FLUIDIGM®

MCD Viewer v1.0.560.6

Introduction

MCD™ Viewer v1.0.560.6 allows users to visualize and export Imaging Mass Cytometry™ data acquired with CyTOF® Software v6.7 or later. Create and save publication-quality 16-bit color images. Export MCD and text files to single-page or multipage OME-TIFF files to evaluate experimental results and perform further analysis with third-party software.

This document summarizes software features, installation procedure, and recommendations for using MCD Viewer v1.0.560.6.

About This Software

MCD Viewer v1.0.560.6 is compatible with Imaging Mass Cytometry data files acquired with CyTOF Software v6.7 or later.

Cumulative List of Enhancements Since v1.0

v1.0.560.6

- MCD Viewer can now be run from non-administrative Windows® accounts.

    NOTE Administrative privileges are required to install the software.

- The Gamma default setting for merged images (Advanced Channel Settings) is changed from 0.5 to 1.

    NOTE Images rendered with earlier versions of MCD Viewer using the former default setting (0.5) will look differently.

v1.0.560.2

- Support for MCD data files generated with CyTOF Software v7.0 in which ROIs are no longer organized by panorama. For more information about viewing and exporting v7.0 MCD files with MCD Viewer, see the MCD Viewer v1.0.560.6 User Guide.

    NOTE This change does not affect MCD files acquired with CyTOF Software v6.7.

System Requirements

MCD Viewer v1.0.560.6 is a 64-bit application intended for operation on the following systems:

- Instrument workstations

  Windows 7 Pro 64-bit computer systems (PN 104042 or 104043) with administrator privileges

- Personal computers with the following minimum requirements:

Component	Minimum Requirements
Operating system	Windows 7 (with administrator privileges)
Processor	Dual-core 2.5 GHz base frequency 32 GB memory 4 MB cache
Installed memory (RAM)	8 GB

Features and Recommendations

Features

- Export data acquired with CyTOF Software v6.7 or later to single-page or multipage OME-TIFF and text files. Export all regions of interest (ROIs)/channels or select specific ROIs/channels within a single MCD file.

- Preview ion images by viewing the channel thumbnails. Save the thumbnails (as a collage) to an 8-bit image.

- Visualize data by merging ion images and assigning channel-specific colors. Optimize the image by adjusting channel-specific settings, such as signal thresholds, color thresholds, and gamma correction. Save images as 8- or 16-bit color TIFFs for publication.

- The image burn-in feature allows users to overlay the following elements on a merged image and save as an 8-bit color TIFF:

  - Custom scale bar

  - Optical images of the sample before and after ablation

  - Selected regions

- Generate basic statistical information of selected regions within an ROI and save the data to a tab-delimited text file.

- View and save all optical images stored within an MCD file:

  - Slide preview

  - Panoramas

  - Images of the sample before and after ablation

Limitations and Recommendations

- For optimal software responsiveness, ROIs with dimensions of 2,000 μm^2 or greater must contain 50 or fewer channels of data.

- Copy MCD files to a local drive before opening them with MCD Viewer v1.0.560.6.

- Do not open files in MCD Viewer and CyTOF software simultaneously. This causes MCD Viewer to become unresponsive.

- The file export progress bar does not update if only one channel is selected for export.

- Text files 2 GB or larger may take 2 or more minutes to open.

- The histogram does not update when a subsequent file is opened in the same instance of MCD Viewer until a channel is selected.

- The maximum path length supported by Windows is 260 characters. If the number of characters in the target path for exported data exceeds 260, the following error message is displayed after file export is initiated: "Export cannot proceed due to the following error: Object reference not set to an instance of an object." File export stops. If a target path length exceeding 260 characters is encountered while data export is in progress, the following error message is displayed: "Export cannot proceed due to the following error: Could not find a part of the path (target path listed here)." To reduce the path length:

  - For existing data files, export data to a top-level folder.

  - For new data files, reduce the number of characters in panorama and ROI names prior to acquiring data with CyTOF Software v6.7 or later (panorama and ROI names cannot be changed after the MCD file is created).

- **CyTOF Software v6.7 only.** ROIs with channel labels that contain unsupported characters cannot be exported. To remove the unsupported characters, open the file in CyTOF Software v6.7 and modify the channel labels for previously acquired data:

  1 Open CyTOF Software v6.7 and click **HTI Acquisition**.

  2 Click **File** > **Open**.

  3 In the Acquisition table, right-click the row containing the ROI.

  4 In the Channels table, modify the labels containing unsupported characters.

5   Click **File** > **Save**.

Installation

IMPORTANT Windows administrator access is required to install this software. If you do not have administrator access, contact your IT department for assistance. After the software is installed you can log onto Windows as a non-administrator and run the software.

To install MCD Viewer

1   Log onto Windows as an administrator.

2   Extract the zip file contents:

- Software installer: MCDViewer 1.0.560.6.exe
- MCD Viewer v1.0.560.6 User Guide (PDF)

3   After the files are extracted, double-click **MCDViewer 1.0.560.6.exe** to start the installer and follow the instructions.

To start MCD Viewer

1   Log into your Windows account.

2   Start the software using the desktop shortcut or the Windows Start menu shortcut.

NOTE **Windows 10 only:** If MCD Viewer does not open, run the Windows Program Compatibility Troubleshooter to update settings for compatibility with newer versions of Windows 10. To run the Program Compatibility Troubleshooter, right-click the MCD Viewer desktop icon, click **Troubleshoot compatibility**, and then follow the instructions on the screen.

For Research Use Only. Not for use in diagnostic procedures.