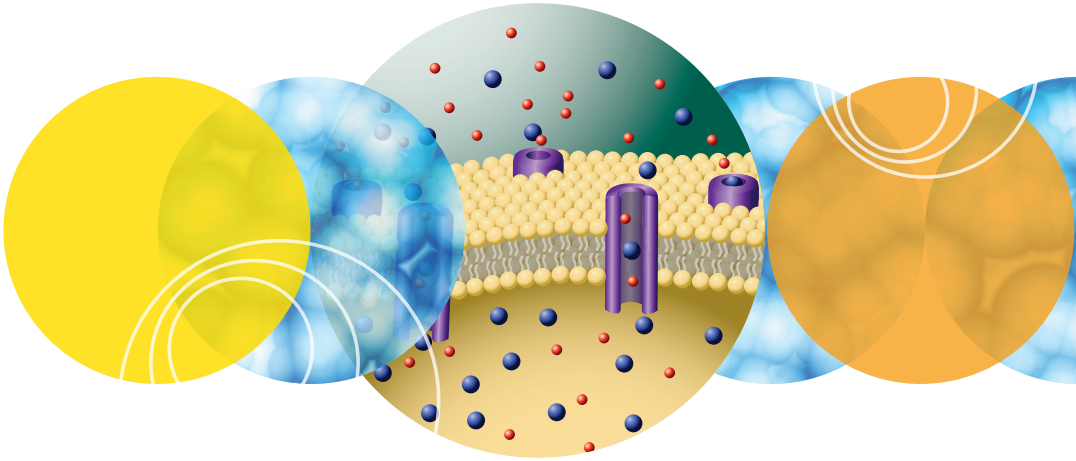


FLIPR Membrane Potential Assay Kits

Improving the efficiency of high-quality data delivery

KEY FEATURES

- **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 Tetra® High-Throughput Cellular Screening System. However, traditional dyes have several limitations, including slow response times and temperature sensitivity. The FLIPR® Membrane Potential Assay Kits from Molecular Devices deliver high throughput 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 two minutes, as opposed to up to 30 minutes with other dyes, such as DiBAC. And because the proprietary indicator dye in the kits are 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. The cells are simply incubated with the reagent for up to one hour, then transferred directly to the FLIPR Tetra System without any additional steps.

Simplified protocol

With the FLIPR Membrane Potential Assay Kits, 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.

Fast response times

Although throughput is critical for screening applications, the quality of data obtained is still the primary concern when selecting

MOLECULAR DEVICES

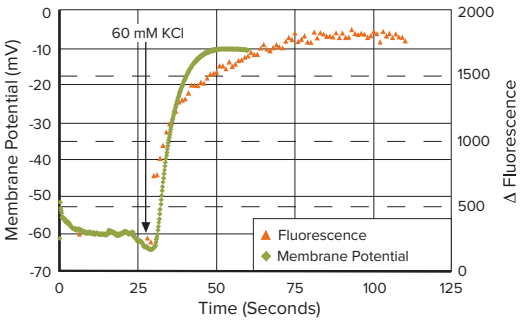


Figure 1. Membrane potential. Comparison between patch clamp (mV) and FLIPR Tetra System (fluorescence) assays on CHO cells expressing a voltage-gated K^+ channel.*

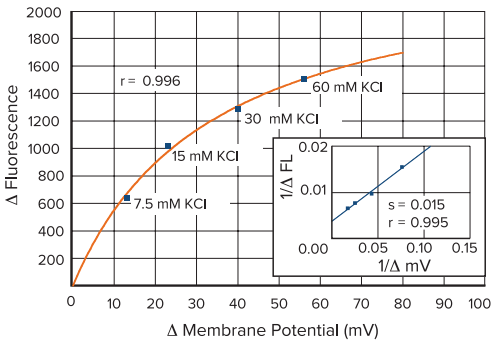


Figure 2. Membrane potential. Correlation of changes in membrane potential to fluorescence changes on a FLIPR Tetra System. CHO cells transfected with K^+ channel exposed to various K^+ concentrations.*

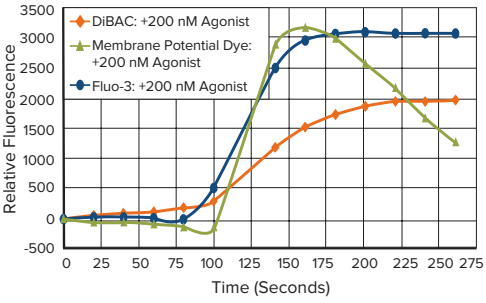


Figure 3. Membrane potential. Comparison between the FLIPR Membrane Potential Assay Kit, DiBAC and Fluo-3 assays on ligand-gated Ca^{2+} channels*.

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 Kits with patch clamping results show 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.).

Alternate formulations

Because ion channel activity is sensitive to interference, and chemical interference with a particular channel is highly unpredictable, the FLIPR Membrane Potential Assay Kits have 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.

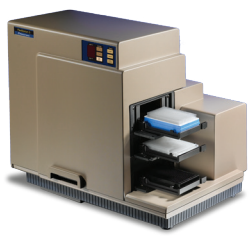
* Data courtesy of Michael Xie, Millennium Pharmaceuticals, Inc.

Ordering information

Item	Description	Part number
FLIPR Membrane Potential Assay Kit (Evaluation)	(5) vials Component A (blue)* (5) vials Component A (red)* (1) buffer bottle * Provides sufficient reagent for 10 plates (96-, 384-well)	R8128
FLIPR Membrane Potential Assay Kit Blue (Explorer)	(10) vials Component A (blue)* (1) buffer bottle * Provides sufficient reagent for 10 plates (96-, 384-well)	R8042
FLIPR Membrane Potential Assay Kit Red (Explorer)	(10) vials Component A (red)* (1) buffer bottle * Provides sufficient reagent for 10 plates (96-, 384-well)	R8126
FLIPR Membrane Potential Assay Kit Blue (Bulk)	(10) vials Component A (blue)* (1) buffer bottle * Provides sufficient reagent for 100 plates (96-, 384-well)	R8034
FLIPR Membrane Potential Assay Kit Red (Bulk)	(10) vials Component A (red)* (1) buffer bottle * Provides sufficient reagent for 100 plates (96-, 384-well)	R8123

Compatible with these Molecular Devices systems

FLIPR Tetra® High-Throughput Cellular Screening System



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