

iQue® Enhanced Marker Cartridges

For use in iQue®3

Product Information

iQue® Enhanced Marker Cartridges automate well identification in Forecyt® Screening Software. Each cartridge consists of fluorescent polystyrene beads in buffer containing bovine serum albumin and 0.09% sodium azide. iQue® offers marker cartridges in 5 options.

List of Available Products

Product Name	Cat. No.	Format
iQue® B/Green Marker	97018	Single
iQue® B/Green Marker	97019	1 Pack
iQue® B/Yellow Marker	97020	Single
iQue® B/Yellow Marker	97021	1 Pack
iQue® B/Red Marker	97022	Single
iQue® B/Red Marker	97023	1 Pack
iQue® R/Red Marker	97024	Single
iQue® R/Red Marker	97025	1 Pack
iQue® V/Blue Marker	97026	Single
iQue® V/Blue Marker	97027	1 Pack

Table 1. List of Available Products

Volume

37 mL, sufficient to run >100 384-well plates.
Run time is dependent on protocol.



Storage

Store at room temperature.
Once opened, store at 2–8°C.

Use

iQue® Enhanced Marker Cartridges enable the use of the marker experiments option in iQue Forecyt®. In “Marker Experiment” mode, the sample probe travels to the marker cartridge and aspirates a small quantity of a fluorescent bead solution between each sample. The between-well beads are utilized by the software to perform unassisted well identification.

Notes

iQue® Marker Cartridges are only compatible on iQue®3 systems running iQue Forecyt® versions 7.1 or higher. Cartridge expires 30 days after opening.

Procedure

1. Selecting the Appropriate Cartridge for your Experiment

Each cartridge type is designed for optimal detection on the specified fluorescence channel, although the fluorescence signal will overlap and be detected on other channels. It is recommended that a cartridge on an unoccupied fluorescence channel be selected for use. For example, if an experiment contains a GFP reporter (B/Green) – use of the iQue® Enhanced Marker Cartridge (B/Green) is not recommended. In this example, select another cartridge for optimal performance.

2. Installing Cartridges on iQue®3 Platform

2.1 Before use, vigorously shake cartridge for several seconds to ensure complete resuspension of any settled beads.

2.2 Open the blue seal before installing the cartridge in the station. Open the seal by pulling up on the blue tab. Do not use a tool.

The fifth position on the iQue® Enhanced Rinse Station is for auxiliary cartridges which are not used in standard sampling protocols. Install an iQue® Enhanced Marker Bead cartridge in the AUX station if running an experiment which requires a marker cartridge (**Figure 1**).



Figure 1. Enhanced Rinse Station. Install a Marker Bead cartridge in the AUX station.

For optimal performance, marker cartridges should be removed from the system and periodically shaken to ensure that beads remain in homogenous suspension. Sartorius recommends shaking the iQue® Marker Cartridge daily for best performance.

3. **Creating a Markers Experiment in iQue Forecyt®**
New experiments in iQue Forecyt® 7.1 and above are enabled for markers experiments.

3.1 In the new experiment dialogue, select the appropriate markers type to match the fluorescence of the installed cartridge (**Figure 2**).

3.2 Enter an appropriate name for the experiment. Acquisition parameters specific to markers experiment will automatically be set. Proceed with normal experiment setup and acquisition.

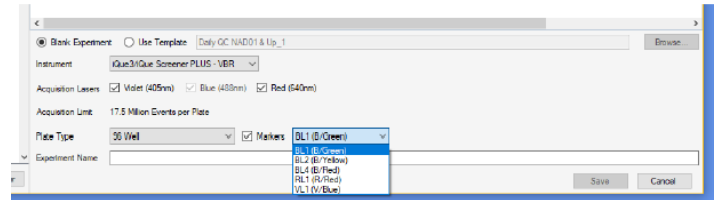


Figure 2. New Experiment Dialogue. In the Markers drop-down menu, select the appropriate iQue® Enhanced Marker Cartridge for the experiment. Ensure that the correct cartridge corresponding to the experiment has been installed.

4. Uninstalling and Storing Marker Cartridges

4.1 Remove the cartridge from the enhanced rinse station.

4.2 Close the cartridge after removing it from the station by pressing the seal closed. Store at 2–8°C.

4.3 To reuse the cartridge, remove it from 2–8°C and allow it to equilibrate to room temperature for at least 20 minutes before starting the next experiment.

4.4 Shake well before each usage, taking precautions to avoid spilling from the opening.

Problem	Possible Cause	Recommended Action
Collected bead numbers are low	Beads have settled in cartridge and are not being consistently aspirated	Remove cartridge from system and shake well before re-installing If problem persists, install a new marker cartridge
Some wells are not properly identified. Expected bead sips are missing or inconsistent	Sampling issues prevented beads from being sampled appropriately	Identify and correct any sampling errors that may have been encountered. This may include: <ul style="list-style-type: none"> ▪ Incorrect instrument calibration ▪ Clogged sample line cytometer ▪ Incorrect acquisition threshold(s) Sample tubing is worn and needs to be replaced
Wells are not properly identified; systemic well ID failure	Potential mismatch between markers fluorescence defined in experiment and actual installed marker cartridge	Verify that the appropriate cartridge is installed

Table 2. Troubleshooting Guide

Sales and Service Contacts

For further contacts, visit
www.sartorius.com

Sartorius BioAnalytical Instruments, Inc.

www.sartorius.com/iQue

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