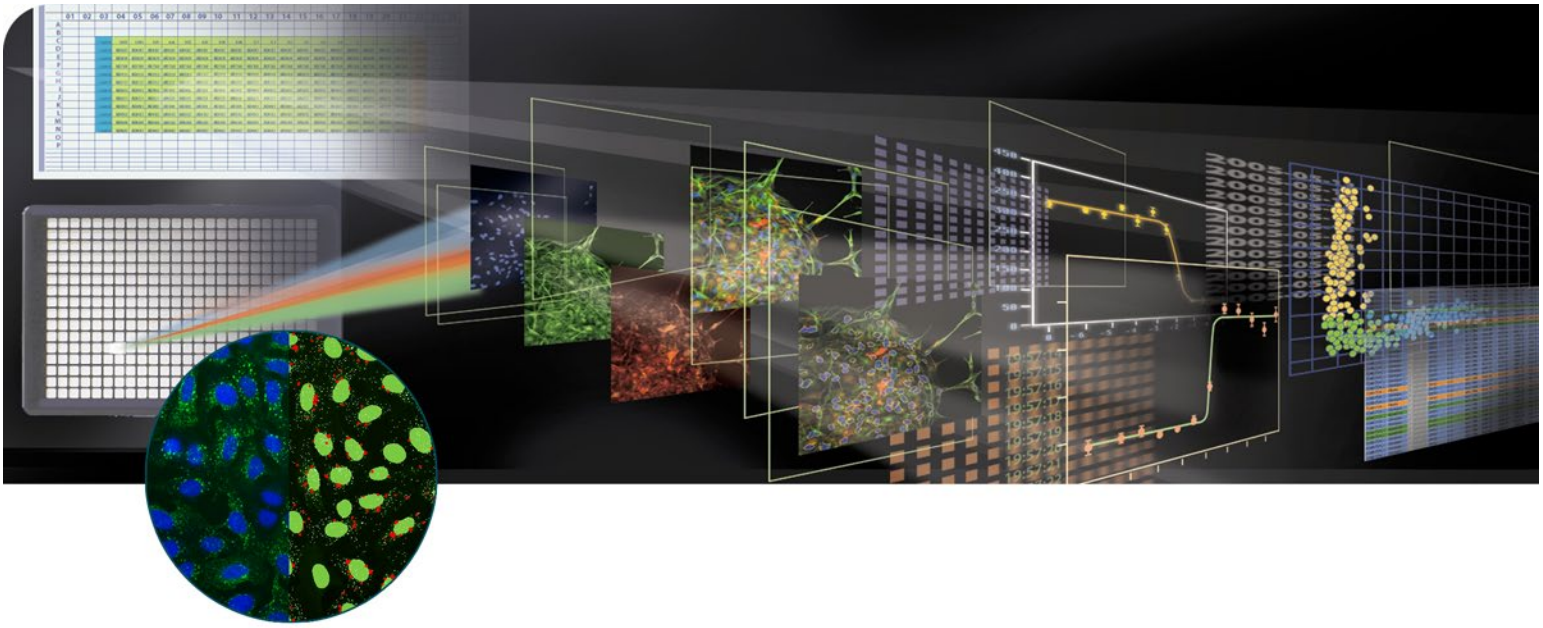
Molecular Devices

MetaXpress Software Transfluor Application Module

ANALYSIS SOFTWARE DROP-IN FOR METAXPRESS SOFTWARE



- → OPTIMIZED FOR TRANSFLUOR ASSAY
- → SIMULTANEOUSLY COUNTS PITS AND VESICLES
- → ADAPTIVE BACKGROUND CORRECTION FOR IMPROVED GRAIN QUANTITATION
- → CHOICE OF SIX GRANULARITY INDICES
- → FIELD AND CELL-BY-CELL DATA LOGGING

The Transfluor Application Module for MetaXpress® Software from Molecular Devices is designed to facilitate the analysis of receptor internalization specifically for the Transfluor assay.

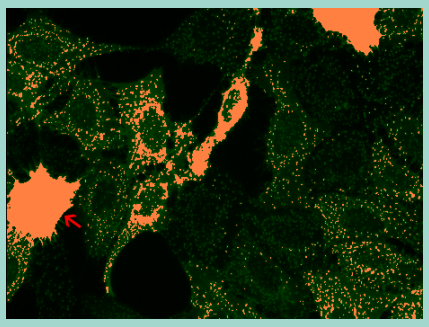
Transfluor measures the redistribution of GFP-labeled β-arrestin to the plasma membrane upon activation and subsequent desensitization of the receptor. High resolution images reveal punctated cells, with the fluorescent signal concentrated in clathrin-coated pits on the cell membrane or internalized in vesicles. The module provides an easy and versatile way to quantitate these fluorescent "grains."

SUPERIOR QUANTITATION THROUGH SUPERIOR SEGMENTATION

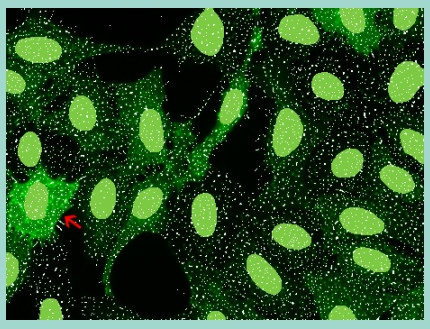
Precise, rapid granule quantitation is achieved by simply specifying grain size, and optionally the nucleus size, for normalized results. The user can specify the size of both pits and vesicles, if counting both is desired. By utilizing Adaptive Background Correction, the module adapts the pit, vesicle and nucleus detection algorithm to the local intensity ranges within cells to provide the most robust segmentation available in an image-based screening system. This enables granule detection even with highly variable background fluorescence within a single image.

The user can select from six granularity indices, choosing the one that best suits the cell and receptor type, cell density and other assay parameters. The granule count, area and intensity per-cell as per-image can be captured.

Adaptive Background Correction for Improved Segmentation

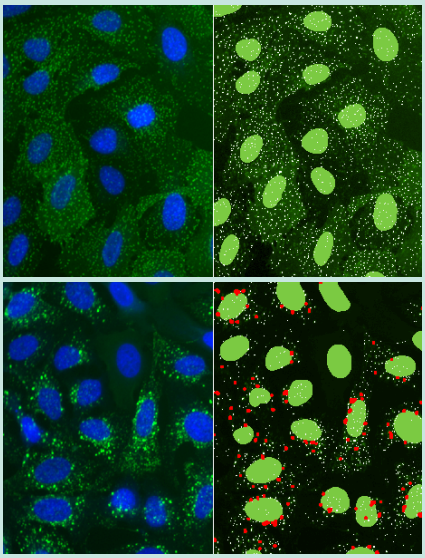


Using standard thresholding can result in incorrect grain counts (orange), Adaptive Background Correction improves grain quantitation even in cells with high background (red arrow).



Pits (white) and nuclei (green) can be simultaneously segmented, saving analysis time. Grains are accurately identified even in cells with high background (red arrow). Image acquired with the Discovery-1™ System from Molecular Devices.

Validated on Numerous Systems



The Transfluor Application Module identifies nuclei (green), pits (top, white) and vesicles (bottom, red). Images were acquired with the ImageXpress® Micro System from Molecular Devices.

EASY CONFIGURATION FOR ANALYSIS

1. Select the image of interest
2. Specify the size range of pits and/or vesicles
3. Set the intensity above local background for pits and/or vesicles
4. Optionally set the size range of nucleus in the nuclear stain image
5. Set the intensity above local background for the nuclear stain
6. Optionally choose the reporting parameters

INTERACTIVE DATA DISPLAY

Once the analysis is run, the Cellular Results table allows you to interactively view an individual cell's 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, called journals, 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™, text file or Microsoft® Excel®.

MULTI-PARAMETER ANALYSIS

The application module can generate a broad range of parameters that the user can selectively report to correlate the number of pits and vesicles. Measurement for the pit, vesicles and nucleus include:

- Count
- Count Per Cell
- Total Area
- Area Per Cell
- Integrated Intensity
- Average Intensity

Other parameters include:

- Texture Index
- Cellular Texture Index
- Gradient Index
- Cellular Gradient Index
- Laplacian Index
- Cellular Laplacian Index

ORDERING INFORMATION

Transfluor Application Module for MetaXpress Software
Part Number: 9500-0033

SALES OFFICES

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