

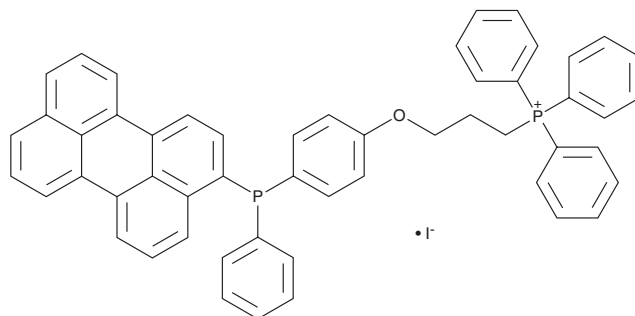
PRODUCT INFORMATION



MitoPeDPP

Item No. 41727

CAS Registry No.: 1187472-58-7
Formal Name: [3-[4-(3-perylenylphenylphosphino)phenoxy]propyl]triphenyl-phosphonium, monoiodide
MF: C₅₃H₄₁OP₂ • I
FW: 840.9
Purity: ≥80%
Ex./Em.: 452/470 nm
Supplied as: A crystalline solid
Storage: 4°C
Stability: ≥1 year
Special Conditions: Light sensitive



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

MitoPeDPP is a cell-permeable fluorescent probe for mitochondrial lipid peroxides. It is selective for *tert*-butyl hydroperoxide (t-BHP) over hydrogen peroxide, superoxide, nitric oxide, and peroxynitrite. Upon reaction with lipid peroxides, MitoPeDPP is oxidized and displays an emission at 470 nm upon excitation at 452 nm.¹ Monitoring lipid peroxidation has high relevance to various cellular processes, especially ferroptosis, which is an iron-dependent form of cell death characterized by increased lipid peroxidation.^{2,3}

General Protocol

NOTE: This protocol is provided as a general method. Please optimize the staining conditions, such as the final concentration of MitoPeDPP and the exposure time of the stimulating agent(s).

1. Prepare solutions

- Prepare a 1 mM stock solution of MitoPeDPP in DMSO. Dissolve 5 µg of MitoPeDPP in 50 µl of DMSO and mix with pipetting.

NOTE: MitoPeDPP is not stable in DMSO.

NOTE: Protect the MitoPeDPP stock solution from light and use it within the same day.

- Immediately before labeling cells, dilute the 1 mM MitoPeDPP stock solution with HHBS to prepare a 0.1-0.5 µM MitoPeDPP working solution.

NOTE: Prepare the working solution immediately prior to adding it to the cells to avoid the autooxidation of MitoPeDPP.

NOTE: HHBS is recommended to maintain stable cell conditions.

2. Prepare, label, and image the cells

- Prepare cells for the assay.
- Discard the cell culture medium and wash the cells twice with either HHBS or PBS.
- Add an appropriate volume of the MitoPeDPP working solution to the cells, incubate at 37°C for 15 minutes, and protect from light.

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 01/24/2025

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 • USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Type of dish	Volume of working solution
35 mm	2,000 μ l
96-well plate	100 μ l

- d. Discard the working solution and wash the cells twice with either HHBS or PBS.
- e. Add HHBS or PBS containing a stimulating agent and observe the cells using fluorescence microscopy with excitation and emission wavelengths of 470 and 525 nm, respectively, or band pass filters of 440 and 550 nm, respectively.

NOTE: The time to generate lipophilic peroxides in cells varies depending on the cell type or stimulating agent.

References

1. Nakamura, S., Nakanishi, A., Takazawa, M., *et al.* Ionomycin-induced calcium influx induces neurite degeneration in mouse neuroblastoma cells: Analysis of a time-lapse live cell imaging system. *Free Radic. Res.* **50**(11), 1214-1225 (2016).
2. Angeli, J.P.F., Miyamoto, S., and Schulze, A. Ferroptosis: The greasy side of cell death. *Chem. Res. Toxicol.* **32**, 362-369 (2019).
3. Yang, W.S. and Stockwell, B.R. Ferroptosis: Death by lipid peroxidation. *Trends Cell Biol.* **26**(3), 165-176 (2016).

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM