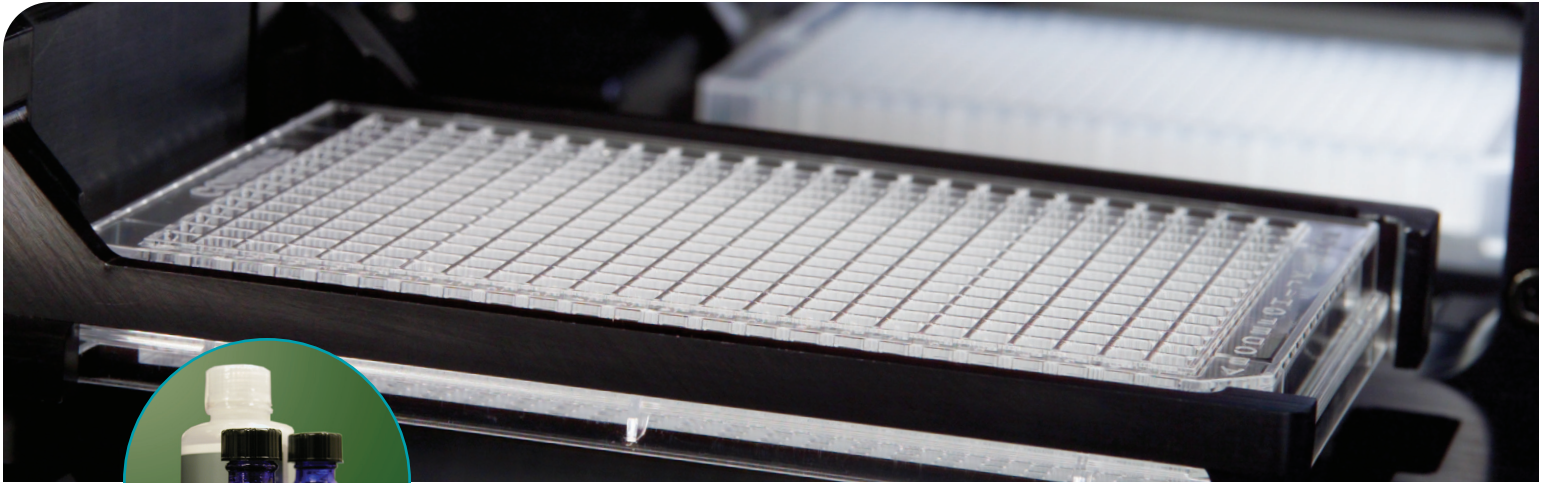


FLIPR Membrane Potential Assay Kits

IMPROVING THE EFFICIENCY OF HIGH-QUALITY DATA DELIVERY



- NO WASH
- HIGH THROUGHPUT
- FAST RESPONSE TIMES
- SIMPLE ASSAY

Patch clamping is considered the “gold standard” for measuring membrane potential, but it is too slow and labor-intensive to use in a primary screen. A much faster method for screening applications uses voltage-sensitive dyes on the FLIPR® Fluorometric Imaging Plate Reader. However, traditional dyes have several limitations, including slow response times and temperature sensitivity. The FLIPR Membrane Potential Assay Kits from Molecular Devices deliver higher throughput than previous automated FLIPR kits, while showing good correlation with manual patch clamping data.

UNMATCHED THROUGHPUT

FLIPR Membrane Potential Assay Kits allow the elimination of wash steps and much shorter read times on the instrument. Data for a 384-well plate can be collected in less than 2 minutes, as opposed to up to 30 minutes with other dyes, such as DiBAC. And because the proprietary indicator dye in the FLIPR Membrane Potential Assay Kit is much less sensitive to temperature

changes than DiBAC, plates can be set up ahead of time and stacked for batch runs, making the assay highly amenable to automation.

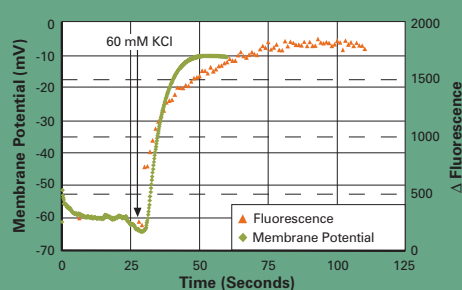
JUST MIX AND READ

Eliminating wash steps also leads to healthier, more responsive cells. The less the cells are handled, the better they behave, and the better the data obtained will be. With the kit, the cells are simply incubated with the reagent for up to one hour then transferred directly to the FLIPR System, without any additional steps.

SIMPLIFIED PROTOCOL

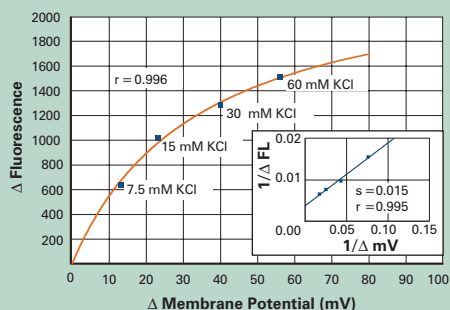
With the FLIPR Membrane Potential Assay Kit, not only is the reagent much less temperature sensitive than DiBAC it is also less sticky, so there is no need to pre-soak tips, further increasing throughput. Other simplifications to the protocol include not needing to mix large batches of dye before the assay, or having to introduce dye into compound plates.

Membrane Potential (Figure 1)



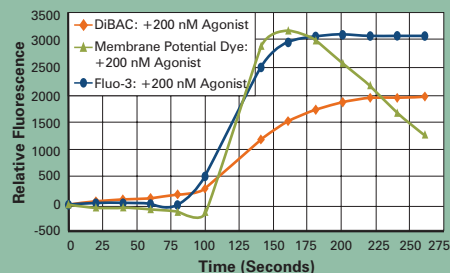
Comparison between patch clamp (mV) and FLIPR System (fluorescence) assays on CHO cells expressing a voltage-gated K^+ channel.*

Membrane Potential (Figure 2)



Correlation of changes in membrane potential to fluorescence changes on a FLIPR System. CHO cells transfected with K^+ channel exposed to various K^+ concentrations.*

Membrane Potential (Figure 3)



Comparison between the FLIPR Membrane Potential Assay Kit, DiBAC and Fluo-3 assays on ligand-gated Ca^{2+} channels*.

* Data courtesy of Michael Xie, Millennium Pharmaceutical, Inc.

FAST RESPONSE TIMES

Although throughput is critical for screening applications, the quality of data obtained is still the primary concern when selecting an assay. The greatest benefit of patch clamping studies is very fast response times, allowing detection of very rapid changes in membrane potential. Comparing data generated using the FLIPR Membrane Potential Assay Kit with patch clamping results shows good correlation. (See Figures 1 and 2.) Both the opening and closing of channels can now be observed. This differs from DiBAC, which very often can only show unidirectional changes in membrane potential. (See Figure 3.)

ALTERNATIVE FORMULATIONS

Because ion channel activity is sensitive to interference, and chemical interference with a particular channel is highly unpredictable, the FLIPR Membrane Potential Assay Kit has two formulations. Both formulations combine the advantages of Molecular Devices' proprietary membrane potential indicator dye with our patented quench technology. This allows the user to test the response in their ion channels cell line of interest.

We recommend that both Red and Blue versions be evaluated for each individual target to determine which formulation will provide optimal performance.

ORDERING INFORMATION

Explorer sized kits

Membrane potential evaluation assay kit (½ Blue, ½ Red)
Part Number: R8128

Membrane potential assay kit, blue
Part Number: R8042

Membrane potential assay kit, red
Part Number: R8126

All explorer kits contain:

- (10) reagent vials, (1) plate/vial
- (1) buffer bottle
- Sufficient reagent for 10 plates (96- or 384-well)

Bulk sized kits

Membrane potential assay kit, blue
Part Number: R8034

Membrane potential assay kit, red
Part Number: R8123

All bulk kits contain:

- (10) reagent vials, 10 plates/vial
- (1) buffer bottle
- Sufficient reagent for 100 plates (96- or 384-well)

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