

iQue® Between-Well Marker Cartridges

Product Information

The iQue® Between-Well Marker Cartridges automate well identification in iQue Forecyt®. Each cartridge consists of fluorescent polystyrene beads in buffer containing bovine serum albumin and $\leq 0.09\%$ sodium azide. Marker cartridges are only compatible on iQue® platforms running iQue Forecyt® versions 4.0 or higher. iQue® offers marker cartridges in 5 options.

Note: Catalog #91126 (V/Blue) Between-Well Marker Cartridge is only compatible with iQue® Screener PLUS platforms, and will not be detected on standard iQue® platforms. Marker Cartridges are only compatible on platforms running iQue Forecyt® 4.0 or higher. Earlier versions of iQue Forecyt® will not provide an option to create Marker Experiments.

Between-well 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.

Materials Needed but Not Provided:

- Assay Plates
- 96-well V-bottom plates (iQue® #90151)
- 384-well V-bottom plate (Greiner® #781280)
- iQue® Screener, iQue® Screener HD, or iQue® Screener PLUS platform equipped with iQue Forecyt® version 4.0 or higher

Kit Contents

| Product Name | Cat. No. |
|---|----------|
| (B/Green) Between-Well Marker Cartridge | 90635 |
| (B/Yellow) Between-Well Marker Cartridge | 90636 |
| (B/Red) Between-Well Marker Cartridge | 90637 |
| (R/Red) Between-Well Marker Cartridge | 90638 |
| (V/Blue) Between-Well Marker Cartridge for iQue® PLUS | 91126 |
| P200 Pipet Tip for Puncturing Cartridge | - |

Table 1: Kit Contents

Packaging

Each cartridge contains 29 mL, sufficient to run >50 384-well plates using standard protocol.

Storage

Store at room temperature. Marker cartridges are manufactured under aseptic conditions. Once opened, store at 2–8°C. Protect from prolonged exposure to light. Do not freeze.

Procedure

1.0 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 (B/Green) Markers Cartridge is not recommended. In this example, select another cartridge for optimal performance.

2.0 Opening and Installing Cartridges on your iQue® Platform

- 2.1 Before use, vigorously shake cartridge for several seconds to ensure complete resuspension of any settled beads.
- 2.2 To open a cartridge, puncture the top foil seal at the indicated location. Use of a standard laboratory pipet tip (P200 size or larger) will aid in the puncture and expansion of the opening to the indicated size.
- 2.3 Marker cartridges must always be installed on the “Markers” location on the fluid station. Gently place the opened cartridge into the slot and ensure that the cartridge is properly seated.



Figure 1: Fluid Station. Marker Cartridge should always be installed at the “Markers” location.

- 2.4 For optimal performance, cartridges should be removed from the platform and periodically shaken to ensure that beads remain in homogenous suspension. iQue® recommends shaking after every 2–3 hours of use for best performance, but use times of up to 8 hours continuously have been successfully demonstrated.

3.0 Creating a Markers Experiment in iQue ForeCyt®

- 3.1 New experiments in iQue ForeCyt® 4.0 and above are enabled for markers experiments. 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.

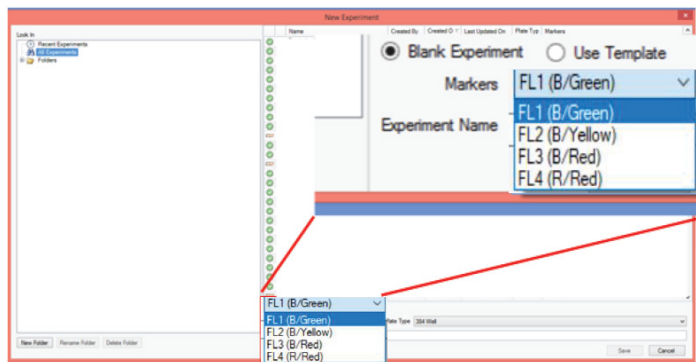


Figure 2: New Experiment Dialogue. In the Markers drop-down menu, select the appropriate Marker Cartridge for the experiment. Ensure that the correct cartridge corresponding to the experiment has been installed.

4.0 Uninstalling and Storing Marker Cartridges

- 4.1 Remove the cartridge from the rinse station. Cover the opening with parafilm or other suitable protectant.
- 4.2 Store at 2–8°C, taking precautions to prevent evaporation. To reuse the cartridge, remove it from 2–8°C and allow it to equilibrate at room temperature for at least 20 minutes before starting next experiment. 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) Cartridges are designed to be sampled above the "V" in the bottom of the cartridge. Once the fluid level has reached this point, install a new marker cartridge. |
| 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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Publication No. #11520 Rev E.

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