

New Version 8.0 Software for the Hitachi FMBIO® Fluorescence Imaging System

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BACKGROUND

The Hitachi FMBIO® II Fluorescence Imaging System is a laser-based, fluorescent scanner featuring a 20mW solid-state yttrium aluminum garnet (YAG) laser. The FMBIO® II System produces extremely high resolution images capable of resolving even single-base variants, making it an effective system for DNA typing and sequencing applications. Multicolor imaging is achieved using band-pass detection filters to discriminate light from a variety of fluorescent dyes emitting between 500 and 700nm. Up to four filters for fluorescence discrimination can be stored in the instrument and accessed via the system's software. Two colors can be scanned simultaneously in only 15–20 minutes. Additional high-throughput capacity is achieved by scanning gels after electrophoresis is complete. One instrument can process many more gels per day than instruments that are dedicated to a single electrophoresis unit.

The FMBIO® II Fluorescence Imaging System is a complete system for DNA analysis that includes the scanner, a computer and three powerful software programs: ReadImage, FMBIO® Analysis Software and STaRCall™ Genotyping Software.

UPGRADES

Hitachi Genetic Systems is pleased to announce a new, significantly upgraded version 8.0 of the FMBIO® Analysis Software for the fluorescent detection and identification of PCR-amplified DNA. While the FMBIO® II Fluorescence Imaging System is designed to increase the reliability and efficiency of DNA detection using the latest fluorescence technology, the FMBIO® Analysis Software features the latest in genetic analysis techniques. As a complement to the FMBIO® Analysis Software, the STaRCall™ Genotyping Software is an analysis package that uses STR (short tandem repeat) data such as base pair size and allelic ladder comparisons to report individual genotypes, the final step in human identification. The STaRCall™ Genotyping Software has also been upgraded to allow analysis of the additional STR loci available with the new GenePrint® PowerPlex™ 2.1 System. Genotype data generated with STaRCall™ can then be easily converted into a CODIS (Combined DNA Indexing System) compatible format, allowing for easy uploading of all CODIS core STR loci into the system.

Based on input from our users, two major new features have been added to the FMBIO® Analysis Software. The first new feature is the ability to save parameters as a template for application to future gels. Figure 1 shows the "1D Preferences" screen that is used to save parameters such as a color separation matrix, number of lanes on the gel, autobanding and output information, gray level adjustment, marker settings and on-screen data display. Each of these parameters can be saved individually or in combination and applied to similar gels so that analysis can be performed with just a few clicks of the mouse. This creates a standardized analysis procedure with easier-to-use software and the potential to cut analysis time in half.

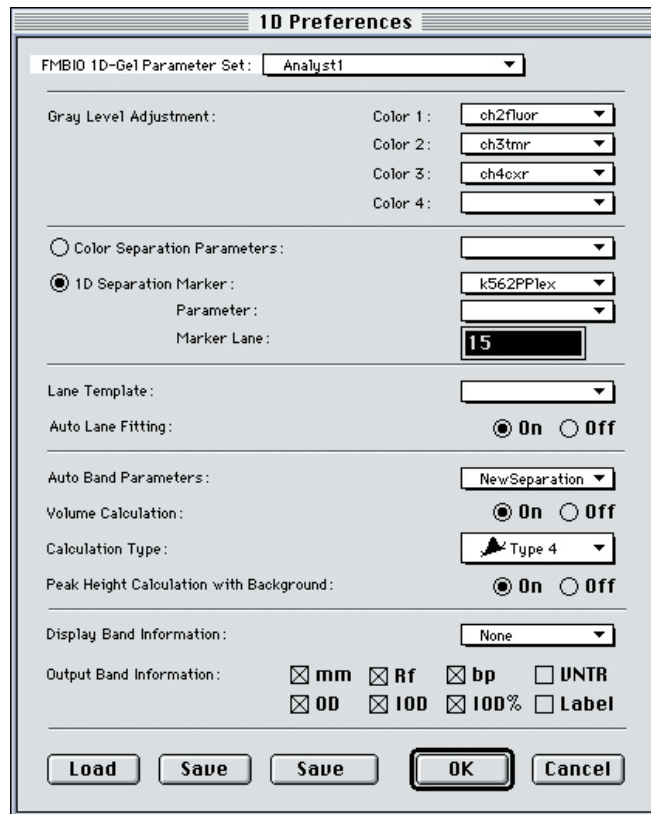


Figure 1. FMBIO® Analysis Software “1D Preferences” screen.

The second significant new feature is “Improved Color Separation” for more accurate definition and separation of different fluorescent signals. One sample, a positive control for instance, can now be selected and saved as a matrix for color separation and background calculation. Utilizing this method, an entire lane, instead of just one band, is now used to detect and minimize color bleedthrough. This means the user will no longer need to select bands for each color every time a gel is analyzed. Background calculations also are more accurate because the

value is now an average of all background in the selected lane, not just a portion included with individually selected bands. The combination of a new user interface and an improved color separation process provides more rapid and accurate analysis of multi-color gels, such as those generated with the *GenePrint*® PowerPlex™ Systems.

For more information regarding the Hitachi FMBIO® Systems, please visit Hitachi’s website at www.hitachi-soft.com or Tel (in the U.S.): 800-624-6176.

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