOS-tk®

Clinical Laser Systems
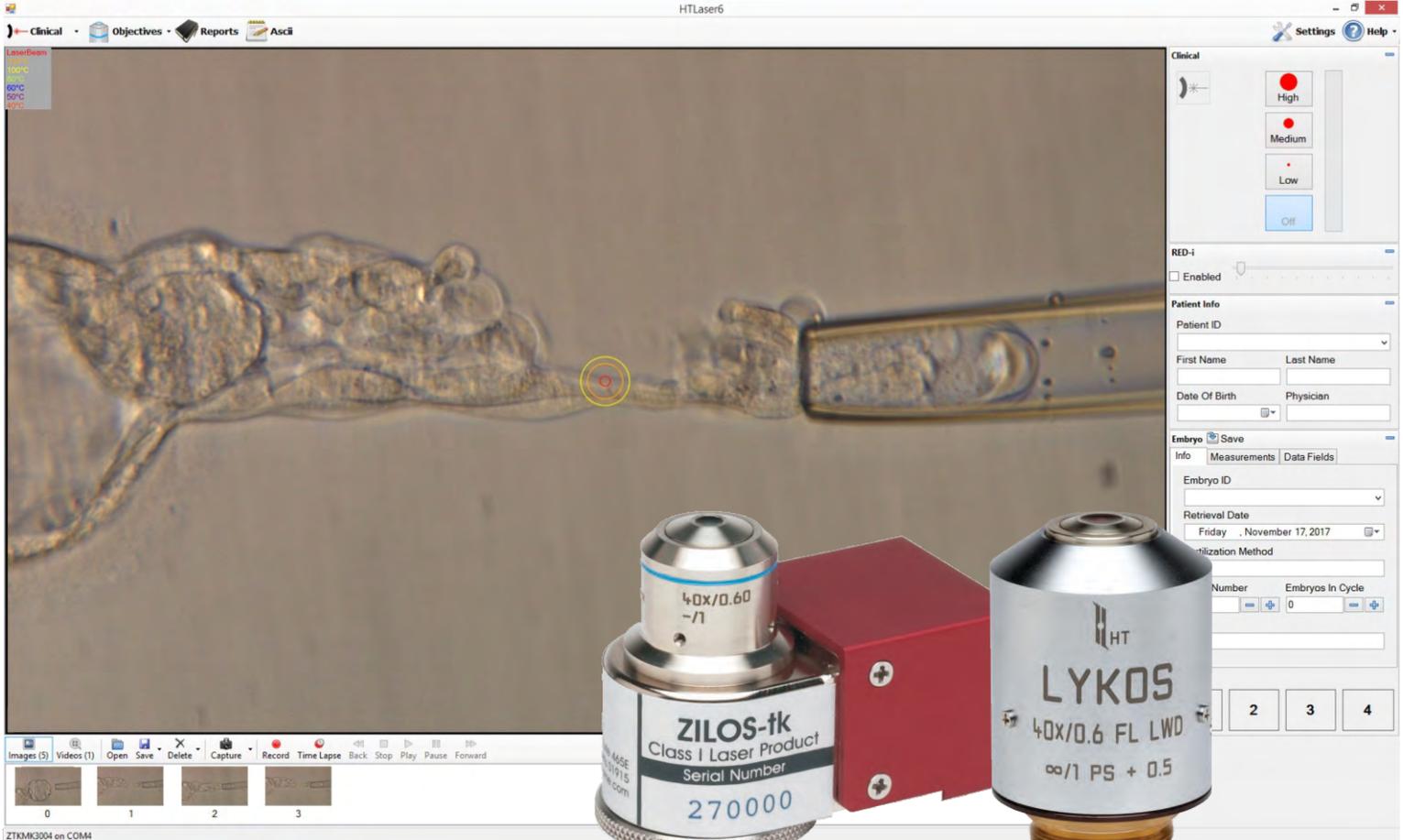
Image courtesy Assisted Conception Unit, Glasgow Nuffield Hospital

Image courtesy Michael Tucker, PhD, Shady Grove Fertility Reproductive Science Center
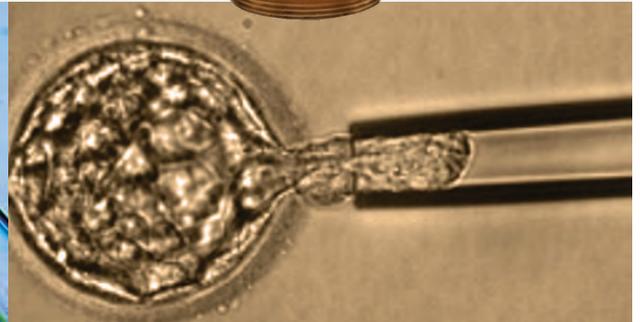
Image courtesy Georgia Kokkali, PhD Genesis Athens Clinic

Trophectoderm Biopsy
Blastomere Biopsy
Laser-Assisted Hatching

HAMILTON THORNE

LYKOS & ZILOS-tk Overview

The hardware and software features of the LYKOS and ZILOS-tk clinical lasers work together seamlessly to provide sophisticated yet easy-to-use laser systems for the ART facility. The LYKOS represents the next generation of clinical lasers from Hamilton Thorne, with both the laser and RED-i® target locator built into a customized 40x objective. Our legacy ZILOS-tk represents a cost-effective alternative for those who do not require the RED-i or multipulse features.

Patented Isotherm Rings™ for Highest Safety

Our hallmark Isotherm Rings is a software generated target visible on the monitor that allows safe positioning of the cell during laser treatment. Only the Isotherm Rings show the peak temperature reached at each position due to the selected laser pulse. Any adjustments made to the laser settings are automatically factored into the calculated Isotherm Rings and immediately shown on the screen.

RED-i® Target Locator (LYKOS only)

The RED-i target locator is visible through the microscope eyepieces. By allowing you to position the cell under the laser beam without looking at the monitor, the RED-i speeds workflow and increases efficiency during laser application. The target spot always remains in focus and has an adjustable brightness level.

Compatible with Fluorescence

The LYKOS and ZILOS-tk do not require removal of any component to use your microscope's fluorescence. The objectives possesses enhanced UV transmission and are compatible with stains such as Hoechst, DAPI, plus others. Note that no therapeutic or clinical laser procedures should be performed under fluorescent illumination.

Multipulse Software Mode (LYKOS only)

The Multipulse Software allows for rapid, repeated firing of the laser for fast and easy trophectoderm biopsy.

Key Features

- Laser is integrated into specially designed 40x objective that produces high quality images
- Functions in visible, infrared and ultraviolet wavelengths
- High-power, Class 1, 1460 nm laser with pulse durations as low as 1 microsecond
- Intuitive Clinical Laser software
- Choice of computer-generated drilling targets, including patented Isotherm Rings™
- Ability to measure captured images minimizes the time the embryo spends outside of the incubator
- Fire laser by mouse or foot switch remote
- Highly portable for travel between facilities
- Easily transferable between different makes and models of inverted microscope
- No laser realignment required
- Fast installation and simple set-up

Version 6 Laser Software & Hardware

The HT Laser 6 software provides the same precise, easy-to-use laser-assisted hatching and embryo biopsy laser application as the legacy software version but features a modern and clean user-interface plus new and enhanced features.

New Features:

- Intuitive, redesigned software interface for maximum usability

- Quick-select Laser mode and Objective menus for easy switching between laser control modes and objectives

- New high resolution, large format digital camera allows full screen imaging and auto exposure

- Increased multipulse enable time permits up to 10 minutes of uninterrupted micromanipulation time

- Integrated patient and embryo database for data and images

- Ability to design unlimited reports and query all saved data for ASCII export

- Language localization for English, French, German, Spanish, Russian, Japanese, and Simplified Chinese

Complete ART workstation including clinical laser system, TrakJector micromanipulators, ZEISS AxioObserver 3, VibeXpassive anti-vibration platform and Tokai Hit ThermoPlate

Clinical Software Features

Image Capture

- Save images with or without the target overlay
- Capture image automatically upon laser firing
- Save images with File Name Stamp and auto-labels
- Automatic image naming using user-defined root name or report name
- Magnification value saved with image

Real-time and Time-lapse Video Capture

[Time-lapse video capture should not be used for therapeutic or diagnostic procedures.]

- Record real-time or time lapse video of the current image field at the touch of a button
- Files saved as standard .mp4 video format
- Automatic video file naming using user-defined root or report name

Image Auto-labeling

- User-defined auto-labeling allows creation of multiple labels
- Choose from date, time, objective information and report input values (such as patient name and embryo ID)
- Designate specific location of each label on image

Freehand Text/Drawing/Measuring Tools

- Add custom text using any available font type and style, in any system color
- Draw ellipses, rectangles or lines, select outline thickness and color
- Measure any aspect of the captured image

Integrated Database and Reporting

- Save patient and embryo information
- Save data from multiple cycles
- Design unlimited reports
- Ability to select any stored data for output to ASCII file

Clinical Laser System Components

- 40x LYKOS objective or ZILOS-tk module with built-in Class 1 laser diode (1460 nm)
- RED-i Target Locator (LYKOS only)
- Proprietary laser software
- Adapters for installation on inverted microscopes
- Laser controller box
- High resolution color digital camera, with de-magnifier c-mount adapter.

- Choice of small form factor desktop system with 24" HD widescreen monitor or laptop system
- Remote foot switch for firing laser