



emulate

Protocol for Emulate Organ-Chips:

Live Staining of Functional Mitochondria Using TMRM

March 7, 2019

EP145 v1.0

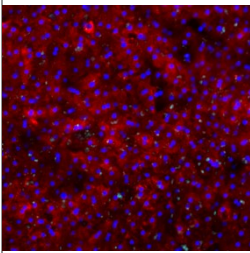
TITLE Live Staining of Functional Mitochondria Using TMRM	DOCUMENT EP145	VERSION 1.0
	DATE 07-MAR-2019	PAGE 2 OF 3

Goals:	Key Steps:	Other Required Materials:
Visualization of functional mitochondria using tetramethylrhodamine, methyl ester (TMRM) reagent via fluorescent imaging in live Organ-Chip	<ul style="list-style-type: none"> <li>Live staining and fluorescent imaging in Organ-Chips</li> </ul>	<ul style="list-style-type: none"> <li>Image-iT™ TMRM Reagent (Thermo Scientific™ I34361)</li> <li>Cell culture media (serum-free)</li> </ul>

## 1. Background

Tetramethylrhodamine, methyl ester (TMRM) is a cell-permeant dye that accumulates in healthy mitochondria with intact membrane potentials.

## 2. Method

Sample type	Live Organ-Chip See Protocol EP155 Live Staining of Cells.
Recommended reagent dilution and incubation time	Dilute 1:1000 (final concentration 0.1 μM to 0.15 μM) in serum-free medium. Incubate for 30 minutes at 37°C.
Representative image	 <p>Image-iT™ TMRM reagent staining (red) of the active mitochondria and nuclei (blue) in human hepatocytes in the Liver-Chip.</p>
More information on vendor site	<a href="https://www.thermofisher.com/order/catalog/product/N1142">https://www.thermofisher.com/order/catalog/product/N1142</a>

## 3. Organs-Chips in which the staining has been validated

Image-iT™ TMRM reagent has been validated in both Liver-Chips and Caco-2 Intestine-Chips.

TITLE	DOCUMENT	VERSION
Live Staining of Functional Mitochondria Using TMRM	EP145	1.0
	DATE	PAGE
	07-MAR-2019	3 OF 3

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