

Mito-ID™ Membrane Potential Kits

Mito-ID™ Membrane Potential Detection Kit for microscopy and flow cytometry

ENZ-51018-K100

100 Assays

Suitable for assessment of healthy, early apoptotic, and dead cells.

Mito-ID™ Membrane Potential Cytotoxicity Kit for microplates

ENZ-51019-KP002

2 x 96-well plates

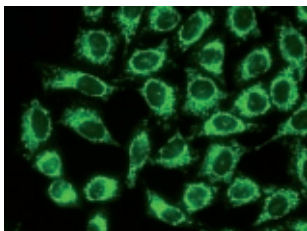
Offers true mix-and-read capability, allowing differentiation between compounds and rank order of their potency.

HIGHLIGHT

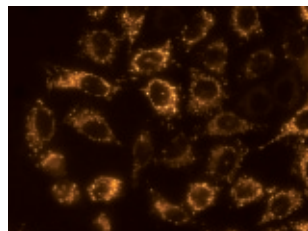
- Ultrasensitive dual emission mitochondrial membrane potential probe shifts from orange (590nm) to green (525nm) when membrane potential declines
- At least 10-fold more sensitive to membrane potential loss than the classical carbocyanine dye, JC-1
- Easier to use and more reproducible than JC-1, due to higher photostability and better aqueous solubility
- Stringently manufactured, to control and eliminate non-specific assay artifacts

The Mito-ID™ Membrane Potential Kits measure mitochondrial membrane potential with a cationic dye that fluoresces either green or orange depending upon membrane potential status. In energized cells, the Mito-ID™ Membrane Potential reagent exists as a green-fluorescent monomer in the cytosol and also accumulates as orange-fluorescent aggregates in the mitochondria. However, in cells with compromised mitochondrial membrane potential, the Mito-ID™ Membrane Potential reagent exists primarily as green-fluorescent monomers throughout the cytosol and no longer exhibits orange fluorescence in the mitochondria. Compared with the commonly used cationic carbocyanine dye JC-1, Mito-ID™ Membrane Potential reagent offers greater solubility, better photostability, and higher sensitivity to mitochondrial membrane potential changes. A control mitochondrial membrane potential perturbation agent, carbonyl cyanide m-chlorophenylhydrazone (CCCP), is provided for monitoring changes in mitochondrial dynamics.

FITC



Orange



Composite

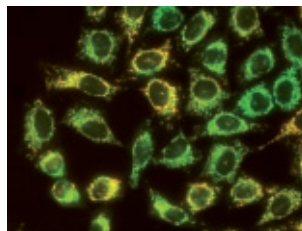
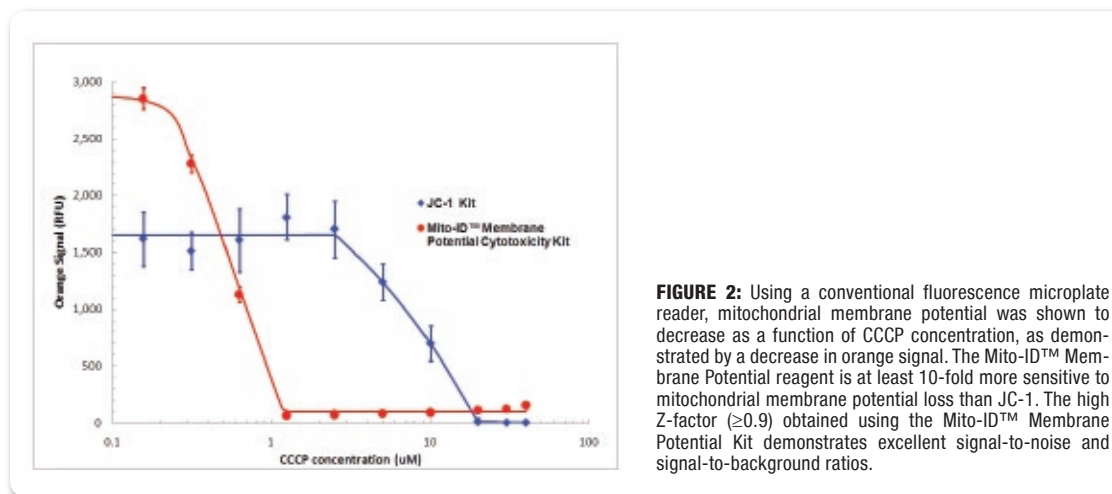


FIGURE 1: The mitochondria of HeLa cells were stained with Mito-ID™ Membrane Potential reagent, and visualized by epifluorescence microscopy. Orange fluorescent aggregates are localized in the mitochondria (Orange channel), while green fluorescent monomers mainly stain the cytosol (FITC channel).

Mitochondria play a central role in diverse biological phenomena including metabolism, bioenergetics, cancer and apoptosis. Recently, it has been found that compromised membrane potential induced by drug accumulation in the mitochondria contributes to toxicity in various organs. Adverse drug reactions often remain undetected until large numbers of patients have already been exposed. The ability to test a compound's safety at the stage of "lead drug selection" (10 – 100 compounds) would provide a valuable tool for drug screening research.

The Mito-ID™ Membrane Potential Kits are validated on conventional fluorescence microscopy and flow cytometry, or by fluorescence microplate assay for high-throughput screening (HTS). Potential applications of the kits are in preclinical drug safety assessment (ADME-Tox) using *in vitro* cell culture models to aid in the drug development process, and especially to differentiate among test compounds and rank in their order of potency.



Related Products

Product	Prod. No.	Size
Lyso-ID™ Red Detection Kit (GFP-Certified™) for microscopy	ENZ-51005-500	500 Assays
Mito-ID™ Red Detection Kit (GFP-Certified™) for microscopy	ENZ-51007-500	500 Assays
Acridine Orange (Ultra Pure)	ENZ-52405	100 mg
DiOC6(3) iodide (Ultra Pure)	ENZ-52303	100 mg
JC-1 (Ultra Pure)	ENZ-52304	5 mg
JC-10 [Enhanced JC-1] (Ultra Pure)	ENZ-52305	5 mg
Nile Red (Ultra Pure)	ENZ-52551	25 mg

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