

DATASHEET

JC-10 Mitochondrial Membrane Potential Assay Kit

Product overview

Name

JC-10 Mitochondrial Membrane Potential Assay Kit

Cat No

HB13032

Biological description

JC-10 is a highly soluble fluorescent probe ideal for assessing mitochondrial membrane potential. In healthy cells with polarized mitochondria, JC-10 aggregates, emitting a strong orange fluorescence (Ex/Em: 540nm/590nm). However, in cells with depolarized mitochondria, a hallmark of apoptosis and other cellular stresses, JC-10 reverts to its monomeric form, resulting in a shift to green fluorescence (Ex/Em: 490nm/525nm). This reversible, ratiometric change in fluorescence emission provides a reliable indicator of mitochondrial health. JC-10's superior aqueous solubility to JC-1 makes it a convenient and robust tool for various applications, including fluorescence microscopy, flow cytometry, and high-throughput screening.

Biological action

This kit contains everything needed to make 25 mL of working solution which is suitable for five 96-well plates or 500 flow cytometry samples.

Applications

Dyes & stains

Kit contents

fluorescence imaging, live cell imaging

- 100x JC-10 dye in DMSO (250µl)
- Dye loading buffer (25ml)
- Masking buffer (25ml)

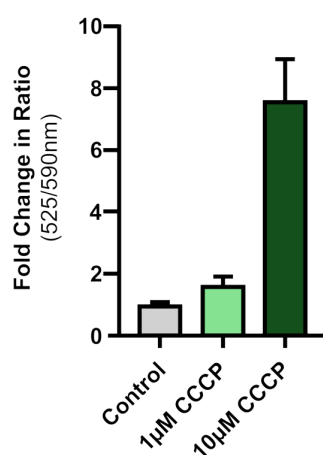
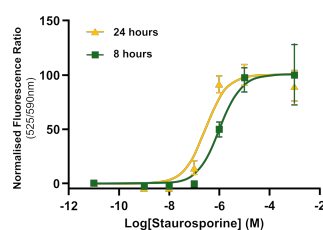
Purity

>98%

Description

Fluorescent mitochondrial membrane potential assay kit

Images



Biological Data

Application notes

Please see our [JC-10 Mitochondrial Membrane Potential Assay Kit Protocol](#)

Solubility & Handling

Storage instructions**Handling****Important**

-20 °C

JC-10 is light sensitive; exposure to light may affect compound performance. We therefore recommend storing the solid material and any solutions in the dark and protecting from light.

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

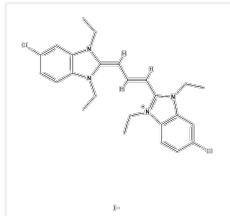
Chemical Data

Chemical name

(2E)-5-chloro-2-[(E)-3-(5-chloro-1,3-diethylbenzimidazol-1-ium-2-yl)prop-2-enylidene]-1,3-diethylbenzimidazole;iodide

Molecular Weight

583.3

Chemical structure**Molecular Formula**

C₂₅H₂₉Cl₂IN₄

CAS Number

5563-28-0

PubChem identifier

171361437

SMILES

CCN1C2=C(C=C(C=C2)Cl)N(/C1=C/C=C/C3=[N+](C4=C(N3CC)C=C(C=C4)Cl)CC)CC.[I-]

InChiKey

WBMULJOQZAKELP-UHFFFAOYSA-M

Excitation

490nm / 540nm

Emission

525nm / 590nm

References

Garlic exosome-like nanoparticles reverse high-fat diet induced obesity via the gut/brain axis.

Sundaram K et al (2022) Theranostics 12

PubMedID

[35154484](#)

Growth Differentiation Factor 15 Protects SH-SY5Y Cells From Rotenone-Induced Toxicity by Suppressing Mitochondrial Apoptosis.

Li P et al (2022) Frontiers in aging neuroscience 14

PubMedID

[35721026](#)

JC-10 probe as a novel method for analyzing the mitochondrial membrane potential and cell stress in whole zebrafish embryos.

Younes N et al (2022) Toxicology research 11

PubMedID

[35237413](#)