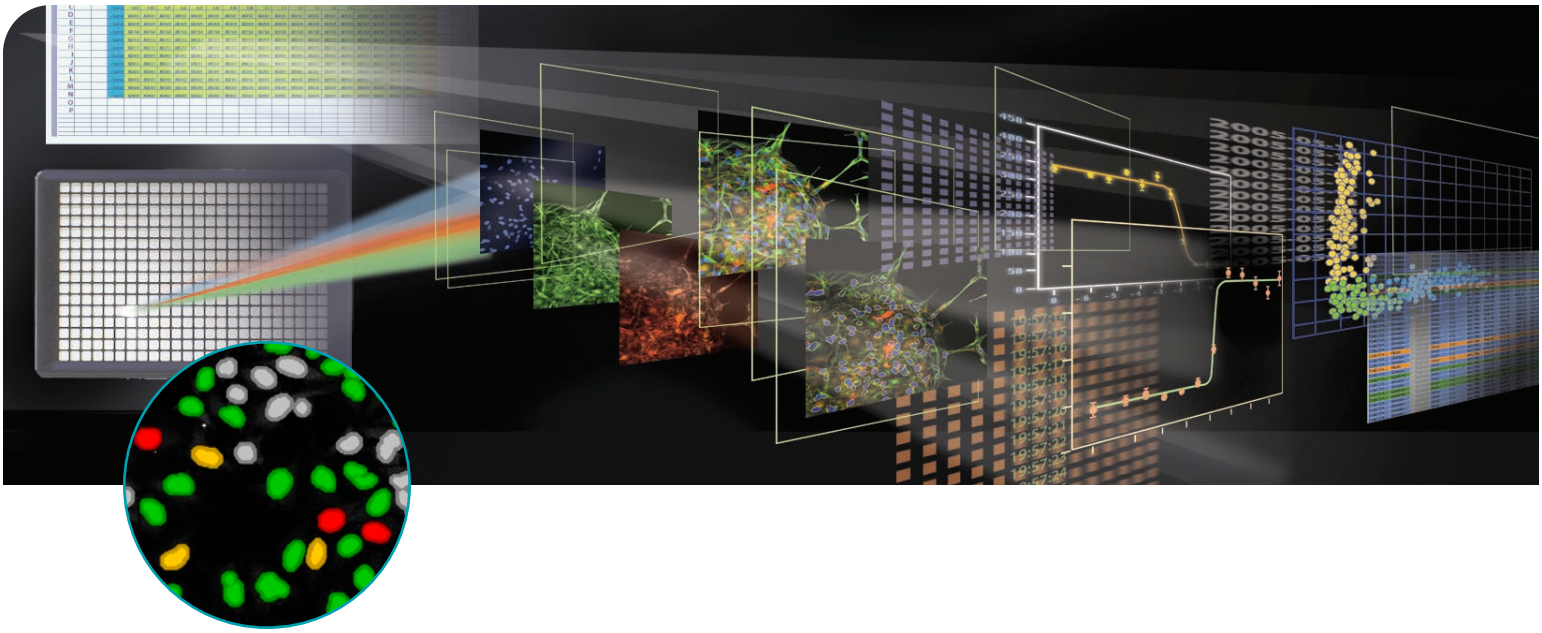
Molecular Devices

MetaXpress Software Multi-Wavelength Translocation Application Module

ANALYSIS SOFTWARE DROP-IN FOR METAXPRESS SOFTWARE



- DESIGNED FOR MULTIPLEXING TRANSLOCATION ASSAYS
- MULTI-PARAMETER ANALYSIS OF UP TO SIX PROBES
- ADAPTIVE BACKGROUND CORRECTION FOR IMPROVED SEGMENTATION
- FIELD AND CELL-BY-CELL MEASUREMENTS

The intracellular localization and redistribution of molecules (*i.e.* translocation) during signal transduction is a key application in cellular imaging. Since most signaling pathways involve multiple translocation events, the Multi-Wavelength Translocation Application Module from Molecular Devices is designed for the combination, or multiplexing, of multiple translocating probes into a single assay. The module allows for simultaneous measurement and scoring of up to six translocating probes labeled with different colors and provides combined cellular information beyond that of single probe assays, enabling a variety of pathway profiling studies in a single well.

This application module takes pathway analysis further by allowing the study of one signaling pathway in depth, such as the various members of the NF-κB signaling pathway IKK, IκB and NF-κB, or the analysis of multiple signaling pathways at once, such as kinases of the Jun family and transcription factors such as NF-AT or the multiple members of the STAT family of transcription factors.

As with all MetaXpress® Software Application Modules, it utilizes Adaptive Background Correction, an image analysis algorithm that provides the most robust segmentation available. This technique enables probe detection even with highly variable background fluorescence within a single image.

An easy-to-use interface minimizes setup efforts and at the same time enables users to customize the settings and measurements to obtain the best possible results specific to the type of cells used in the experiments.

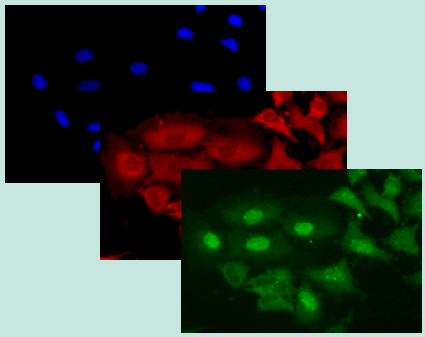
INTERACTIVE DATA DISPLAY

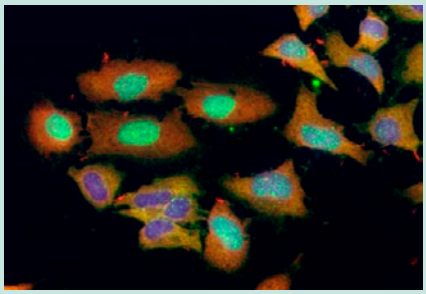
Once the analysis is completed, the Cellular Results table allows data from individual cells to be viewed interactively. Selecting a cell in the image highlights the data for the selected cell in the table.

CUSTOMIZATION THROUGH MACROS

MetaXpress Software is seamlessly integrated with the power and flexibility of MetaMorph® Software and its sophisticated and powerful macros that record and perform a series of tasks without having to know a programming language.

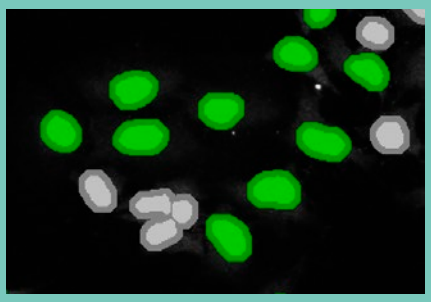
Multiple Wavelengths





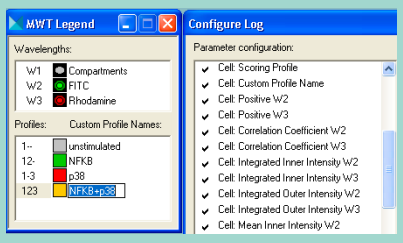
MetaXpress Software provides a flexible integrated solution for Multi-Wavelength image acquisition and analysis. HeLa cells were stimulated with IL1-B for 30 minutes, then fixed and stained with DAPI (blue), anti-p38 with Alexa Fluor 546 secondary detection (red), and anti-NFκB with Alexa Fluor 488 secondary detection (green). Images courtesy of John McLaughlin, Rigel Pharmaceuticals, Inc.

Accurate Segmentation



Adapative Background Correction ensures accurate detection of cells from the images shown above. The Multi-Wavelength Translocation Application Module displays interactive graphics overlaid on the original images indicating scoring for each wavelength for immediate verification of accuracy. The module also generates an optional segmentation image.

Customization



Wavelength and profile naming, graphics colors and measurement parameters can all be customized to match the biology of your experiment. All settings can be saved for future experiments.

VALIDATED DATA

Development of application modules includes research and testing with a library of in-house and third-party data sets. All application modules are validated by scientists at Molecular Devices and customer sites.

POWERFUL DATA EXPORT CAPABILITIES

All measurements can be directly exported to Oracle® and Microsoft® SQL database formats, a text file, or a Microsoft Excel® document.

MULTI-PARAMETER ANALYSIS

Measurements include:

- Wavelength-specific count and percentage of positive cells
- Total and scoring profile count
- Wavelength-specific correlation coefficient
- Wavelength-specific intensity statistics
- Estimated background intensity
- Area statistics

CONFIGURATION FOR ANALYSIS

Set the number of wavelengths used and repeat the following steps:

1. Select the image of interest.
2. Specify approximate minimum and maximum widths of the objects to be detected.
3. Adjust detection sensitivity by specifying the intensity above local background.
4. Set positive classification criterion (minimum correlation coefficient).
5. Optionally specify the reporting parameters.
6. Repeat for each wavelength.

ORDERING INFORMATION

Multi-Wavelength Translocation Application Module for MetaXpress Software
Part Number: 9500-0044

SALES AND SUPPORT

- USA & Canada +1-800-635-5577
- Brazil +55-11-3616-6607
- China (Beijing) +86-10-6410-8669
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