

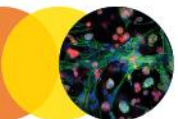
CellReporterXpress[®] Software Guide

Post-Acquisition Image Analysis



Support Resources

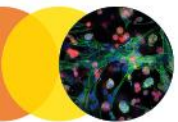
- Help button  within CellReporterXpress[®] Software
- Support and Knowledge Base: <http://mdc.custhelp.com>
- Email Technical Support:
support@moldev.com (US)
techsupport.eu@moldev.com (EU)
- Telephone Technical Support: 800-635-5577 (US) or +44 118 944 8000 (EU), select options for Technical Support → Cellular Imaging Products → ImageXpress Products



Purpose

This document provides a step-by-step review of CellReporterXpress to:

- Add analyses after images have been acquired





Welcome to CellReporterXpress by Molecular Devices

ACQUISITION



Start new experiments by acquiring images from a device.

EXPERIMENTS



Review experiments and run analysis.

MONITOR



Monitor acquisition and analysis progress on all devices on the network.

CONFIGURATION



Manage labware and stain libraries, register devices and services

DEVICES

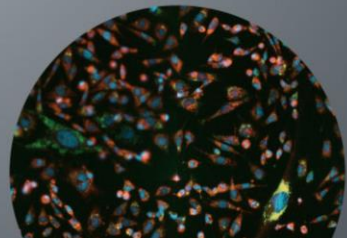
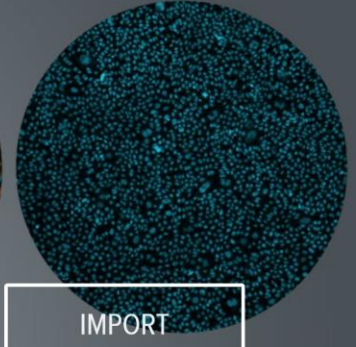
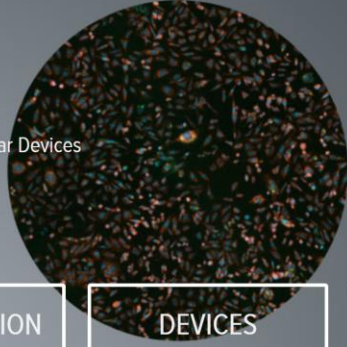


Manage Devices

IMPORT



Import experiments and monitor import/export tasks.

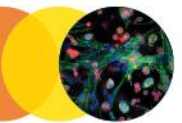


Select **EXPERIMENTS** to review or analyze images.


moleculardevices.com
moleculardevices.com/contact
US (Toll-free) 1-800-635-5577
UK (Freephone) 00800-665-32860

For research use only.
Not for use in diagnostic procedures.

Molecular Devices, LLC
2.0.1910



moldev
Feb 2, 2018 05:54



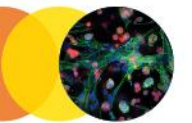
TL DAPI IXP DTN

TL dapi good DTN Jan18 IXP

TL Cell Count Large [Eye]

12 x 8 (96) [Grid] [User] 1

Select an **experiment** to review.



Home > Experiments > TL DAPI IXP DTN > Analyses

Experiment Name TL DAPI IXP DTN Geometry 96 (12 x 8) Description TL dapi good DTN Jan18 IXP Barcode N/A

Operations

Annotation Groups 0 Compounds 0 Barcode N/A

Analyses

+ Add Analysis

1) Select **Analysis** tab to access current analyses or add a new analysis.

2) Select **+ Add Analysis** to add a new analysis to the experiment.

Cell Count DAPI
moldev
Jan 19, 2018 06:56
 Cell Count
Launch Duplicate

TL Cell Count Small
laurence.monnet@moldev.com
Feb 2, 2018 05:36
 Transmitted Light Cell Count, Small

TL Cell Count General
laurence.monnet@moldev.com
Feb 2, 2018 05:45

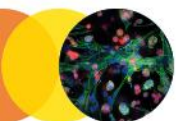
PLATE TIME VIEW IMAGES PLATE VIEW SUMMARIZE DATA

INPUTS TIME POINTS LIST MEASUREMENTS DESCRIPTION

Nuclei

Target	Nuclei
DAPI	Intensity 100
	Min Width 5
	Max Width 30

ui: 0.1.6598.12482



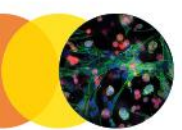
Total 1 Selected 1

Time Points

1) Select the Time Point(s) to analyze.
All timepoints are selected by default.

COMPLETE INCOMPLETE INVALID TIME POINT

ui: 0.1.6598.12482



1) Select Analysis Settings.

2) Choose Analysis from available modules.



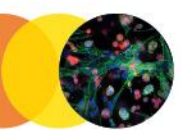
CHOOSE ANALYSIS

Template is not specified

Search [X]

- Cell Count**
Single channel assay for counting cells based on a nuclei stain.
- Angiogenesis Skeletonization
Single channel analysis for detecting and measuring blood vessels.
- Apoptosis
2-channel analysis using both a nuclei marker and one to identify apoptotic cells.
- Autophagy
2-channel assay for detecting autophagic granules.
- Cell Differentiation
2-channel assay using both a nuclei marker and a marker to identify differentiated cells.
- Cell Scoring
2-channel assay for scoring cells based on a marker.
- Endocytosis
2-channel assay for detecting endosomes.

ui: 0.1.6598.12482



Experiments > TL DAPI IXP DTN > Add Analysis

Home

51.75 μm

Nuclei

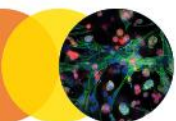
Target: DAPI

Max Width: 30

Manual Auto Reset

Select **Test Analysis** to run the selected analysis method as configured by default.

localhost:8080/index.html#? ui: 0.1.6598.12482



Experiments > TL DAPI IXP DTN > Add Analysis

The interface displays a microscopy image of cells with blue highlights. A scale bar indicates 51.75 μm. Below the image, a well selection overlay shows a 2.63 mm scale bar and a circular region. A tooltip labeled 'T1: A3' is visible. An orange callout box contains the text: 'Select Well and Region to Acquire, then select well for testing analysis.'

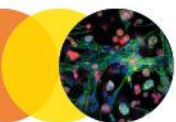
51.75 μm

T1: A3

2.63 mm

Select Well and Region to Acquire, then select well for testing analysis.

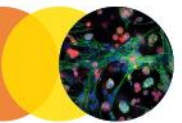
ui: 0.1.6598.12482

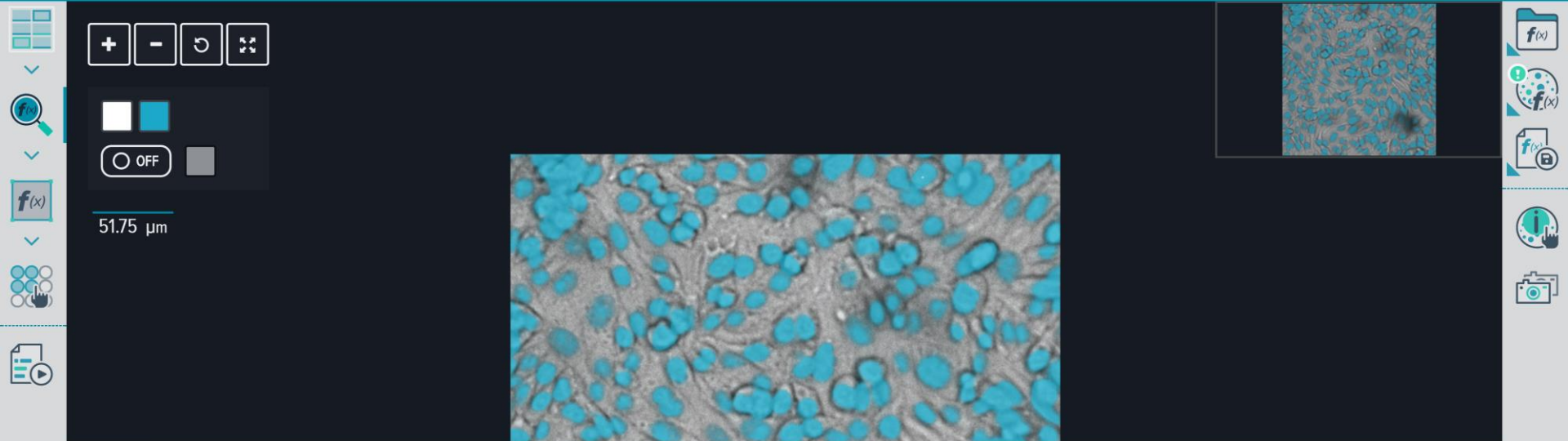


Select a **well** to use for testing analysis.

	1	2	3	4	5	6	7	8	9	10	11	12
A	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
B	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
C	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
D	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12
E	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12
F	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
G	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	G12
H	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12

Upon changing the well or site, the new image will be loaded and the analysis will run automatically.





Nuclei

Target: DAPI

Intensity: 100

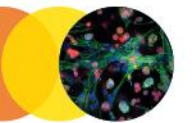
Min Width: 5

Max Width: 30

Manual Auto Reset

ui: 0.1.6598.12482

Select **Algorithm Input** to configure analysis settings.



Experiments > TL DAPI IXP DTN > Add Analysis

51.75 μm

Nuclei

Target: DAPI

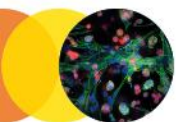
Nuclei Intensity: 100

Nuclei Min Width: 5

Manual Auto Reset

Select the wavelength channel to identify **Target** objects.

ui: 0.1.6598.12482



Experiments > TL DAPI IXP DTN > Add Analysis

2) Use the cursor to click on objects of interest.

Min Width, Max Width, and Intensity values automatically populated based on the selected cells.

Click on **small**, **large**, and **dim**, and **bright** objects to teach the software on the defining parameters of your target objects.

Optional: Select **reset** to revert to original settings.

51.75 μm

Nuclei

Target: DAPI

Nuclei

Intensity: 408

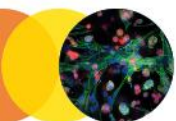
Min Width: 12

Max Width: 19

Manual Auto Reset

ui: 0.1.6598.12482

1) Select **Auto** to enable 'Click to Find' automatic machine learning.



Experiments > TL DAPI IXP DTN > Add Analysis

51.75 μm

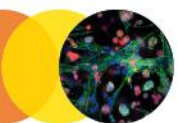
T1: A3

2.63 mm

The **box outline** represents the entire imaged region. The **crosshair** represents the **current position**.

Drag the **crosshair** to the location where you want to test analysis

ui: 0.1.6598.12482



3) Select **Check** to confirm the selection; **X** to reject.

2) Draw a box around an object of interest. Min Width, Max Width, and Intensity values are set based on the pixels within the box. Draw box as precisely as possible around the object for best results.

1) Select **Manual** mode to identify irregular objects by manually defining the location of the object.

The screenshot displays the Molecular Devices software interface. At the top, the navigation bar shows 'Experiments > TL DAPI IXP DTN > Add Analysis'. The main workspace shows a microscopy image of blue-stained nuclei. A red selection box is drawn around a specific nucleus, and a small dialog box with 'Check' and 'X' buttons is overlaid on it. On the left, a control panel includes zoom controls (+, -, refresh, pan), a 'DIGITAL ZOOM' section with a '25.88 μm' value and an 'OFF' toggle, and a toolbar with various icons. At the bottom, a 'Nuclei' configuration panel is open, showing 'Target' set to 'DAPI', 'Intensity' at 100, 'Min Width' at 5, and 'Max Width' at 30. The 'Manual' button is highlighted with an orange border. The bottom right corner of the software window shows the UI version '0.1.6598.12482'.

Home > Experiments > TL DAPI IXP DTN > Add Analysis

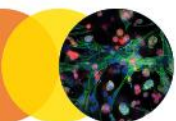
37.26 μm
DIGITAL ZOOM

Test Analysis: Apply new analysis settings to image.

Target	Intensity	100
DAPI	Min Width	5
	Max Width	30

Manual Auto Reset

ui: 0.1.6598.12482



Home > Experiments > TL DAPI IXP DTN > Add Analysis

37.26 μm
DIGITAL ZOOM

Select desired **summary and **cell** measurements. All measurements are selected by default.**

Nuclei

Target: DAPI

Nuclei

Intensity: 100

Min Width: 5

Max Width: 30

Manual Auto Reset

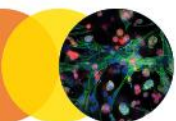
MEASUREMENTS

Summary Measurements Cell Measurements

Select / Deselect All Recommended Export

Cell Count	306	<input checked="" type="checkbox"/>
Cell Total Intensity	261510	<input checked="" type="checkbox"/>
Cell Average Intensity	854.608	<input checked="" type="checkbox"/>
Cell Total Integrated Intensity	7.4721e+7	<input checked="" type="checkbox"/>
Cell Average Integrated Intensity	244186	<input checked="" type="checkbox"/>
Total Area	40839.9	<input checked="" type="checkbox"/>
Average Area	133.464	<input checked="" type="checkbox"/>

ui: 0.1.6598.12482



Vertical toolbar with icons for grid, zoom, analysis, and document.

Main image area showing a field of bright spots (nuclei) on a dark background. Includes zoom controls (+, -, refresh, full screen) and a digital zoom indicator showing 37.26 μm.

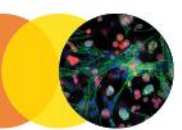
1) Name Analysis Settings.

2) Select Save. Setting will appear in the Choose Analysis list.

SAVE ANALYSIS dialog box. Analysis Settings: Nuclei Count DAPI. Settings avatar: Use captured picture, Click to upload. Save button.

Nuclei settings panel. Target: DAPI. Nuclei Intensity: 100, Min Width: 5, Max Width: 30. Manual, Auto, Reset buttons.

Vertical toolbar on the right side with icons for analysis, information, and camera.



Experiments > TL DAPI IXP DTN > Add Analysis

1) Choose **Region Selection to Analyze**.

2) Select **Add** to create a region for analysis.

Note that the **entire sample area** will be analyzed by default if a region is not selected at this step.

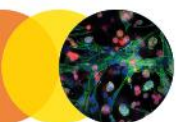
Constant Analysis Area: 1.92 mm²

0.01 mm² 0.1 mm² 1 mm² 1.92 mm²

Selected Actual captured

Acquisition Area: 1.92 mm² Analysis Area: 1.92 mm²

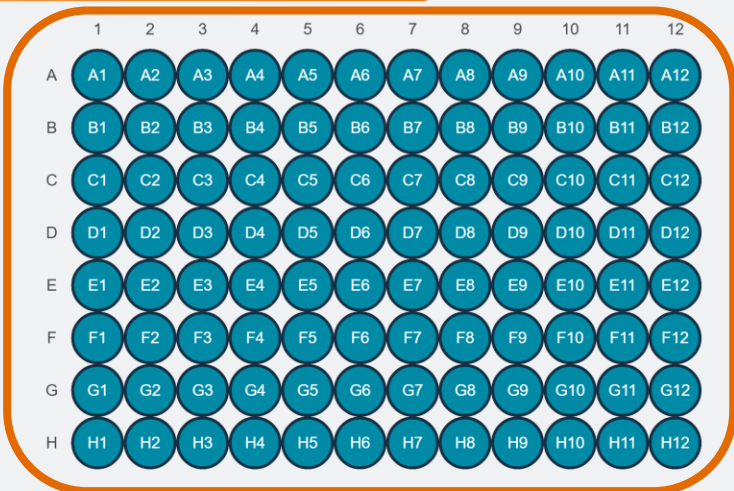
localhost:8080/index.html/ ui: 0.1.6598.12482



1) Select Well Selection for Analysis.

Well Selection

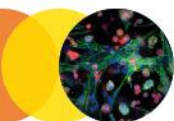
2a) Choose Select All imaged wells for analysis.



2b) Select a subset of wells to analyze by selecting wells within the plate map.

A Not Selected Well **B** Selected Well **C** Disabled Well **D** Unavailable Well

ui: 0.1.6598.12482



2) Enter an Analysis name (required) and description (optional).

Analysis name *
Nuclei Count

Analysis description

3) Select Run Experiment.

1) Select Run Protocol.

Validation		Analysis Parameters	
Plate	12x8	96 BD PDL 354640 [1]_4	
	92 mm ²		
<input checked="" type="checkbox"/>	Time Points	Selected: 1	Will be analyzed: 1

