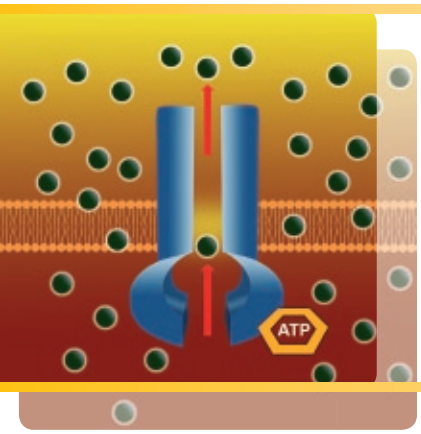

eFluxx-ID™ Multidrug Resistance Assay Kits

for flow cytometry

eFluxx-ID™ Green Multidrug resistance assay kit
ENZ-51029-K100 — 100 Assays

eFluxx-ID™ Gold Multidrug resistance assay kit
ENZ-51030-K100 — 100 Assays

HIGHLIGHT

- Fast, sensitive and quantitative method for monitoring the activity of multi drug resistance proteins
- Detect and distinguish between three major clinically important multidrug resistance proteins: MDR1 (P-glycoprotein), MRP1/2 and BCRP
- Simple and reproducible mix-and-read protocol optimized for flow cytometry
- Suitable for multidrug resistance analysis and drug/toxicity investigations
- 488 nm laser excitable eFluxx-ID™ dyes are compatible with a wide range of instruments, and with other common fluorescent dyes/fluorescent proteins commonly used in flow cytometry
- Stringently manufactured, to control and eliminate non-specific assay artifacts

Multidrug resistance relates to the resistance of tumor cells to a variety of chemotherapy drugs with different structures and cellular targets. The phenomenon of multidrug resistance (MDR) is a well-known problem in oncology and thus needs profound consideration in cancer treatment. One of the underlying molecular rationales for MDR is the up-regulation of a family of transmembrane ATP binding cassette (ABC) transporter proteins that are present in practically all living organisms. These proteins cause chemotherapy resistance in cancer by actively extruding a wide range of therapeutic compounds from the malignant cells. The same ABC transporters play an important protective function against toxic compounds in a variety of cells and tissues and at blood-tissue barriers.

Enzo Life Sciences' eFluxx-ID™ Multidrug resistance assay kits are designed for functional detection and profiling of multidrug resistant phenotypes in live cells (both suspension and adherent). The kits include either a green fluorescent or orange fluorescent eFluxx-ID™ detection reagent as a major component. Both dyes are excited by a 488 nm laser. Being a substrate for all three main ABC transporter proteins, these reagents serve as indicators of transporter protein activity in cells. The proprietary AM-esters of the eFluxx-ID™ detection reagents are hydrophobic non-fluorescent compounds that readily penetrate the cell membrane and are subsequently hydrolyzed inside of the cells by intracellular esterases. The resulting probe is a hydrophilic fluorescent dye that is trapped within the cell unless actively pumped out by an ABC transporter. The fluorescence signal of the dye generated within the cells thus depends upon the activity of the ABC transporters. The cells with highly active transporters will demonstrate lower fluorescence because of the active efflux of the reagent from the cell. Application of specific inhibitors of the various ABC transporter proteins, included in the kit, allows differentiation between the three common types of pumps. The activity of a particular MDR transporter is defined by the difference between the amount of the dye accumulated in the presence and in the absence of the inhibitors, respectively

The flow cytometry assay is based upon determining fluorescence intensities of the tested cells after a short *in vitro* incubation of cell suspensions with the eFluxx-ID™ detection reagents, in the presence or absence of specific ABC transporter inhibitors. The results of the test can be quantified by calculating the MDR activity factor (MAF), which allow comparison of multidrug resistance between the samples or cell lines.

Product Flyer
International Edition 1-May-2010

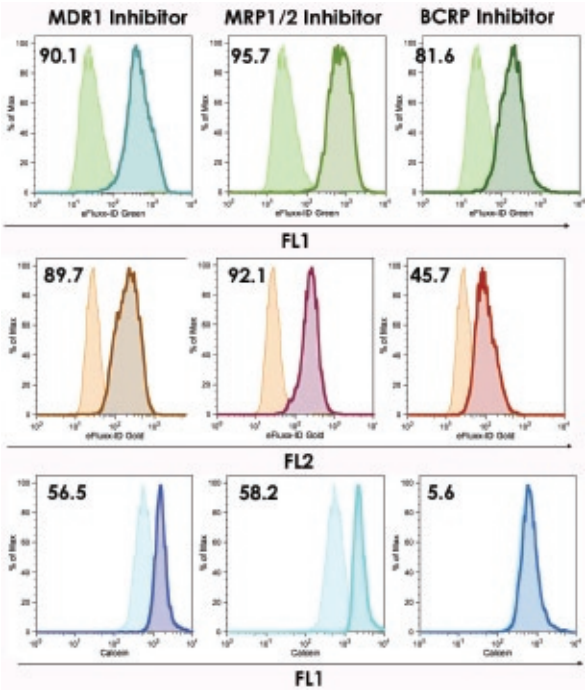

FIGURE: Typical results of the multidrug resistance assay. CHO K1 cells were incubated with eFluxx-ID™ Green (Top panel) or Gold (Middle panel) detection reagent with and without specific inhibitors according to the kit protocol. Resulting fluorescence was measured using flow cytometry. Dark tinted histograms show fluorescence of inhibitor-treated samples and lightly tinted histograms show fluorescence of untreated cells. The difference in fluorescence is indicative of a corresponding protein activity (the numbers in the upper left corners are MAF scores (multidrug resistance activity factors) – quantitative characteristics of multidrug resistance). Calcein AM (common probe for MDR assay, bottom panel) is unable to detect BCRP activity.

Related Products

Product	Prod. No.	Size
GFP-Certified™ Apoptosis/Necrosis detection kit	ENZ-51002-25 ENZ-51002-100	25 Assays 100 Assays
Mito-ID® Membrane potential detection kit	ENZ-51018-K100	100 Assays
Mito-ID® Membrane potential cytotoxicity kit	ENZ-51019-KP002	2 x 96 wells
ROS/RNS detection kit	ENZ-51001-K200	200 Assays
Total ROS/Superoxide detection kit	ENZ-51010	200 Assays

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