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## DATASHEET

JC-10

### Product overview

<b>Name</b>	JC-10
<b>Cat No</b>	HB19967
<b>Biological description</b>	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.
<b>Biological action</b>	Dyes & stains
<b>Applications</b>	fluorescence imaging, live cell imaging
<b>Purity</b>	>98%
<b>Description</b>	Fluorescent mitochondrial membrane potential dye

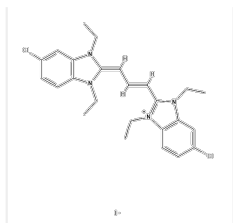
### Solubility & Handling

<b>Storage instructions</b>	-20 °C
<b>Solubility overview</b>	Soluble in DMSO (5mg/ml) and H <sub>2</sub> O (1μM)
<b>Storage of solutions</b>	Prepare and use solutions on the same day if possible. Store solutions at -20 °C for up to one month if storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.
<b>Handling</b>	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.
<b>Shipping Conditions Important</b>	Stable for <b>ambient temperature</b> shipping. Follow storage instructions on receipt. This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

### Chemical Data

<b>Chemical name</b>	(2E)-5-chloro-2-[(E)-3-(5-chloro-1,3-diethylbenzimidazol-1-ium-2-yl)prop-2-enylidene]-1,3-diethylbenzimidazole;iodide
<b>Molecular Weight</b>	583.3
<b>Chemical structure</b>	

**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 Formula** C<sub>25</sub>H<sub>29</sub>Cl<sub>2</sub>IN<sub>4</sub>

**CAS Number** 5563-28-0

**PubChem identifier** 171361437

**SMILES** CCN\1C2=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

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## References

**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](#)

**Dual Effects of Cyclooxygenase Inhibitors in Combination With CD19.CAR-T Cell Immunotherapy.**

Yang M et al (2021) Frontiers in immunology 12

**PubMedID** [34122428](#)

**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](#)

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