

Application Note No. 4500

Xcyto® 5

Installation Qualification Protocol for the Xcyto® 5 system

Product description

The Xcyto® 5 image cytometer combines the statistical power and fluorescence sensitivity of standard flow cytometry with the spatial resolution and quantitative morphology of digital microscopy. This unique combination allows for new applications that would be unfeasible using the two methods separately. The Xcyto® 5 system integrates image acquisition, image analysis, feature extraction and data presentation in one step, providing seamless quantitative data of individual cells. This instrument produces high-resolution images, including UV microscopy, dark field, and more than 20 fluorescent channels, with sensitivity exceeding conventional flow cytometry.

Application

This protocol for the Xcyto® 5 system is used for Installation Qualification. In addition to verification of correct installation, this protocol also verifies basic operations of the motors and cameras.

Introduction

The Xcyto® 5 image cytometer comprises several motors, sensors, camera and electronic boards. This IQ protocol performs a series of basic operations to verify the operation of all these units. The test results are displayed at the end of the test, in a message box, and grouped in two categories: 'OK' or 'Failed'.

Principle

The IQ protocol is performed with an empty sample tray.

The first part verifies:

- Correct installation

The second part verifies the basic operation of all actuators and the camera

- Filter motor
- Focusing
- X, Y motors
- Sample tray positioning
- Basic function of the camera

IQ test:

Materials needed

- No materials are needed.

Protocol (duration of the IQ test is less than 30 seconds)

1. Engage the Xcyto® 5 by starting the XcytoView™ software. The Xcyto® 5 is ready to use when the RUN-indicator turns green (this may take a minute).
2. Open the *Protocol Browser* available from the main window.
3. Select the **Xcyto5 IQ** protocol, press **RUN** and follow the instructions on-screen to perform the IQ test.
4. After completion, a message box will confirm whether the IQ test has passed 'OK' or 'Failed'.

IQ documentation files:

- Two csv files holding all the results named with the Xcyto® 5 serial number, date and time (IQSummary_sn_YYYYMMDD_hhmmss.csv and IQ Test Status_sn_YYYYMMDD_hhmmss.csv) are placed in the verification directory as documentation for the performed IQ test.

Handling and storage

For handling and storage of ChemoMetec® instruments, reagents and Xcyto® slides refer to the corresponding product documentation. For other reagents refer to the material data sheet from the manufacturer of the reagents and chemicals.

Warnings and precautions

For safe handling and disposal of the ChemoMetec® reagents and Xcyto® slides refer to the corresponding product documentation and the Xcyto® Software User Guide. For other reagents refer to the safety data sheet from the manufacturer of the reagents and chemicals required for this protocol. Wear suitable eye protection and protective clothes and gloves when handling biologically active materials.

Limitations

The Xcyto® 5 system is FOR RESEARCH USE ONLY. NOT FOR DIAGNOSTIC OR THERAPEUTIC USE. The results presented by the Xcyto® 5 system depend on correct use of the reagents, Xcyto® slides and the Xcyto® 5 instrument and might depend on the type of cells being analyzed. Refer to the Xcyto® 5 Software User Guide for instructions and limitations.

Liability disclaimer

This application note is for RESEARCH PURPOSES ONLY. It is not intended for food, drug, household, or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals. The above information is correct to the best of our knowledge. Users should make independent decisions regarding completeness of the information based on all sources available. ChemoMetec A/S shall not be held liable for any damage resulting from handling or contact with the above product.

Product disclaimer

ChemoMetec A/S reserves the right to introduce changes in the product to incorporate new technology. This application note is subject to change without notice.

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