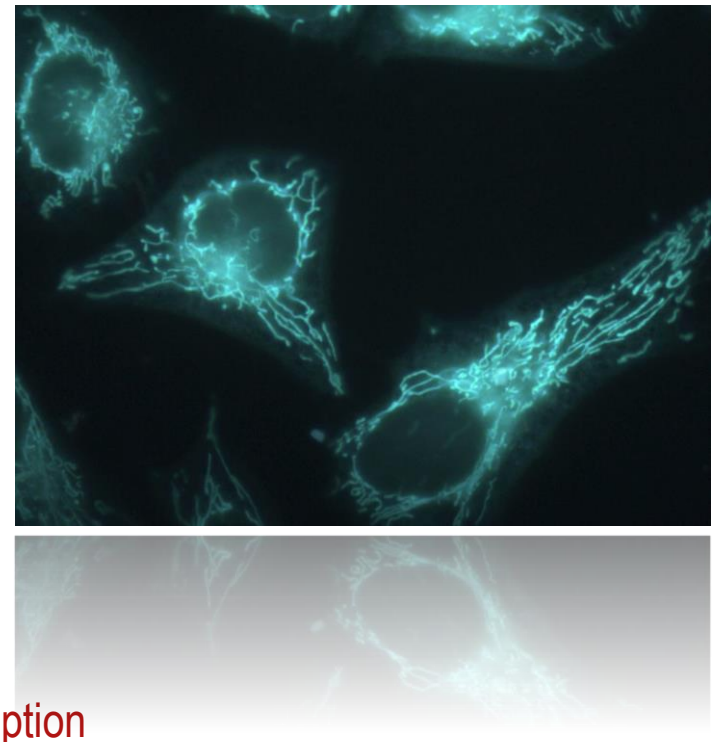
Product Specification

AIE™ Mitochondria Green



Product Description

- The product can target and illuminate mitochondria.
- The product can be used for quick cell imaging as well as fixed localized imaging.
- The product can serve as a photosensitizer to generate reactive oxygen species (ROS) to induce cell apoptosis, which can be used for photodynamic therapy.

Demonstrations

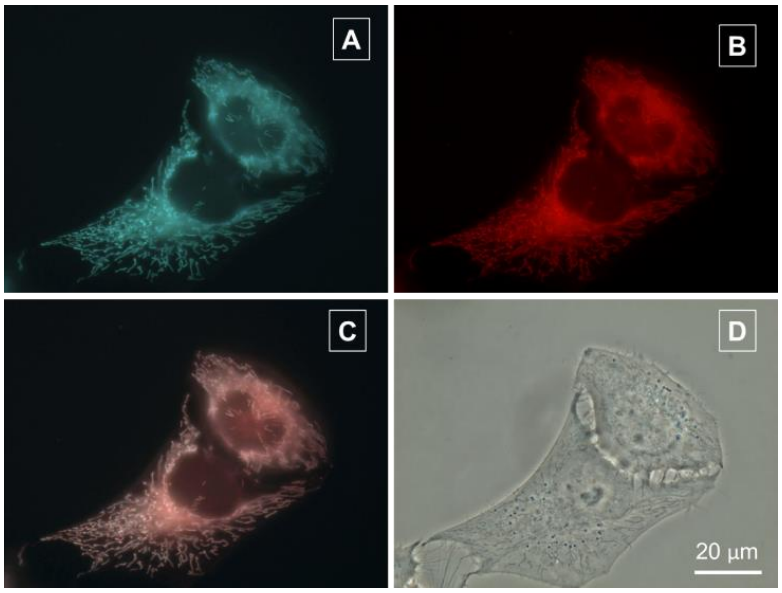


Figure 1. Fluorescent images of HeLa cells stained with (A) AIE™ Mitochondria Green (200 nM) for 15 min and (B) MitoTracker Red (50 nM) for 15 min. (C) Panels A and B merged. (D) The corresponding bright field image. Excitation wavelength: 320-385 nm (for AIE™ Mitochondria Green) and 540-580 nm (for MitoTracker Red).

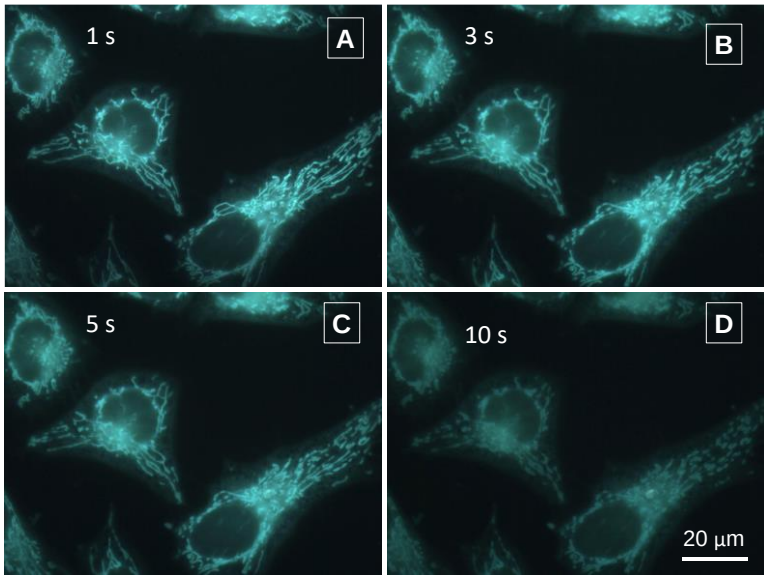


Figure 2. Fluorescent images of HeLa cells stained with AIE™ Mitochondria Green (500 nM) for 10 min and exposed to UV irradiation with different durations: (A) 1 s; (B) 3 s; (C) 5 s; (D) 10 s. Excitation wavelength: 330-385 nm.

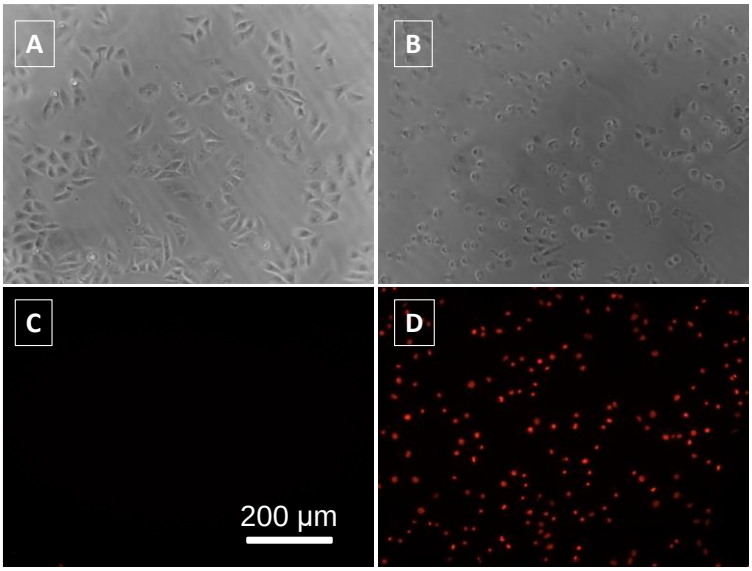


Figure 3. (A, B) Bright field and (C, D) fluorescence images of propidium iodide stained HeLa cells. After incubation with product for 15 min, the cells were treated (A, C) without/ (B, D) with UV irradiation for 2 min, followed by further incubation with further incubation with product for 12 h in the dark.

Recommended storage condition

Store away from sunlight at 2-8 °C

Product parameters

Purpose	Mitochondria staining and induce cell apoptosis
Color:	Yellow powder
Imaging platform:	Fluorescence microscope Confocal microscope
Pack size and quantity:	10 μmol
Detection method:	Fluorescence
Excitation/Emission (nm):	355±25/500±30
Recommended transport condition:	Room temperature
Product declaration:	Only used for research. Do not apply to any detection procedure.

AIEgen Probe for Mitochondria Targeting (Green)
-with reactive oxygen species generation

Introduction

- This product stains the living cell mitochondria with green fluorescence.
- This product could serve as photosensitizer to generate reactive oxygen species (ROS) and induce the cell apoptosis.
- After incubation with this product **WITHOUT WASHING**, living cells can be observed under fluorescence microscope and green signals can be obtained at following optical condition:

Excitation / Emission = 355 ± 30 / 500 ± 30 nm

Material Preparation and Microscope Recommendation

- **Stock solution prepare:** AIE™ Mitochondria Green (1 mM) stock solution is prepared with the 10 μmol of AIE™ Mitochondria Green in 10 mL DMSO/water.
- **Fluorescence Microscope:** The HeLa cells could be imaged under a fluorescence microscope (λ_{ex} = 330 – 385 nm; emission filter = 420 nm long pass)
  # Note: Confocal Microscopy – Recommended with 405 nm laser as excitation; spectral collection region is 420 – 585 nm. (Laser power at researcher's discretion).

Before Your Experiment, You might NEED

1 Living cells	3 DMSO	5 Milliphore water
2 Culture media	4 Buffer PBS solution	6 (Optional) ROS sensor (H2DCFDA)

Protocol (Recommended)

Cell Culture	The HeLa cells were cultured in minimum essential medium containing 10 % fetal bovine serum and antibiotics (100 units/mL penicillin and 100 μg/mL streptomycin) in a 5 % CO_2 humidity incubator at 37 °C.
Cell Imaging	1. **Prepare:** HeLa cells were grown overnight on a petri dish (35 mm) with a coverslip. 2. **Staining**: The live cells were stained with 200 nM of AIE™ Mitochondrial Green for 15 min (by adding 0.4 μL of a 1 mM stock solution in DMSO to 2 mL culture medium). 3. **Wash:** *(Skip) free of washing* 4. **Before imaging:** No need to add any imaging media, and please proceed to next step. 5. **Ready to go:** The cells were observed under a fluorescent microscope through the observation window.
ROS Generation (optional)	1. Cell incubate with AIE™ Mitochondrial Green (1 μM) and H2DCFDA (1 μM) for 10-min 2. Imaging with 488 nm laser as excitation and collection region is 497-579 nm.
Note	Drill a hole of around 10 mm diameter in the middle of the dish. Place cover slide over the dish using paraffin.

Fluorescent Spectrum

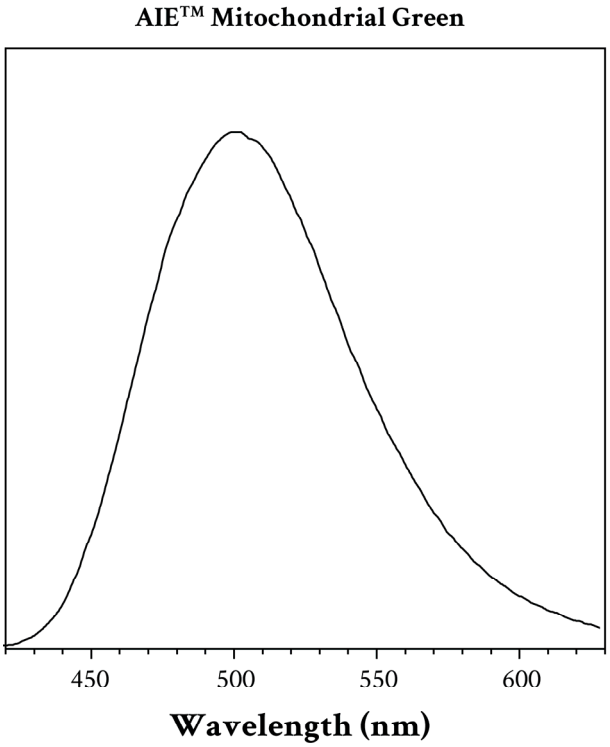


Figure 1 Photoluminescent spectrum of AIE™ Mitochondrial Green probe in aggregation state. Excitation: 390 nm

Reference

1. Zhao, E.; Deng, H.; Chen, S.; Hong, Y; Leung, W. T.; Lam, W. Y.; Tang, B. Z. "A dual functional AEE fluorogen as a mitochondrial-specific bioprobe and an effective photosensitizer for photodynamic therapy" *Chem. Commun.* **2014**, 50, 14451-14454.

2. Optical information and suggested storage conditions:

Item	Ex/Em	Qty	Storage Condition*
AIE™ Mitochondria Green	355 /500 nm	10 μmol	• ≤–20 ℃ (Upon receive this product) • Avoid Light • Keep Dry

* Remember to warm up to room temperature upon opening the vial