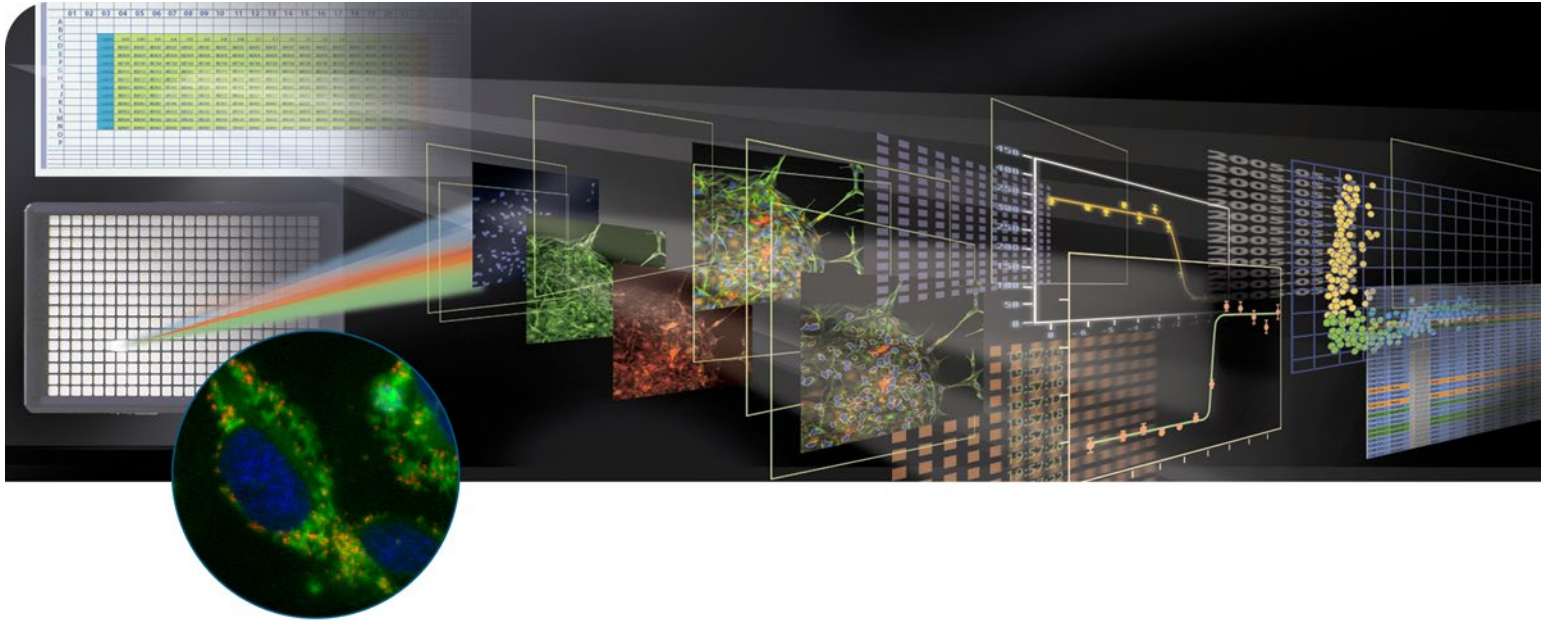


MetaXpress Software Cell Health Application Module

ANALYSIS SOFTWARE DROP-IN FOR METAPRESS SOFTWARE



- ANALYSIS OF UP TO THREE FLUORESCENT PROBES
- ADAPTIVE BACKGROUND CORRECTION FOR IMPROVED SEGMENTATION
- FIELD AND CELL-BY-CELL DATA LOGGING

Cell-based assays for cell health have become critical for drug discovery and development. In some diseases, such as cancer, mutations may cause apoptotic pathways to malfunction, allowing uncontrolled proliferation of tumorigenic cells. In contrast, premature cell death is a problem in many neuronal diseases including Parkinson's and Alzheimer's, as well as in many immune and autoimmune diseases.

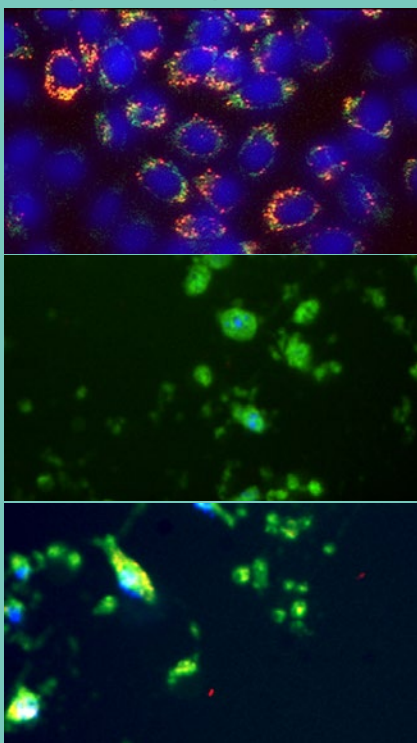
Cell-based assays provide an efficient method of modeling the toxicological effects of drugs and for discriminating anti-proliferative effects from induction of apoptosis or necrosis. Identification of the mechanism of cell death may allow for modification of the potential drug and prevention of unintentional toxicity.

The Cell Health Application Module for MetaXpress® Software from Molecular Devices is designed for the analysis of cell-based assays of apoptosis and necrosis using three different dyes.

A variety of commercially-available fluorescent probes, such as Molecular Probes Vybrant® #3 and #7, have been developed to discriminate cells undergoing apoptosis from cells undergoing necrosis. Using MetaXpress Software, multiple dyes can be visualized by their own unique fluorescence emission.

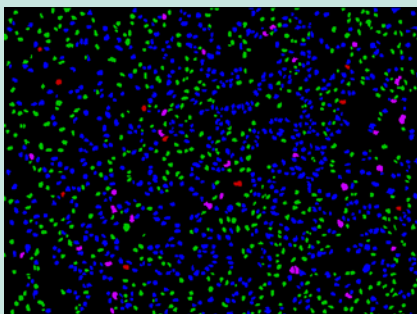
A simple interface minimizes set-up efforts and provides the flexibility to customize settings to suit a specific experiment. The module includes Adaptive Background Correction (ABC) to provide more robust segmentation and assay repeatability. ABC automatically corrects uneven backgrounds throughout the image by adapting to local content.

Multiple Probes Acquisition



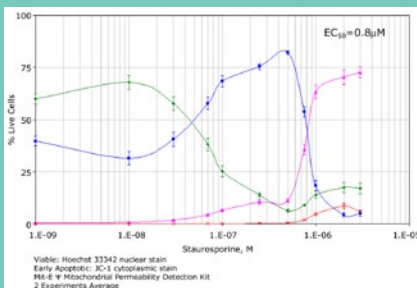
Adherent Chinese Hamster Ovary (CHO-K1) cells were incubated with various concentrations of staurosporine. From top to bottom: control, 0.1 μM staurosporine, and 3 μM staurosporine. BIOMOL International's Mit-E- Ψ Mitochondrial Permeability Detection (Hoechst 33342 + JC-1). Courtesy of BIOMOL International. Images acquired on Molecular Devices' Discovery-1™ System.

Image Analysis



Green: viable, blue: early apoptotic, purple: late apoptotic, red: necrotic.

Data Export for Further Analysis



Measurements can be exported to a spreadsheet program for further analysis. Green: viable, blue: early apoptotic, purple: late apoptotic, red: necrotic.

CONFIGURATION FOR ANALYSIS

1. Select the nuclear stain image
2. Set the minimum and maximum width
3. Determine the intensity above local background
4. Select the apoptotic stain image
5. Specify the stained area (nucleus, cytoplasm or both)
6. Set the minimum and maximum cell width
7. Determine the intensity above local background
8. Repeat steps 4-7 for dead staining
9. Optionally choose the reporting parameters

INTERACTIVE DATA DISPLAY

Once the analysis is run, the Cellular Results table allows you to interactively view individual cells' data. Clicking 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 the need for a programming language.

VALIDATED DATA

Development of application modules includes research and testing with a library of in-house and third-party data sets.

POWERFUL DATA EXPORT CAPABILITIES

All measurements can be directly exported to ORACLE®, Microsoft® SQL, a text file or Microsoft® Excel®.

MULTI-PARAMETER ANALYSIS

The application module can generate a broad range of parameters, including:

- Counts of viable, early and late apoptotic, and necrotic cells
- Percent of viable, early and late apoptotic and necrotic cells
- Area, integrated and average intensity of nuclei

ORDERING INFORMATION

Cell Health Application Module for MetaXpress Software

Part Number: 9500-0035

FOR MORE INFORMATION

Check our web site

www.moleculardevices.com/mx

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