MITO-ID® Green detection kit

Photostable, non-toxic and selective mitochondrial dye that stains regardless of membrane potential

MITO-ID® Green Detection Kit contains a proprietary membrane-permeable mitochondria-selective dye suitable for use with live-, detergent-permeabilized- and aldehyde-fixed-cells. Unlike conventional dyes (such as DiOC6(3), JC-1, rhodamine 123 and tetramethylrhodamine ethyl ester) MITO-ID® Green dye highlights mitochondria regardless of their energetic state. The dye is compatible with most fluorescence detection systems, including conventional and confocal fluorescence microscopes as well as High Content Screening (HCS) platforms. The kit is useful for assessing mitochondrial morphology changes, estimating mitochondrial mass and co-localizing RFP-tagged proteins to the mitochondrial compartment.

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Ordering Information

Order Online »

ENZ-51022-0100	100 tests
ENZ-51022-K500	500 tests

Manuals, SDS & CofA

View Online »

- Potent mitochondria-selective dye suitable for live, permeabilized and fixed cell staining
- Easily multiplexed with common fluorescent dyes (coumarin, cyanine 5) and fluorescent proteins (BFP, CFP, RFP)
- Highly resistant to photobleaching and concentration quenching, ensuring strong, consistent fluorescence signal, even after extended viewing periods
- Highlights mitochondria regardless of the organelle's membrane potential status
- Stringently manufactured, to control and eliminate non-specific assay artifacts

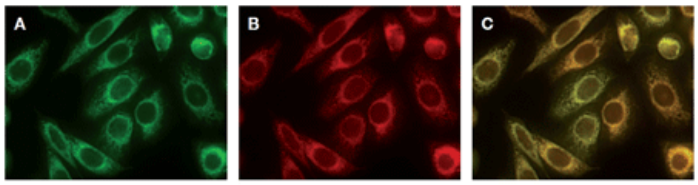


Figure 2: HeLa cells were stained with both MITO-ID® Green (A) and MITO-ID® Red (B) dyes. MITO-ID® Green dye co-localizes with the MITO-ID® Red dye, shown as yellow signal (C), demonstrating selectivity for mitochondria. Previously, MITO-ID® Red dye has been shown to co-localize with mitochondria expressing GFP.

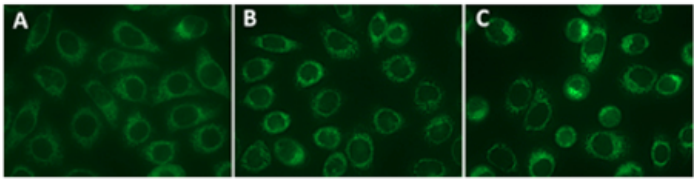
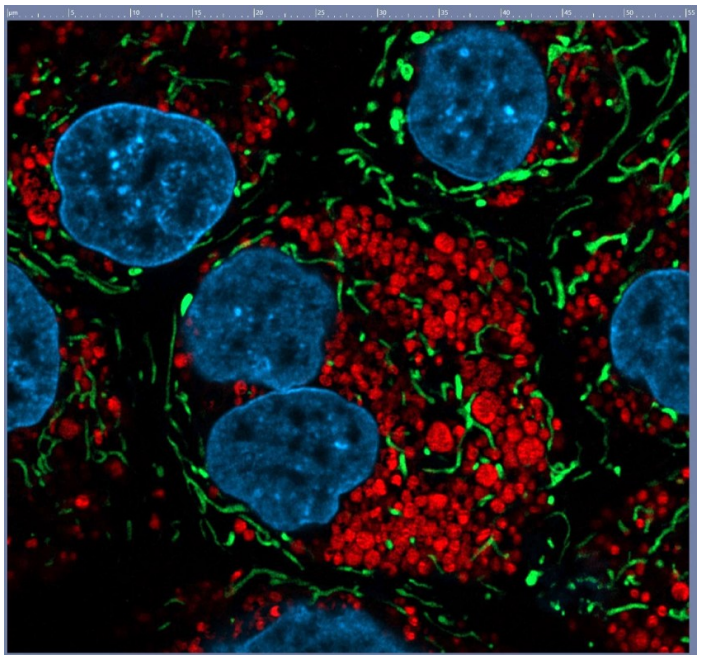


Figure 1: The MITO-ID® Green dye selectively stains mitochondria of living cells (A) and is relatively insensitive to mitochondrial membrane potential uncouplers of phosphorylation, such as CCCP (carbonyl cyanide 3-chlorophenylhydrazone) (B) as well as ion-channel perturbing drugs, such as valinomycin (C).



Live MDCK cells were co-stained with MITO-ID® Green (ENZ-51022) and LYSO-ID® Red detection kits (ENZ-51005), images were taken with 63x objective. The image is a courtesy of Dr. Randy Stout at NYIT.

Handling & Storage

Short Term Storage -20°C

Long Term Storage -80°C

Shipping Dry Ice

Regulatory Status RUO - Research Use Only

Product Details

Application Fluorescence microscopy, Fluorescent detection

Application Notes This kit has been specifically designed for use with RFP-expressing cell lines, as well as cells expressing blue or cyan fluorescent proteins (BFPs, CFPs).
One important application of MITO-ID® Green dye is in fluorescence co-localization imaging with red fluorescent protein (RFP)-tagged proteins. This is a powerful approach for determining the targeting of molecules to intracellular compartments, and for screening of associations and interactions between these molecules. Additionally, the kit is suitable for use with live or post-fixed cells in conjunction with fluorescent probes, such as labeled antibodies, or other fluorescent conjugates displaying similar spectral properties as coumarin, phycoerythrin or cyanine-5. A nuclear counterstain (Hoechst 33342) is provided to highlight this organelle as well.

Contents MITO-ID® Green Detection Reagent
Hoechst 33342 Nuclear Stain
10x Assay Buffer

Quality Control A sample from each lot of MITO-ID® Green Detection Kit is used to stain HeLa cells, using the procedures described in the user manual. The selectivity of the MITO-ID® Green dye is evident.

Quantity For ENZ-51022-K500, 500 assays
For ENZ-51022-0100, 100 assays

Technical Info / Product Notes

The MITO-ID® Green Detection Kit is a member of the CELLESTIAL® product line, reagents and assay kits comprising fluorescent molecular probes that have been extensively benchmarked for live cell analysis applications. CELLESTIAL® reagents and kits are optimal for use in demanding cell analysis applications involving confocal microscopy, flow cytometry, microplate readers and HCS/HTS, where consistency and reproducibility are required.

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