

General Information

There are various organelles playing an important role in cells. Mitochondria are not only a principal site of oxidative phosphorylation to produce ATP, but also an important organelle whose activity and dysfunction are relevant to cancer, cell senescent and neurodegenerative diseases such as Alzheimer's and Parkinson's.

"MitoBright" dyes are fluorescent probes for selectively staining of mitochondria in living cells. It accumulates in healthy mitochondria due to the membrane potential dependency. In addition, "MitoBright" dyes are well retained in mitochondria because of its strong interaction ability to mitochondria.

Contents

MT06 MitoBright Green 50 µg x 3
 MT07 MitoBright Red 50 µg x 3
 MT08 MitoBright Deep Red 50 µg x 3

Storage Condition

MT06 Store in a cool dark place.
 MT07 Store at 0-5°C and protect from light.
 MT08 Store at 0-5°C and protect from light.

Required Equipment and Materials

- Dimethyl sulfoxide (DMSO)
 - HBSS or medium*
 - Micropipettes

* Using serum medium may result in lower fluorescence intensity than that of HBSS.

Preparation of Solution

Preparation of 1 mmol/l DMSO stock solution

Add appropriate volume of DMSO according to the table below to a tube containing 50 µg of MitoBright and dissolve it by pipetting. Store the DMSO stock solution at -20°C.

Probe	Volume of DMSO
MitoBright Green	87 µl
MitoBright Red	71 µl
MitoBright Deep Red	69 µl

General Protocol

- 1) Dilute the 1 mmol/l DMSO stock solution with HBSS or medium* to prepare 25-200 nmol/l working solution.
- 2) Remove the supernatant of pre-incubated cell culture and wash the cells with HBSS or medium* twice.
- 3) Add 25-200 nmol/l working solution to the cells and incubate at 37°C for 15-60 minutes.
- 4) Remove the supernatant and add HBSS or medium*, then observe the cells under a fluorescence microscope.

Usage Examples

The characteristics of MitoBright Green

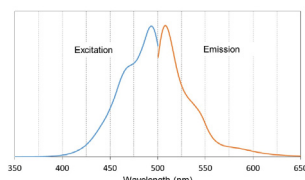


Fig. 1 Excitation and Emission spectra of MitoBright Green.

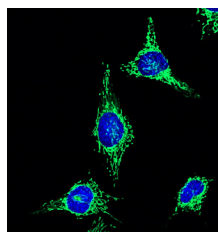


Fig. 2 Fluorescence imaging of mitochondria using MitoBright Green.

Concentration of probe : 100 nmol/l
 Cell line : HeLa cells
 Excitation : 488 nm
 Emission : 501-563 nm
 Nuclear stain: Hoechst 33342

The characteristics of MitoBright Red

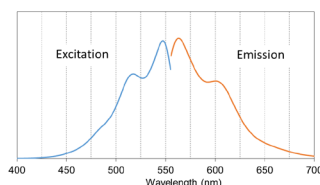


Fig. 3 Excitation and Emission spectra of MitoBright Red.

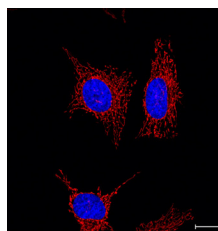


Fig. 4 Fluorescence imaging of mitochondria using MitoBright Red.

Concentration of probe : 100 nmol/l
 Cell line : HeLa cells
 Excitation : 561 nm
 Emission : 558-617 nm
 Nuclear stain: Hoechst 33342

The characteristics of MitoBright Deep Red

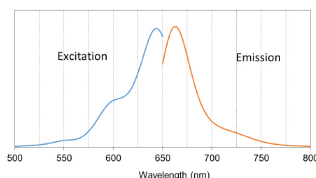


Fig. 5 Excitation and Emission spectra of MitoBright Deep Red.

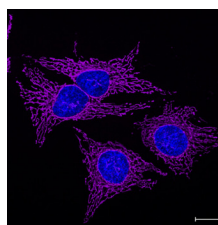


Fig. 6 Fluorescence imaging of mitochondria using MitoBright Deep Red.

Concentration of probe : 100 nmol/l
 Cell line : HeLa cells
 Excitation : 640 nm
 Emission : 656-700 nm
 Nuclear stain: Hoechst 33342

If you need more information, please contact Dojindo technical service.

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